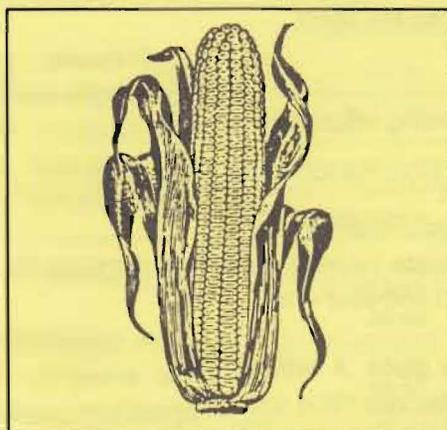


ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 136

CORN

LOAMY SOILS, FLOOD IRRIGATION



AUTHORS

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UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Nathan McKinney, Chairman	Ford L. Baldwin
Raymond C. Benz	Albert Bivings
Stanley L. Chapman	Jerry Don Clark
Charlie Guy	Gary Huitink
Billy E. Herrington	Donald R. Johnson
H.J. Mascagni	Michael L. May
Roy N. Sharp	Phil L. Tacker
Tony E. Windham	

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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$27.27	_____
FERTILIZER	\$62.27	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$7.30	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$18.50	_____
REPAIRS	\$21.90	_____
LABOR	\$8.47	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$14.15	_____
REPAIRS	\$2.86	_____
IRRIGATION LABOR	\$6.62	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$22.71	_____
CUSTOM DRY OR GINNING	\$52.99	_____
MISCELLANEOUS	\$1.25	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$10.97	_____
TOTAL SPECIFIED OPERATING COSTS	\$263.34	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	91.00	105.00	140.00	175.00	189.00
	\$2.60	\$2.32	\$1.88	\$1.61	\$1.54

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$8.43	_____
INTEREST	\$6.96	_____
EQUIPMENT:		
DEPRECIATION	\$6.00	_____
INTEREST	\$3.26	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$15.09	_____
INTEREST	\$5.53	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$8.16	_____
INTEREST	\$7.62	_____
TAXES & INSURANCE	\$5.31	_____
INTEREST	\$0.58	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$66.95	_____
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$330.29	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	91.00	105.00	140.00	175.00	189.00
	\$3.33	\$2.96	\$2.36	\$2.00	\$1.89

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: CORN. 1991
ENTERPRISE FILE NO.: CN9101
LOCATION: ARKANSAS
SOILS TYPE: LOAMY
IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$49.81	\$62.27	\$74.72
DRY OR GINNING (COMMERCIAL)	\$42.39	\$52.99	\$63.59
DEPRECIATION	\$30.15	\$37.69	\$45.23
SEED	\$21.82	\$27.27	\$32.72
REPAIRS	\$19.81	\$24.76	\$29.71
OWNERSHIP INTEREST	\$19.16	\$23.95	\$28.74
HAUL (CUSTOM HIRE)	\$18.17	\$22.71	\$27.25
MACHINERY FUEL & OIL	\$14.80	\$18.50	\$22.20
HIRED LABOR	\$12.08	\$15.09	\$18.11
IRRIGATION FUEL & OIL	\$11.32	\$14.15	\$16.98
INTEREST ON OP. CAP.	\$8.77	\$10.97	\$13.16
HERBICIDE	\$5.84	\$7.30	\$8.76
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM TAXES	\$3.40	\$4.25	\$5.10
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.85	\$1.06	\$1.27
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$264.23	\$330.29	\$396.35

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	91.00	\$2.67	\$3.33	\$4.00
-25% OF BASE YIELD	105.00	\$2.37	\$2.96	\$3.55
BASE YIELD	140.00	\$1.89	\$2.36	\$2.83
+25% OF BASE YIELD	175.00	\$1.60	\$2.00	\$2.40
+35% OF BASE YIELD	189.00	\$1.51	\$1.89	\$2.27

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: CORN. 1991
 ENTERPRISE FILE NO.: CN9101
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS:

\$264.23 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	91.00	105.00	140.00	175.00	189.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.49	(\$106.63)	(\$91.85)	(\$54.93)	(\$17.97)	(\$3.19)
	\$1.90	(\$70.00)	(\$49.59)	\$1.42	\$52.47	\$72.88
BASE PRICE =	\$2.30	(\$33.37)	(\$7.32)	\$57.77	\$122.91	\$148.96
	\$2.70	\$3.26	\$34.94	\$114.12	\$193.35	\$225.03
	\$3.11	\$39.88	\$77.20	\$170.47	\$263.78	\$301.10

BASE COSTS:

\$330.29 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	91.00	105.00	140.00	175.00	189.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.49	(\$167.29)	(\$154.06)	(\$120.99)	(\$87.86)	(\$74.63)
	\$1.90	(\$130.67)	(\$111.79)	(\$64.64)	(\$17.43)	\$1.45
BASE PRICE =	\$2.30	(\$94.04)	(\$69.53)	(\$8.29)	\$53.01	\$77.52
	\$2.70	(\$57.41)	(\$27.27)	\$48.06	\$123.45	\$153.59
	\$3.11	(\$20.78)	\$14.99	\$104.41	\$193.89	\$229.66

+ 20% DEVIATION FROM BASE COSTS:

\$396.35 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	91.00	105.00	140.00	175.00	189.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.49	(\$227.96)	(\$216.26)	(\$187.05)	(\$157.76)	(\$146.06)
	\$1.90	(\$191.33)	(\$174.00)	(\$130.70)	(\$87.32)	(\$69.99)
BASE PRICE =	\$2.30	(\$154.71)	(\$131.74)	(\$74.35)	(\$16.89)	\$6.08
	\$2.70	(\$118.08)	(\$89.47)	(\$18.00)	\$53.55	\$82.16
	\$3.11	(\$81.45)	(\$47.21)	\$38.35	\$123.99	\$158.23

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

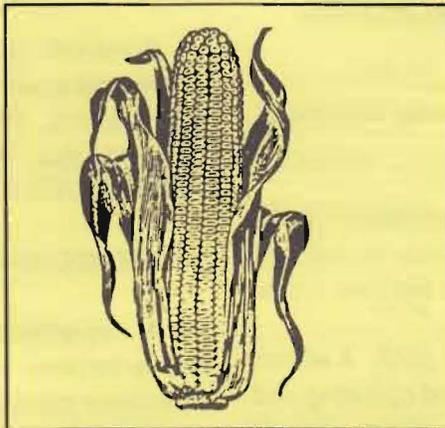
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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$27.27	_____
FERTILIZER	\$66.77	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$7.30	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$17.12	_____
REPAIRS	\$20.99	_____
LABOR	\$7.79	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$15.38	_____
REPAIRS	\$2.85	_____
IRRIGATION LABOR	\$7.45	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$24.33	_____
CUSTOM DRY OR GINNING	\$56.77	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$11.18	_____
TOTAL SPECIFIED OPERATING COSTS	\$271.30	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	97.50	112.50	150.00	187.50	202.50
	\$2.49	\$2.23	\$1.81	\$1.56	\$1.48

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$7.69	_____
INTEREST	\$6.34	_____
EQUIPMENT:		
DEPRECIATION	\$5.71	_____
INTEREST	\$3.07	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$15.09	_____
INTEREST	\$5.53	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$11.93	_____
INTEREST	\$10.53	_____
TAXES & INSURANCE	\$5.79	_____
INTEREST	\$0.64	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$72.32	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$343.62	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	97.50	112.50	150.00	187.50	202.50
	\$3.23	\$2.87	\$2.29	\$1.94	\$1.84

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: CORN, 1991
ENTERPRISE FILE NO.: CN9102
LOCATION: ARKANSAS
SOILS TYPE: LOAMY
IRRIGATION METHOD: FURROW

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$53.41	\$66.77	\$80.12
DRY OR GINNING (COMMERCIAL)	\$45.42	\$56.77	\$68.12
DEPRECIATION	\$32.33	\$40.42	\$48.50
SEED	\$21.82	\$27.27	\$32.72
OWNERSHIP INTEREST	\$20.89	\$26.11	\$31.34
HAUL (CUSTOM HIRE)	\$19.46	\$24.33	\$29.20
REPAIRS	\$19.08	\$23.84	\$28.61
MACHINERY FUEL & OIL	\$13.70	\$17.12	\$20.55
IRRIGATION FUEL & OIL	\$12.30	\$15.38	\$18.45
HIRED LABOR	\$12.20	\$15.25	\$18.30
INTEREST ON OP. CAP.	\$8.95	\$11.18	\$13.42
HERBICIDE	\$5.84	\$7.30	\$8.76
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM TAXES	\$3.71	\$4.63	\$5.56
FARM INSURANCE	\$0.93	\$1.16	\$1.39
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$274.89	\$343.62	\$412.34

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	97.50	\$2.58	\$3.23	\$3.87
-25% OF BASE YIELD	112.50	\$2.30	\$2.87	\$3.45
BASE YIELD	150.00	\$1.83	\$2.29	\$2.75
+25% OF BASE YIELD	187.50	\$1.55	\$1.94	\$2.33
+35% OF BASE YIELD	202.50	\$1.47	\$1.84	\$2.21

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: CORN, 1991
 ENTERPRISE FILE NO.: CN9102
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

- 20% DEVIATION FROM BASE COSTS: \$274.89 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	97.50	112.50	150.00	187.50	202.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.49	(\$106.04)	(\$90.20)	(\$50.64)	(\$11.04)	\$4.79
	\$1.90	(\$66.79)	(\$44.92)	\$9.73	\$64.42	\$86.29
BASE PRICE =	\$2.30	(\$27.55)	\$0.36	\$70.11	\$139.89	\$167.80
	\$2.70	\$11.70	\$45.64	\$130.48	\$215.36	\$249.31
	\$3.11	\$50.94	\$90.92	\$190.86	\$290.83	\$330.81

BASE COSTS: \$343.62 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	97.50	112.50	150.00	187.50	202.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.49	(\$168.99)	(\$154.80)	(\$119.37)	(\$83.88)	(\$69.70)
	\$1.90	(\$129.74)	(\$109.52)	(\$58.99)	(\$8.41)	\$11.81
BASE PRICE =	\$2.30	(\$90.50)	(\$64.24)	\$1.38	\$67.05	\$93.31
	\$2.70	(\$51.25)	(\$18.96)	\$61.76	\$142.52	\$174.82
	\$3.11	(\$12.01)	\$26.32	\$122.13	\$217.99	\$256.33

+ 20% DEVIATION FROM BASE COSTS: \$412.34 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	97.50	112.50	150.00	187.50	202.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.49	(\$231.93)	(\$219.40)	(\$188.09)	(\$156.72)	(\$144.19)
	\$1.90	(\$192.69)	(\$174.12)	(\$127.72)	(\$81.25)	(\$62.68)
BASE PRICE =	\$2.30	(\$153.45)	(\$128.84)	(\$67.34)	(\$5.78)	\$18.83
	\$2.70	(\$114.20)	(\$83.56)	(\$6.97)	\$69.68	\$100.33
	\$3.11	(\$74.96)	(\$38.27)	\$53.41	\$145.15	\$181.84

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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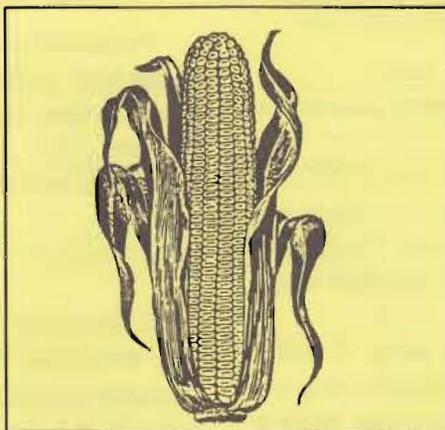
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 138

CORN

LOAMY SOILS, CENTER PIVOT
IRRIGATION, NON-TOWABLE, 130 ACRES



AUTHORS

CLYDE A. STUART
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BILLY E. HERRINGTON, JR.
ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Nathan McKinney, Chairman	Ford L. Baldwin
Raymond C. Benz	Albert Bivings
Stanley L. Chapman	Jerry Don Clark
Charlie Guy	Gary Huitink
Billy E. Herrington	Donald R. Johnson
H.J. Mascagni	Michael L. May
Roy N. Sharp	Phil L. Tacker
Tony E. Windham	

THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$27.27	_____
FERTILIZER	\$62.27	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$7.30	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$17.12	_____
REPAIRS	\$20.99	_____
LABOR	\$7.79	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$18.43	_____
REPAIRS	\$5.81	_____
IRRIGATION LABOR	\$1.72	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$24.33	_____
CUSTOM DRY OR GINNING	\$56.77	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$10.95	_____
TOTAL SPECIFIED OPERATING COSTS	\$266.84	_____

PER UNIT BREAK-EVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	97.50	112.50	150.00	187.50	202.50
	\$2.44	\$2.19	\$1.78	\$1.53	\$1.46

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$7.69	_____
INTEREST	\$6.34	_____
EQUIPMENT:		
DEPRECIATION	\$5.71	_____
INTEREST	\$3.07	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$15.09	_____
INTEREST	\$5.53	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$26.49	_____
INTEREST	\$22.58	_____
TAXES & INSURANCE	\$8.53	_____
INTEREST	\$0.94	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$101.97	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$368.81	_____
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PER UNIT BREAK-EVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	97.50	112.50	150.00	187.50	202.50
	\$3.49	\$3.09	\$2.46	\$2.08	\$1.96

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: CORN, 1991
 ENTERPRISE FILE NO.: CN9103
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, TOWABLE, 260 ACRES

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$49.81	\$62.27	\$74.72
DRY OR GINNING (COMMERCIAL)	\$45.42	\$56.77	\$68.12
DEPRECIATION	\$43.98	\$54.98	\$65.97
OWNERSHIP INTEREST	\$30.77	\$38.46	\$46.16
SEED	\$21.82	\$27.27	\$32.72
REPAIRS	\$21.44	\$26.80	\$32.16
HAUL (CUSTOM HIRE)	\$19.46	\$24.33	\$29.20
IRRIGATION FUEL & OIL	\$14.74	\$18.43	\$22.11
MACHINERY FUEL & OIL	\$13.70	\$17.12	\$20.55
INTEREST ON OP. CAP.	\$8.76	\$10.95	\$13.14
HIRED LABOR	\$7.62	\$9.52	\$11.42
HERBICIDE	\$5.84	\$7.30	\$8.76
FARM TAXES	\$5.46	\$6.82	\$8.19
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM INSURANCE	\$1.36	\$1.71	\$2.05
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$295.05	\$368.81	\$442.58

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	97.50	\$2.79	\$3.49	\$4.18
-25% OF BASE YIELD	112.50	\$2.48	\$3.09	\$3.71
BASE YIELD	150.00	\$1.97	\$2.46	\$2.95
+25% OF BASE YIELD	187.50	\$1.66	\$2.08	\$2.49
+35% OF BASE YIELD	202.50	\$1.57	\$1.96	\$2.36

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: CORN, 1991
 ENTERPRISE FILE NO.: CN9103
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, TOWABLE, 260 ACRES

- 20% DEVIATION FROM BASE COSTS: **\$295.05 PER ACRE**

YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	97.50	112.50	150.00	187.50	202.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.57	(\$118.88)	(\$101.92)	(\$59.55)	(\$17.14)	(\$0.18)
	\$1.94	(\$83.29)	(\$60.86)	(\$4.80)	\$51.30	\$73.73
BASE PRICE =	\$2.30	(\$47.70)	(\$19.80)	\$49.95	\$119.74	\$147.64
	\$2.79	(\$0.42)	\$34.76	\$122.70	\$210.67	\$245.86
	\$3.27	\$46.87	\$89.33	\$195.45	\$301.61	\$344.07

BASE COSTS: **\$368.81 PER ACRE**

YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	97.50	112.50	150.00	187.50	202.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.57	(\$186.87)	(\$171.56)	(\$133.31)	(\$95.02)	(\$79.71)
	\$1.94	(\$151.28)	(\$130.50)	(\$78.56)	(\$26.58)	(\$5.79)
BASE PRICE =	\$2.30	(\$115.69)	(\$89.43)	(\$23.81)	\$41.86	\$68.12
	\$2.79	(\$68.41)	(\$34.87)	\$48.94	\$132.80	\$166.33
	\$3.27	(\$21.12)	\$19.69	\$121.69	\$223.73	\$264.54

+ 20% DEVIATION FROM BASE COSTS: **\$442.58 PER ACRE**

YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	97.50	112.50	150.00	187.50	202.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.57	(\$254.86)	(\$241.20)	(\$207.08)	(\$172.89)	(\$159.23)
	\$1.94	(\$219.27)	(\$200.13)	(\$152.33)	(\$104.46)	(\$85.32)
BASE PRICE =	\$2.30	(\$183.68)	(\$159.07)	(\$97.58)	(\$36.02)	(\$11.41)
	\$2.79	(\$136.39)	(\$104.51)	(\$24.83)	\$54.92	\$86.80
	\$3.27	(\$89.11)	(\$49.95)	\$47.92	\$145.86	\$185.02

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
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AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
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AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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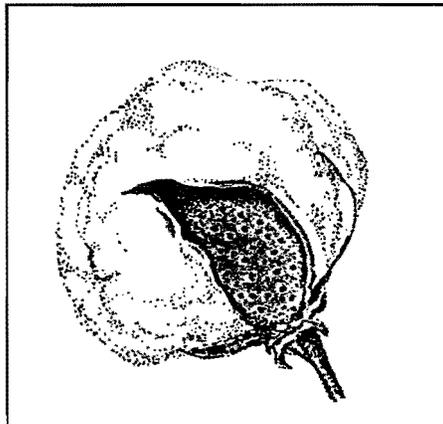
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 127

COTTON

LOAMY SOILS, SOLID PLANTED,
SOUTH OF I-40, EASTERN ARKANSAS



AUTHORS

BILLY E. HERRINGTON, JR.
CLYDE A. STUART
TONY E. WINDHAM
ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

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machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

Claude M. Bonner, Chairman
Billy E. Herrington
Bringle Jennings
Terry Kirkpatrick
Woody N. Miley
Clifford S. Snyder
Phil L. Tacker
Robert G. Wells

Charlie Guy
Gary Huitink
Donald R. Johnson
J. Scott McConnell
George Morris
Ples Spradley
Marvin L. Wall
Tony E. Windham

THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$8.30	_____
FERTILIZER	\$37.86	_____
LIME + APPLICATION	\$10.01	_____
HERBICIDE	\$16.89	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$52.77	_____
DEFOLIANT	\$5.61	_____
AERIAL APPLICATION	\$38.25	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$25.05	_____
REPAIRS	\$44.30	_____
LABOR	\$22.18	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$0.00	_____
CUSTOM DRY OR GINNING	\$50.00	_____
MISCELLANEOUS	\$4.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$14.92	_____
TOTAL SPECIFIED OPERATING COSTS	\$336.21	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

	YIELD IN POUNDS				
	406.25	468.75	625.00	781.25	843.75
<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>					
	\$0.70	\$0.61	\$0.46	\$0.37	\$0.34

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$8.13	_____
INTEREST	\$6.71	_____
EQUIPMENT:		
DEPRECIATION	\$7.26	_____
INTEREST	\$4.10	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$32.21	_____
INTEREST	\$13.55	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$5.54	_____
INTEREST	\$0.61	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$78.10	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$414.31	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

	YIELD IN POUNDS				
	406.25	468.75	625.00	781.25	843.75
<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>					
	\$0.90	\$0.78	\$0.58	\$0.47	\$0.43

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9101
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
INSECTICIDE	\$42.21	\$52.77	\$63.32
DRY OR GINNING (COMMERCIAL)	\$40.00	\$50.00	\$60.00
DEPRECIATION	\$38.08	\$47.59	\$57.11
REPAIRS	\$35.44	\$44.30	\$53.16
AERIAL APPLI. (CUSTOM HIRE)	\$30.60	\$38.25	\$45.90
FERTILIZER	\$30.28	\$37.86	\$45.43
MACHINERY FUEL & OIL	\$20.04	\$25.05	\$30.06
OWNERSHIP INTEREST	\$19.97	\$24.97	\$29.96
HIRED LABOR	\$17.74	\$22.18	\$26.61
HERBICIDE	\$13.51	\$16.89	\$20.27
INTEREST ON OP. CAP.	\$11.94	\$14.92	\$17.91
LIME + APPLICATION	\$8.00	\$10.01	\$12.01
SEED	\$6.64	\$8.30	\$9.96
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
DEFOLIANT	\$4.49	\$5.61	\$6.73
FARM TAXES	\$3.54	\$4.43	\$5.31
MISCELLANEOUS	\$3.20	\$4.00	\$4.80
FARM INSURANCE	\$0.89	\$1.11	\$1.33
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
HAUL (CUSTOM HIRE)			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$331.45	\$414.31	\$497.18

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS*Breakeven prices reflect a cottonseed credit against ginning charges.*

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	406.25	\$0.72	\$0.90	\$1.08
-25% OF BASE YIELD	468.75	\$0.62	\$0.78	\$0.93
BASE YIELD	625.00	\$0.47	\$0.58	\$0.70
+25% OF BASE YIELD	781.25	\$0.37	\$0.47	\$0.56
+35% OF BASE YIELD	843.75	\$0.35	\$0.43	\$0.52

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9101
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS:

**\$291.45 PER ACRE
YIELD IN POUNDS**

PRODUCER PRICE ESTIMATES	YIELD IN POUNDS					
	406.25	468.75	625.00	781.25	843.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$122.46)	(\$96.46)	(\$31.46)	\$33.54	\$59.54
	\$0.53	(\$76.96)	(\$43.96)	\$38.54	\$121.04	\$154.04
BASE PRICE =	\$0.64	(\$31.46)	\$8.54	\$108.54	\$208.54	\$248.54
	\$0.75	\$14.04	\$61.04	\$178.54	\$296.04	\$343.04
	\$0.86	\$59.54	\$113.54	\$248.54	\$383.54	\$437.54

BASE COSTS:

**\$364.31 PER ACRE
YIELD IN POUNDS**

PRODUCER PRICE ESTIMATES	YIELD IN POUNDS					
	406.25	468.75	625.00	781.25	843.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$195.32)	(\$169.32)	(\$104.33)	(\$39.33)	(\$13.33)
	\$0.53	(\$149.82)	(\$116.82)	(\$34.33)	\$48.17	\$81.17
BASE PRICE =	\$0.64	(\$104.32)	(\$64.32)	\$35.67	\$135.67	\$175.67
	\$0.75	(\$58.82)	(\$11.82)	\$105.67	\$223.17	\$270.17
	\$0.86	(\$13.32)	\$40.68	\$175.67	\$310.67	\$364.67

+ 20% DEVIATION FROM BASE COSTS:

**\$437.18 PER ACRE
YIELD IN POUNDS**

PRODUCER PRICE ESTIMATES	YIELD IN POUNDS					
	406.25	468.75	625.00	781.25	843.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$268.19)	(\$242.19)	(\$177.19)	(\$112.20)	(\$86.20)
	\$0.53	(\$222.69)	(\$189.69)	(\$107.19)	(\$24.70)	\$8.30
BASE PRICE =	\$0.64	(\$177.19)	(\$137.19)	(\$37.19)	\$62.80	\$102.80
	\$0.75	(\$131.69)	(\$84.69)	\$32.81	\$150.30	\$197.30
	\$0.86	(\$86.19)	(\$32.19)	\$102.81	\$237.80	\$291.80

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9101
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

MACHINERY COST					
OPERATING COST			OWNERSHIP COST		
REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRECIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)

OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRECIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	CHISEL PLOW	21.0	175.0	7.127	1.00	\$1.64	\$1.89	\$1.48	\$1.19	\$0.27	\$6.48
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	4	DISK BEDDER 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
6	4	DISK BEDDER 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	5	TRIPLE K	26.7	175.0	11.638	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.638	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
8	5	PLANTER 8 ROW @ 38"	25.3	175.0	9.257	1.00	\$1.94	\$1.46	\$2.08	\$1.12	\$0.25	\$6.82
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	9.257	1.00	\$0.16	\$0.00	\$0.40	\$0.22	\$0.05	\$0.83
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
9	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
10	5	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	5	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.05	\$0.07	\$0.03	\$0.01	\$0.00	\$0.16
13	6	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.05	\$0.07	\$0.03	\$0.01	\$0.00	\$0.16
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	INSECT SCOUTING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9101
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$0.77	\$7.25
3								0.00%	\$0.00		\$0.47	\$5.48
4	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	40.000			100.00%	\$11.20		\$0.00	\$11.20
	PHOSPHATE (MATERIAL)	0-48-0	POUND	\$0.103	50.000			100.00%	\$5.15		\$0.00	\$5.15
	POTASH (MATERIAL)	0-0-60	POUND	\$0.083	80.000			100.00%	\$6.64		\$0.00	\$6.64
5								0.00%	\$0.00		\$0.41	\$4.04
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.59	\$5.65
	PROWL	4EC	PINT	\$3.221	1.250	38	18	47.37%	\$1.91		\$0.00	\$2.57
								0.00%	\$0.00		\$0.00	\$0.19
8	COTTON SEED		POUND	\$0.593	14.000			100.00%	\$8.30		\$1.14	\$16.27
	COTORAN	4L	PINT	\$6.186	1.600	38	18	47.37%	\$4.69		\$0.00	\$5.52
								0.00%	\$0.00		\$0.00	\$0.19
9								0.00%	\$0.00		\$0.88	\$6.76
10	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
11	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
12								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN	4L	PINT	\$6.186	1.600	38	16	42.11%	\$4.17		\$0.00	\$5.01
	MSMA	6.0#	PINT	\$1.934	2.666	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.16
13	CSTM AP FERT GRND (LIQUID)		ACRE	\$3.250	1.000			100.00%	\$3.25		\$0.00	\$3.25
	NITROGEN (ACTUAL N)		POUND	\$0.225	35.000			100.00%	\$7.88		\$0.00	\$7.88
14								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX	4L	PINT	\$2.927	1.500	38	16	42.11%	\$1.79		\$0.00	\$2.63
	MSMA	6.0#	PINT	\$1.934	2.666	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.16
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
17	COTTON INSECT SCOUTING		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
18	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

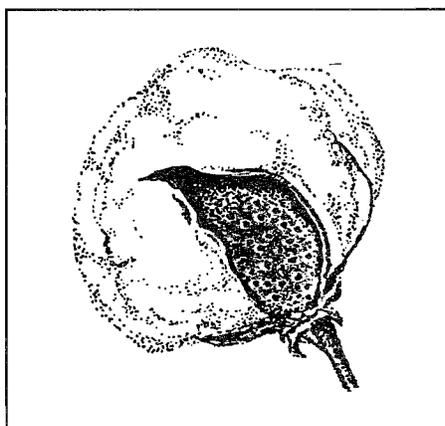
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 128

COTTON

LOAMY SOILS, SOLID PLANTED, FURROW
IRRIGATION, SOUTH OF I-40, EASTERN ARKANSAS



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ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$9.49	_____
FERTILIZER	\$56.12	_____
LIME + APPLICATION	\$10.01	_____
HERBICIDE	\$16.89	_____
FUNGICIDE	\$13.87	_____
INSECTICIDE	\$65.82	_____
DEFOLIANT	\$16.37	_____
AERIAL APPLICATION	\$44.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$31.32	_____
REPAIRS	\$54.24	_____
LABOR	\$27.06	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$11.46	_____
REPAIRS	\$2.46	_____
IRRIGATION LABOR	\$7.45	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$0.00	_____
CUSTOM DRY OR GINNING	\$80.00	_____
MISCELLANEOUS	\$16.69	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$21.41	_____
TOTAL SPECIFIED OPERATING COSTS	\$490.73	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	650.00	750.00	1000.00	1250.00	1350.00
	\$0.63	\$0.55	\$0.41	\$0.33	\$0.30

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$10.18	_____
INTEREST	\$8.40	_____
EQUIPMENT:		
DEPRECIATION	\$8.28	_____
INTEREST	\$4.91	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$40.12	_____
INTEREST	\$16.88	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$10.82	_____
INTEREST	\$9.52	_____
TAXES & INSURANCE	\$9.02	_____
INTEREST	\$0.99	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$119.12	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS

\$609.85

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	650.00	750.00	1000.00	1250.00	1350.00
	\$0.82	\$0.71	\$0.53	\$0.42	\$0.39

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9102
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DRY OR GINNING (COMMERCIAL)	\$64.00	\$80.00	\$96.00
DEPRECIATION	\$55.51	\$69.39	\$83.27
INSECTICIDE	\$52.65	\$65.82	\$78.98
REPAIRS	\$45.36	\$56.70	\$68.04
FERTILIZER	\$44.90	\$56.12	\$67.35
AERIAL APPLI. (CUSTOM HIRE)	\$35.20	\$44.00	\$52.80
OWNERSHIP INTEREST	\$32.56	\$40.70	\$48.84
HIRED LABOR	\$27.61	\$34.51	\$41.41
MACHINERY FUEL & OIL	\$25.05	\$31.32	\$37.58
INTEREST ON OP. CAP.	\$17.13	\$21.41	\$25.69
HERBICIDE	\$13.51	\$16.89	\$20.27
MISCELLANEOUS	\$13.35	\$16.69	\$20.03
DEFOLIANT	\$13.09	\$16.37	\$19.64
FUNGICIDE	\$11.10	\$13.87	\$16.64
IRRIGATION FUEL & OIL	\$9.17	\$11.46	\$13.75
LIME + APPLICATION	\$8.00	\$10.01	\$12.01
SEED	\$7.59	\$9.49	\$11.39
FARM TAXES	\$5.78	\$7.22	\$8.66
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM INSURANCE	\$1.44	\$1.80	\$2.17
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
HAUL (CUSTOM HIRE)			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$487.88	\$609.85	\$731.82

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

Breakeven prices reflect a cottonseed credit against ginning charges.

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	650.00	\$0.65	\$0.82	\$0.98
-25% OF BASE YIELD	750.00	\$0.57	\$0.71	\$0.85
BASE YIELD	1000.00	\$0.42	\$0.53	\$0.64
+25% OF BASE YIELD	1250.00	\$0.34	\$0.42	\$0.51
+35% OF BASE YIELD	1350.00	\$0.31	\$0.39	\$0.47

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9102
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS: \$423.88 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	650.00	750.00	1000.00	1250.00	1350.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$153.49)	(\$111.89)	(\$7.89)	\$96.10	\$137.70
	\$0.53	(\$80.69)	(\$27.89)	\$104.11	\$236.10	\$288.90
BASE PRICE =	\$0.64	(\$7.89)	\$56.11	\$216.11	\$376.10	\$440.10
	\$0.75	\$64.91	\$140.11	\$328.11	\$516.10	\$591.30
	\$0.86	\$137.71	\$224.11	\$440.11	\$656.10	\$742.50

BASE COSTS: \$529.85 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	650.00	750.00	1000.00	1250.00	1350.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$259.46)	(\$217.86)	(\$113.87)	(\$9.87)	\$31.73
	\$0.53	(\$186.66)	(\$133.86)	(\$1.87)	\$130.13	\$182.93
BASE PRICE =	\$0.64	(\$113.86)	(\$49.86)	\$110.13	\$270.13	\$334.13
	\$0.75	(\$41.06)	\$34.14	\$222.13	\$410.13	\$485.33
	\$0.86	\$31.74	\$118.14	\$334.13	\$550.13	\$636.53

+ 20% DEVIATION FROM BASE COSTS: \$635.82 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	650.00	750.00	1000.00	1250.00	1350.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$365.43)	(\$323.84)	(\$219.84)	(\$115.85)	(\$74.25)
	\$0.53	(\$292.63)	(\$239.84)	(\$107.84)	\$24.15	\$76.95
BASE PRICE =	\$0.64	(\$219.83)	(\$155.84)	\$4.16	\$164.15	\$228.15
	\$0.75	(\$147.03)	(\$71.84)	\$116.16	\$304.15	\$379.35
	\$0.86	(\$74.23)	\$12.16	\$228.16	\$444.15	\$530.55

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9102
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
							1	12	STALK CUTTER	15.0	140.0	7.727
2	3	SUBSOIL	15.0	200.0	4.364	1.00	\$2.54	\$3.53	\$2.81	\$2.32	\$0.53	\$11.73
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	3	LAND FLOAT	16.0	175.0	7.273	1.00	\$1.49	\$1.86	\$1.31	\$1.18	\$0.27	\$6.11
5	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
8	5	TRIPLE K	26.7	175.0	11.838	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.838	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
9	5	PLNTR (SPLIT BOX) 8 R@38"	25.3	175.0	8.981	1.00	\$2.22	\$1.50	\$2.40	\$1.24	\$0.28	\$7.64
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	8.981	1.00	\$0.17	\$0.00	\$0.41	\$0.23	\$0.05	\$0.86
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
10	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
11	6	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.05	\$0.07	\$0.03	\$0.01	\$0.00	\$0.16
13	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.05	\$0.07	\$0.03	\$0.01	\$0.00	\$0.16
14	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	HAND CHOP OR SPOT SPRAY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	7	INSECT SCOUTING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9102
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MATERIAL AND/OR MISCELLANEOUS

OPERATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMULATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPERATING COST (J)	OWNER-SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$1.26	\$13.00
3								0.00%	\$0.00		\$0.47	\$5.46
4								0.00%	\$0.00		\$0.76	\$6.87
5	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	50.000			100.00%	\$14.00		\$0.00	\$14.00
	PHOSPHATE (MATERIAL)	0-46-0	POUND	\$0.103	75.000			100.00%	\$7.73		\$0.00	\$7.73
	POTASH (MATERIAL)	0-0-60	POUND	\$0.083	120.000			100.00%	\$9.96		\$0.00	\$9.96
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.41	\$4.04
8								0.00%	\$0.00		\$0.59	\$5.65
	PROWL	4EC	PINT	\$3.221	1.250	38	18	47.37%	\$1.91		\$0.00	\$2.57
								0.00%	\$0.00		\$0.00	\$0.19
9	COTTON SEED		POUND	\$0.593	18.000			100.00%	\$9.49		\$1.18	\$18.31
	TEMIK	15G	POUND	\$2.781	3.000			100.00%	\$8.34		\$0.00	\$8.34
	TERRACHLOR SX	GRAN	POUND	\$1.387	10.000			100.00%	\$13.87		\$0.00	\$13.87
	COTORAN	4L	PINT	\$6.188	1.600	38	18	47.37%	\$4.69		\$0.00	\$5.55
								0.00%	\$0.00		\$0.00	\$0.19
10								0.00%	\$0.00		\$0.86	\$6.76
11	CSTM AP FERT GRND (LIQUID)		ACRE	\$3.250	1.000			100.00%	\$3.25		\$0.00	\$3.25
	NITROGEN (ACTUAL N)		POUND	\$0.225	50.000			100.00%	\$11.25		\$0.00	\$11.25
12								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN	4L	PINT	\$6.188	1.600	38	16	42.11%	\$4.17		\$0.00	\$5.01
	MSMA	6.0 #	PINT	\$1.934	2.666	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.16
13								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX	4L	PINT	\$2.827	1.500	38	16	42.11%	\$1.79		\$0.00	\$2.63
	MSMA	6.0 #	PINT	\$1.934	2.666	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.16
14	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
17	HAND CHOP OR SPOT SPRAY		ACRE	\$12.690	1.000			100.00%	\$12.69		\$0.00	\$12.69
18	COTTON INSECT SCOUTING		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
19	FURROW IRRIGATION		AC IN	\$2.374	3.000			100.00%	\$7.12	\$7.50	\$0.00	\$14.62
20	FURROW IRRIGATION		AC IN	\$2.374	3.000			100.00%	\$7.12	\$7.50	\$0.00	\$14.62
21	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00

SEQUENCE OF OPERATIONS

ENTERPRISE
 ENTERPRISE FILE NO.:
 LOCATION:
 SOILS TYPE:
 IRRIGATION METHOD:

COTTON, SOLID PLANTED, 1991
 COT9102
 EASTERN ARKANSAS, SOUTH OF I-40
 LOAMY
 FURROW

MACHINERY COST

OPERATING COST OWNERSHIP COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	OPERATING COST		OWNERSHIP COST				
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	7	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	8	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
27	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
28	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
29	9	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
30	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
31	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
32	9	COTTON PICKER, FIRST PICK	6.3	114.0	1.496	1.00	\$21.18	\$7.09	\$23.94	\$10.13	\$2.30	\$64.63	
9		COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
9		COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
33	10	COTTON PICKER, SCRAPPING	6.3	114.0	2.302	1.00	\$13.76	\$4.61	\$15.56	\$6.58	\$1.50	\$42.01	
10		COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
10		COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
34	11	GINNING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
35	11	LIME + APP. (5 YR AVE.)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0			0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0			0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0			0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
SPECIFIED INTEREST													
TOTAL SPECIFIED COSTS							\$54.24	\$31.32	\$58.58	\$30.19	\$6.86	\$181.19	

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9102
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
22	CSTM AP AIR 5 GAL BIDRIN	8EC	ACRE PINT	\$3.500 \$9.474	1.000 0.200			100.00% 100.00%	\$3.50 \$1.89		\$0.00 \$0.00	\$3.50 \$1.89
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
23	FURROW IRRIGATION		AC IN	\$2.374	3.000			100.00%	\$7.12	\$7.50	\$0.00	\$14.62
24	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
25	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
26	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
27	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
28	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	CURACRON	8EC	PINT	\$10.698	1.000			100.00%	\$10.70		\$0.00	\$10.70
	LARVIN	3.2#	PINT	\$6.101	0.628			100.00%	\$3.82		\$0.00	\$3.82
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
29	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
30	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PREP	6#/GAL	PINT	\$7.022	1.000			100.00%	\$7.02		\$0.00	\$7.02
	DEF/FOLEX	6EC	PINT	\$3.738	1.000			100.00%	\$3.74		\$0.00	\$3.74
31	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	DEF/FOLEX	6EC	PINT	\$3.738	1.500			100.00%	\$5.61		\$0.00	\$5.61
32								0.00%	\$0.00		\$11.07	\$75.70
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
33								0.00%	\$0.00		\$7.19	\$49.21
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
34	GINNING (LINT BASIS)		POUND	\$0.080	1000.000			100.00%	\$80.00		\$0.00	\$80.00
35	LIME + APP. (5 YR AVE.)		ACRE	\$10.005	1.000			100.00%	\$10.01		\$0.00	\$10.01
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
											\$22.41	
									\$358.70	\$22.50	\$27.06	\$609.85

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 129

COTTON

LOAMY SOILS, SOLID PLANTED, CENTER
PIVOT IRRIGATION, NON-TOWABLE, 130 ACRES,
SOUTH OF I-40, EASTERN ARKANSAS



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

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Bringle Jennings	Donald R. Johnson
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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$9.49	_____
FERTILIZER	\$56.12	_____
LIME + APPLICATION	\$10.01	_____
HERBICIDE	\$16.69	_____
FUNGICIDE	\$13.87	_____
INSECTICIDE	\$65.82	_____
DEFOLIANT	\$16.37	_____
AERIAL APPLICATION	\$44.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$29.46	_____
REPAIRS	\$52.75	_____
LABOR	\$26.30	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$12.28	_____
REPAIRS	\$5.81	_____
IRRIGATION LABOR	\$1.15	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$0.00	_____
CUSTOM DRY OR GINNING	\$80.00	_____
MISCELLANEOUS	\$16.69	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$21.06	_____
TOTAL SPECIFIED OPERATING COSTS	\$483.95	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	650.00	750.00	1000.00	1250.00	1350.00
	\$0.62	\$0.54	\$0.40	\$0.32	\$0.30

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$9.05	_____
INTEREST	\$7.47	_____
EQUIPMENT:		
DEPRECIATION	\$8.09	_____
INTEREST	\$4.66	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$40.12	_____
INTEREST	\$16.88	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$26.49	_____
INTEREST	\$22.58	_____
TAXES & INSURANCE	\$11.73	_____
INTEREST	\$1.29	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$148.36	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$632.30	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	650.00	750.00	1000.00	1250.00	1350.00
	\$0.85	\$0.74	\$0.55	\$0.44	\$0.41

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9103
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$67.00	\$83.75	\$100.50
DRY OR GINNING (COMMERCIAL)	\$64.00	\$80.00	\$96.00
INSECTICIDE	\$52.65	\$65.82	\$78.98
REPAIRS	\$46.84	\$58.56	\$70.27
FERTILIZER	\$44.90	\$56.12	\$67.35
OWNERSHIP INTEREST	\$42.30	\$52.88	\$63.46
AERIAL APPLI. (CUSTOM HIRE)	\$35.20	\$44.00	\$52.80
MACHINERY FUEL & OIL	\$23.57	\$29.46	\$35.36
HIRED LABOR	\$21.96	\$27.45	\$32.94
INTEREST ON OP. CAP.	\$16.85	\$21.06	\$25.27
HERBICIDE	\$13.35	\$16.69	\$20.03
MISCELLANEOUS	\$13.35	\$16.69	\$20.03
DEFOLIANT	\$13.09	\$16.37	\$19.64
FUNGICIDE	\$11.10	\$13.87	\$16.64
IRRIGATION FUEL & OIL	\$9.83	\$12.28	\$14.74
LIME + APPLICATION	\$8.00	\$10.01	\$12.01
SEED	\$7.59	\$9.49	\$11.39
FARM TAXES	\$7.50	\$9.38	\$11.26
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM INSURANCE	\$1.88	\$2.35	\$2.81
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
HAUL (CUSTOM HIRE)			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$505.84	\$632.30	\$758.76

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

Breakeven prices reflect a cottonseed credit against ginning charges.

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	650.00	\$0.68	\$0.85	\$1.02
-25% OF BASE YIELD	750.00	\$0.59	\$0.74	\$0.88
BASE YIELD	1000.00	\$0.44	\$0.55	\$0.66
+25% OF BASE YIELD	1250.00	\$0.35	\$0.44	\$0.53
+35% OF BASE YIELD	1350.00	\$0.33	\$0.41	\$0.49

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9103
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS: \$441.84 PER ACRE

YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	YIELD IN POUNDS					
	650.00	750.00	1000.00	1250.00	1350.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$171.45)	(\$129.85)	(\$25.86)	\$78.14	\$119.74
	\$0.53	(\$98.65)	(\$45.85)	\$86.14	\$218.14	\$270.94
BASE PRICE =	\$0.64	(\$25.85)	\$38.15	\$198.14	\$358.14	\$422.14
	\$0.75	\$46.95	\$122.15	\$310.14	\$498.14	\$573.34
	\$0.86	\$119.75	\$206.15	\$422.14	\$638.14	\$724.54

BASE COSTS: \$552.30 PER ACRE

YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	YIELD IN POUNDS					
	650.00	750.00	1000.00	1250.00	1350.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$281.92)	(\$240.32)	(\$136.32)	(\$32.33)	\$9.27
	\$0.53	(\$209.12)	(\$156.32)	(\$24.32)	\$107.67	\$160.47
BASE PRICE =	\$0.64	(\$136.32)	(\$72.32)	\$87.68	\$247.67	\$311.67
	\$0.75	(\$63.52)	\$11.68	\$199.68	\$387.67	\$462.87
	\$0.86	\$9.28	\$95.68	\$311.68	\$527.67	\$614.07

+ 20% DEVIATION FROM BASE COSTS: \$662.76 PER ACRE

YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	YIELD IN POUNDS					
	650.00	750.00	1000.00	1250.00	1350.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$392.38)	(\$350.78)	(\$246.79)	(\$142.79)	(\$101.20)
	\$0.53	(\$319.58)	(\$266.78)	(\$134.79)	(\$2.79)	\$50.00
BASE PRICE =	\$0.64	(\$246.78)	(\$182.78)	(\$22.79)	\$137.21	\$201.20
	\$0.75	(\$173.98)	(\$98.78)	\$89.21	\$277.21	\$352.40
	\$0.86	(\$101.18)	(\$14.78)	\$201.21	\$417.21	\$503.60

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9103
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	SUBSOIL	15.0	200.0	4.364	1.00	\$2.54	\$3.53	\$2.81	\$2.32	\$0.53	\$11.73
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
6	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	5	TRIPLE K	26.7	175.0	11.638	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.638	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
8	5	PLNTR (SPLIT BOX) 8 R@38"	25.3	175.0	8.981	1.00	\$2.22	\$1.50	\$2.40	\$1.24	\$0.28	\$7.64
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	8.981	1.00	\$0.17	\$0.00	\$0.41	\$0.23	\$0.05	\$0.86
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
9	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
10	6	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.05	\$0.07	\$0.03	\$0.01	\$0.00	\$0.16
12	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.05	\$0.07	\$0.03	\$0.01	\$0.00	\$0.16
13	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	7	HAND CHOP OR SPOT SPRAY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	INSECT SCOUTING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	7	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9103
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

MATERIAL AND/OR MISCELLANEOUS

OPERATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMULATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPERATING COST (J)	OWNER-SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$1.26	\$13.00
3								0.00%	\$0.00		\$0.47	\$5.46
4	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	50.000			100.00%	\$14.00		\$0.00	\$14.00
	PHOSPHATE (MATERIAL)	0-46-0	POUND	\$0.103	75.000			100.00%	\$7.73		\$0.00	\$7.73
	POTASH (MATERIAL)	0-0-60	POUND	\$0.083	120.000			100.00%	\$9.96		\$0.00	\$9.96
5								0.00%	\$0.00		\$0.41	\$4.04
6								0.00%	\$0.00		\$0.41	\$4.04
7	PROWL	4EC	PINT	\$3.221	1.250	38	18	47.37%	\$1.91		\$0.00	\$2.57
								0.00%	\$0.00		\$0.00	\$0.19
8	COTTON SEED		POUND	\$0.593	16.000			100.00%	\$9.49		\$1.18	\$18.31
	TEMIK	15G	POUND	\$2.781	3.000			100.00%	\$8.34		\$0.00	\$8.34
	TERRACHLOR SX	GRAN	POUND	\$1.387	10.000			100.00%	\$13.87		\$0.00	\$13.87
	COTORAN	4L	PINT	\$6.186	1.600	38	18	47.37%	\$4.69		\$0.00	\$5.55
								0.00%	\$0.00		\$0.00	\$0.19
9								0.00%	\$0.00		\$0.86	\$6.76
10	CSTM AP FERT GRND (LIQUID)		ACRE	\$3.250	1.000			100.00%	\$3.25		\$0.00	\$3.25
	NITROGEN (ACTUAL N)		POUND	\$0.225	50.000			100.00%	\$11.25		\$0.00	\$11.25
11								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN	4L	PINT	\$6.186	1.600	38	16	42.11%	\$4.17		\$0.00	\$5.01
	MSMA	6.0 #	PINT	\$1.934	2.666	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.16
12	BLADEX	4L	PINT	\$2.827	1.500	38	16	42.11%	\$1.79		\$0.00	\$2.63
	MSMA	6.6#	PINT	\$1.934	2.424	38	16	42.11%	\$1.97		\$0.00	\$1.97
								0.00%	\$0.00		\$0.00	\$0.16
13	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
14	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	HAND CHOP OR SPOT SPRAY		ACRE	\$12.690	1.000			100.00%	\$12.69		\$0.00	\$12.69
17	COTTON INSECT SCOUTING		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
18	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
19	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
20	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9103
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	OPERATING COST		OWNERSHIP COST				
							REPAIRS & FUEL, OIL MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	8	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	8	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
27	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
28	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
29	9	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
30	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
31	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
32	9	COTTON PICKER, FIRST PICK	6.3	114.0	1.496	1.00	\$21.18	\$7.09	\$23.94	\$10.13	\$2.30	\$64.63	
	9	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
	9	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
33	10	COTTON PICKER, SCRAPPING	6.3	114.0	2.302	1.00	\$13.76	\$4.61	\$15.56	\$6.58	\$1.50	\$42.01	
	10	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
	10	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
34	11	GINNING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
35	11	LIME + APP. (5 YR AVE.)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
SPECIFIED INTEREST													
TOTAL SPECIFIED COSTS								\$52.75	\$29.46	\$57.26	\$29.01	\$6.59	\$175.08

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9103
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
21	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
22	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
23	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
24	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
25	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
26	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
27	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
28	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	CURACRON	8EC	PINT	\$10.698	1.000			100.00%	\$10.70		\$0.00	\$10.70
	LARVIN	3.2#	PINT	\$6.101	0.626			100.00%	\$3.82		\$0.00	\$3.82
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
29	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
30	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PREP	6#/GAL	PINT	\$7.022	1.000			100.00%	\$7.02		\$0.00	\$7.02
	DEF/FOLEX	6EC	PINT	\$3.738	1.000			100.00%	\$3.74		\$0.00	\$3.74
31	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	DEF/FOLEX	6EC	PINT	\$3.738	1.500			100.00%	\$5.61		\$0.00	\$5.61
32								0.00%	\$0.00		\$11.07	\$75.70
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
33								0.00%	\$0.00		\$7.19	\$49.21
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
34	GINNING (LINT BASIS)		POUND	\$0.080	1000.000			100.00%	\$80.00		\$0.00	\$80.00
35	LIME + APP. (5 YR AVE.)		ACRE	\$10.005	1.000			100.00%	\$10.01		\$0.00	\$10.01
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
												\$22.35
									\$354.38	\$54.20	\$26.30	\$632.30

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 130

COTTON

LOAMY SOILS, SOLID PLANTED,
NORTH OF I-40, EASTERN ARKANSAS



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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$8.30	_____
FERTILIZER	\$38.55	_____
LIME + APPLICATION	\$6.92	_____
HERBICIDE	\$16.89	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$34.89	_____
DEFOLIANT	\$5.61	_____
AERIAL APPLICATION	\$35.25	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$25.08	_____
REPAIRS	\$44.32	_____
LABOR	\$22.18	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$2.83	_____
CUSTOM HAUL	\$0.00	_____
CUSTOM DRY OR GINNING	\$42.00	_____
MISCELLANEOUS	\$4.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$13.47	_____
TOTAL SPECIFIED OPERATING COSTS	\$300.29	_____

PER UNIT BRAKEEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	341.25	393.75	525.00	656.25	708.75
	\$0.76	\$0.86	\$0.49	\$0.39	\$0.36

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$8.13	_____
INTEREST	\$6.71	_____
EQUIPMENT:		
DEPRECIATION	\$7.26	_____
INTEREST	\$4.10	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$32.22	_____
INTEREST	\$13.56	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$5.54	_____
INTEREST	\$0.61	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$78.11	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$378.40	_____
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PER UNIT BRAKEEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	341.25	393.75	525.00	656.25	708.75
	\$0.99	\$0.85	\$0.64	\$0.51	\$0.47

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAK-EVEN PRICES.

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9104
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$38.08	\$47.61	\$57.13
REPAIRS	\$35.46	\$44.32	\$53.19
DRY OR GINNING (COMMERCIAL)	\$33.60	\$42.00	\$50.40
FERTILIZER	\$30.84	\$38.55	\$46.26
AERIAL APPLI. (CUSTOM HIRE)	\$28.20	\$35.25	\$42.30
INSECTICIDE	\$27.91	\$34.89	\$41.87
MACHINERY FUEL & OIL	\$20.06	\$25.08	\$30.10
OWNERSHIP INTEREST	\$19.98	\$24.97	\$29.97
HIRED LABOR	\$17.74	\$22.18	\$26.61
HERBICIDE	\$13.51	\$16.89	\$20.27
INTEREST ON OP. CAP.	\$10.77	\$13.47	\$16.16
SEED	\$6.64	\$8.30	\$9.96
LIME + APPLICATION	\$5.54	\$6.92	\$8.31
DEFOLIANT	\$4.49	\$5.61	\$6.73
FARM TAXES	\$3.54	\$4.43	\$5.32
MISCELLANEOUS	\$3.20	\$4.00	\$4.80
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FARM INSURANCE	\$0.89	\$1.11	\$1.33
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
HAUL (CUSTOM HIRE)			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			

TOTAL SPECIFIED COST/ACRE	\$302.72	\$378.40	\$454.08
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PER UNIT BREAK-EVEN PRICE—TOTAL SPECIFIED COSTS

Breakeven prices reflect a cottonseed credit against ginning charges.

	YIELD	BREAK-EVEN PRICE		
-35% OF BASE YIELD	341.25	\$0.79	\$0.99	\$1.18
-25% OF BASE YIELD	393.75	\$0.68	\$0.85	\$1.03
BASE YIELD	525.00	\$0.51	\$0.64	\$0.77
+25% OF BASE YIELD	656.25	\$0.41	\$0.51	\$0.62
+35% OF BASE YIELD	708.75	\$0.38	\$0.47	\$0.57

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9104
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS: \$269.12 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	341.25	393.75	525.00	656.25	708.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$127.17)	(\$105.33)	(\$50.73)	\$3.87	\$25.71
	\$0.53	(\$88.95)	(\$61.23)	\$8.07	\$77.37	\$105.09
BASE PRICE =	\$0.64	(\$50.73)	(\$17.13)	\$66.87	\$150.87	\$184.47
	\$0.75	(\$12.51)	\$26.97	\$125.67	\$224.37	\$263.85
	\$0.86	\$25.71	\$71.07	\$184.47	\$297.87	\$343.23

BASE COSTS: \$336.40 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	341.25	393.75	525.00	656.25	708.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$194.45)	(\$172.61)	(\$118.01)	(\$63.42)	(\$41.58)
	\$0.53	(\$156.23)	(\$128.51)	(\$59.21)	\$10.08	\$37.80
BASE PRICE =	\$0.64	(\$118.01)	(\$84.41)	(\$0.41)	\$83.58	\$117.18
	\$0.75	(\$79.79)	(\$40.31)	\$58.39	\$157.08	\$196.56
	\$0.86	(\$41.57)	\$3.79	\$117.19	\$230.58	\$275.94

+ 20% DEVIATION FROM BASE COSTS: \$403.68 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	341.25	393.75	525.00	656.25	708.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$261.73)	(\$239.89)	(\$185.30)	(\$130.70)	(\$108.86)
	\$0.53	(\$223.51)	(\$195.79)	(\$126.50)	(\$57.20)	(\$29.48)
BASE PRICE =	\$0.64	(\$185.29)	(\$151.69)	(\$67.70)	\$16.30	\$49.90
	\$0.75	(\$147.07)	(\$107.59)	(\$8.90)	\$89.80	\$129.28
	\$0.86	(\$108.85)	(\$63.49)	\$49.90	\$163.30	\$208.66

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9104
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

							MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	REPAIRS & MAINTENANCE	FUEL, OIL & LUB	DEPRECIATION	INTEREST	TAXES & INSURANCE	TOTAL COST
							(H)	(I)	(J)	(K)	(L)	(M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	CHISEL PLOW	21.0	175.0	7.127	1.00	\$1.84	\$1.89	\$1.48	\$1.19	\$0.27	\$6.48
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	4	DISK BEDDER 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
6	4	DISK BEDDER 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	5	TRIPLE K	26.7	175.0	11.638	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.638	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
8	5	PLANTER 8 ROW @ 38"	25.3	175.0	9.257	1.00	\$1.94	\$1.46	\$2.06	\$1.12	\$0.25	\$6.82
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	9.257	1.00	\$0.18	\$0.00	\$0.40	\$0.22	\$0.05	\$0.83
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
9	5	ROW CULTIVATOR 8 ROW @ 38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
10	5	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	6	ROW CULTIVATOR 8 ROW @ 38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
13	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	6	ROW CULTIVATOR 8 ROW @ 38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9104
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$0.77	\$7.25
3								0.00%	\$0.00		\$0.47	\$5.46
4	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	60.000			100.00%	\$16.80		\$0.00	\$16.80
	PHOSPHATE (MATERIAL)	0-46-0	POUND	\$0.103	50.000			100.00%	\$5.15		\$0.00	\$5.15
	POTASH (MATERIAL)	0-0-60	POUND	\$0.083	80.000			100.00%	\$6.64		\$0.00	\$6.64
5								0.00%	\$0.00		\$0.41	\$4.04
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.59	\$5.65
	PROWL	4EC	PINT	\$3.221	1.250	38	18	47.37%	\$1.91		\$0.00	\$2.57
								0.00%	\$0.00		\$0.00	\$0.19
8	COTTON SEED		POUND	\$0.593	14.000			100.00%	\$8.30		\$1.14	\$16.27
	COTORAN	4L	PINT	\$8.186	1.600	38	18	47.37%	\$4.89		\$0.00	\$5.52
								0.00%	\$0.00		\$0.00	\$0.19
9								0.00%	\$0.00		\$0.86	\$6.76
10	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
11	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
12								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN	4L	PINT	\$8.186	1.600	38	18	42.11%	\$4.17		\$0.00	\$5.01
	MSMA	6.0 #	PINT	\$1.934	2.666	38	18	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.19
13	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
14								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX	4L	PINT	\$2.827	1.500	38	18	42.11%	\$1.79		\$0.00	\$2.63
	MSMA	6.0 #	PINT	\$1.934	2.666	38	18	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.19
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.67EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.67EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
17	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

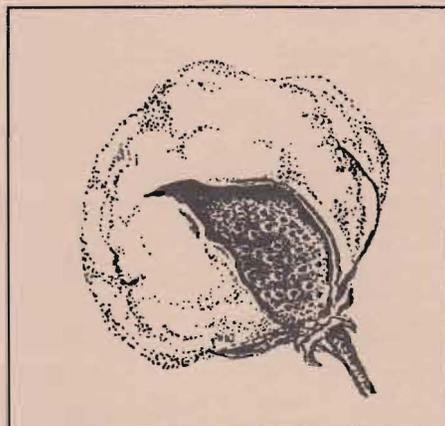
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 131

COTTON

CLAY SOILS, SOLID PLANTED,
NORTH OF I-40, EASTERN ARKANSAS



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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$11.86	_____
FERTILIZER	\$30.96	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$22.72	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$34.89	_____
DEFOLIANT	\$5.61	_____
AERIAL APPLICATION	\$35.25	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$24.77	_____
REPAIRS	\$44.24	_____
LABOR	\$22.08	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$2.83	_____
CUSTOM HAUL	\$0.00	_____
CUSTOM DRY OR GINNING	\$40.00	_____
MISCELLANEOUS	\$4.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$13.16	_____
TOTAL SPECIFIED OPERATING COSTS	\$292.37	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	325.00	375.00	500.00	625.00	675.00
	\$0.78	\$0.67	\$0.50	\$0.40	\$0.37

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$7.99	_____
INTEREST	\$6.59	_____
EQUIPMENT:		
DEPRECIATION	\$7.72	_____
INTEREST	\$4.34	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$32.19	_____
INTEREST	\$13.55	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$5.56	_____
INTEREST	\$0.61	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$78.56	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$370.92	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN POUNDS
(Breakeven prices reflect a cottonseed credit against ginning charges.)

	325.00	375.00	500.00	625.00	675.00
	\$1.02	\$0.88	\$0.66	\$0.53	\$0.49

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9105
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$38.32	\$47.90	\$57.48
REPAIRS	\$35.39	\$44.24	\$53.09
DRY OR GINNING (COMMERCIAL)	\$32.00	\$40.00	\$48.00
AERIAL APPLI. (CUSTOM HIRE)	\$28.20	\$35.25	\$42.30
INSECTICIDE	\$27.91	\$34.89	\$41.87
FERTILIZER	\$24.76	\$30.96	\$37.15
OWNERSHIP INTEREST	\$20.08	\$25.09	\$30.11
MACHINERY FUEL & OIL	\$19.81	\$24.77	\$29.72
HERBICIDE	\$18.18	\$22.72	\$27.27
HIRED LABOR	\$17.67	\$22.08	\$26.50
INTEREST ON OP. CAP.	\$10.53	\$13.16	\$15.79
SEED	\$9.49	\$11.86	\$14.23
DEFOLIANT	\$4.49	\$5.61	\$6.73
FARM TAXES	\$3.56	\$4.45	\$5.34
MISCELLANEOUS	\$3.20	\$4.00	\$4.80
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FARM INSURANCE	\$0.89	\$1.11	\$1.34
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
HAUL (CUSTOM HIRE)			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$296.74	\$370.92	\$445.11

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS*Breakeven prices reflect a cottonseed credit against ginning charges.*

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	325.00	\$0.81	\$1.02	\$1.22
-25% OF BASE YIELD	375.00	\$0.71	\$0.88	\$1.06
BASE YIELD	500.00	\$0.53	\$0.66	\$0.79
+25% OF BASE YIELD	625.00	\$0.42	\$0.53	\$0.64
+35% OF BASE YIELD	675.00	\$0.39	\$0.49	\$0.59

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9105
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS: \$264.74 PER ACRE
 YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	325.00	375.00	500.00	625.00	675.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
RETURNS PER ACRE						
	\$0.42	(\$129.54)	(\$108.75)	(\$56.75)	(\$4.75)	\$16.05
	\$0.53	(\$93.14)	(\$66.75)	(\$0.75)	\$65.25	\$91.65
BASE PRICE =	\$0.64	(\$56.74)	(\$24.75)	\$55.25	\$135.25	\$167.25
	\$0.75	(\$20.34)	\$17.25	\$111.25	\$205.25	\$242.85
	\$0.86	\$16.06	\$59.25	\$167.25	\$275.25	\$318.45

BASE COSTS: \$330.92 PER ACRE
 YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	325.00	375.00	500.00	625.00	675.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
RETURNS PER ACRE						
	\$0.42	(\$195.73)	(\$174.93)	(\$122.93)	(\$70.94)	(\$50.14)
	\$0.53	(\$159.33)	(\$132.93)	(\$66.93)	(\$0.94)	\$25.46
BASE PRICE =	\$0.64	(\$122.93)	(\$90.93)	(\$10.93)	\$69.06	\$101.06
	\$0.75	(\$86.53)	(\$48.93)	\$45.07	\$139.06	\$176.66
	\$0.86	(\$50.13)	(\$6.93)	\$101.07	\$209.06	\$252.26

+ 20% DEVIATION FROM BASE COSTS: \$397.11 PER ACRE
 YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	325.00	375.00	500.00	625.00	675.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
RETURNS PER ACRE						
	\$0.42	(\$261.92)	(\$241.12)	(\$189.12)	(\$137.12)	(\$116.32)
	\$0.53	(\$225.52)	(\$199.12)	(\$133.12)	(\$67.12)	(\$40.72)
BASE PRICE =	\$0.64	(\$189.12)	(\$157.12)	(\$77.12)	\$2.88	\$34.88
	\$0.75	(\$152.72)	(\$115.12)	(\$21.12)	\$72.88	\$110.48
	\$0.86	(\$116.32)	(\$73.12)	\$34.88	\$142.88	\$186.08

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9105
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	DISK, HC 9.0" SPACING	18.6	175.0	8.116	1.00	\$1.62	\$1.66	\$1.81	\$1.32	\$0.30	\$6.70
3	4	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	4	DISK BEDDER 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
6	4	DISK BEDDER 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	5	TRIPLE K	26.7	175.0	11.638	1.00	\$1.30	\$1.18	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.638	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
8	5	PLANTER 8 ROW @ 38"	25.3	175.0	9.257	1.00	\$1.94	\$1.48	\$2.06	\$1.12	\$0.25	\$6.82
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	9.257	1.00	\$0.16	\$0.00	\$0.40	\$0.22	\$0.05	\$0.83
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.12
9	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	8.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
10	5	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.12
13	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.12
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9105
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$0.68	\$7.38
3								0.00%	\$0.00		\$0.47	\$5.46
4	CSTM AP FERT GRIND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	75.000			100.00%	\$21.00		\$0.00	\$21.00
5								0.00%	\$0.00		\$0.41	\$4.04
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.59	\$5.65
	PFWL	4EC	PINT	\$3.221	2.000	38	18	47.37%	\$3.05		\$0.00	\$2.71
								0.00%	\$0.00		\$0.00	\$0.19
8	COTTON SEED		POUND	\$0.593	20.000			100.00%	\$11.86		\$1.14	\$19.83
	COTORAN	4L	PINT	\$6.186	3.200	38	18	47.37%	\$9.38		\$0.00	\$10.21
								0.00%	\$0.00		\$0.00	\$0.12
9								0.00%	\$0.00		\$0.86	\$6.76
10	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
11	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
12								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN	4L	PINT	\$6.186	1.600	38	16	42.11%	\$4.17		\$0.00	\$5.01
	MSMA	6.0 #	PINT	\$1.934	2.666	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.12
13	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
14								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX	4L	PINT	\$2.827	1.500	38	16	42.11%	\$1.79		\$0.00	\$2.63
	MSMA	6.0 #	PINT	\$1.934	2.666	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.12
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.67EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.67EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
17	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

ECONOMIC SUMMARY	ETB	DESCRIPTION
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 132

COTTON

LOAMY SOILS, SOLID PLANTED, FURROW
IRRIGATION, NORTH OF I-40, EASTERN ARKANSAS



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United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$9.49	_____
FERTILIZER	\$44.78	_____
LIME + APPLICATION	\$6.92	_____
HERBICIDE	\$16.89	_____
FUNGICIDE	\$13.87	_____
INSECTICIDE	\$44.14	_____
DEFOLIANT	\$16.37	_____
AERIAL APPLICATION	\$37.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$31.29	_____
REPAIRS	\$54.22	_____
LABOR	\$27.06	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$11.46	_____
REPAIRS	\$2.46	_____
IRRIGATION LABOR	\$7.45	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$0.00	_____
CUSTOM DRY OR GINNING	\$75.00	_____
MISCELLANEOUS	\$16.69	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$19.04	_____
TOTAL SPECIFIED OPERATING COSTS	\$441.21	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

	YIELD IN POUNDS				
	617.50	712.50	950.00	1187.50	1282.50
<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>					
	\$0.59	\$0.51	\$0.38	\$0.31	\$0.28

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$10.18	_____
INTEREST	\$8.40	_____
EQUIPMENT:		
DEPRECIATION	\$8.27	_____
INTEREST	\$4.91	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$40.11	_____
INTEREST	\$16.88	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$10.82	_____
INTEREST	\$9.52	_____
TAXES & INSURANCE	\$9.02	_____
INTEREST	\$0.99	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$119.10	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$560.31	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

	YIELD IN POUNDS				
	617.50	712.50	950.00	1187.50	1282.50
<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>					
	\$0.78	\$0.68	\$0.51	\$0.41	\$0.38

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9106
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DRY OR GINNING (COMMERCIAL)	\$60.80	\$76.00	\$91.20
DEPRECIATION	\$55.50	\$69.38	\$83.26
REPAIRS	\$45.34	\$56.68	\$68.01
FERTILIZER	\$35.83	\$44.78	\$53.74
INSECTICIDE	\$35.31	\$44.14	\$52.97
OWNERSHIP INTEREST	\$32.56	\$40.70	\$48.84
AERIAL APPLI. (CUSTOM HIRE)	\$29.60	\$37.00	\$44.40
HIRED LABOR	\$27.61	\$34.51	\$41.41
MACHINERY FUEL & OIL	\$25.03	\$31.29	\$37.55
INTEREST ON OP. CAP.	\$15.23	\$19.04	\$22.85
HERBICIDE	\$13.51	\$16.89	\$20.27
MISCELLANEOUS	\$13.35	\$16.69	\$20.03
DEFOLIANT	\$13.09	\$16.37	\$19.64
FUNGICIDE	\$11.10	\$13.87	\$16.64
IRRIGATION FUEL & OIL	\$9.17	\$11.46	\$13.75
SEED	\$7.59	\$9.49	\$11.39
FARM TAXES	\$5.78	\$7.22	\$8.66
LIME + APPLICATION	\$5.54	\$6.92	\$8.31
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM INSURANCE	\$1.44	\$1.80	\$2.17
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
HAUL (CUSTOM HIRE)			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$448.25	\$560.31	\$672.38

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

Breakeven prices reflect a cottonseed credit against ginning charges.

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	617.50	\$0.63	\$0.78	\$0.94
-25% OF BASE YIELD	712.50	\$0.54	\$0.68	\$0.82
BASE YIELD	950.00	\$0.41	\$0.51	\$0.61
+25% OF BASE YIELD	1187.50	\$0.33	\$0.41	\$0.49
+35% OF BASE YIELD	1282.50	\$0.30	\$0.38	\$0.45

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9106
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS: \$387.45 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$130.58)	(\$91.06)	\$7.73	\$106.53	\$146.05
	\$0.53	(\$61.42)	(\$11.26)	\$114.13	\$239.53	\$289.69
BASE PRICE =	\$0.64	\$7.74	\$68.54	\$220.53	\$372.53	\$433.33
	\$0.75	\$76.90	\$148.34	\$326.93	\$505.53	\$576.97
	\$0.86	\$146.06	\$228.14	\$433.33	\$638.53	\$720.61

BASE COSTS: \$484.31 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$227.45)	(\$187.93)	(\$89.13)	\$9.66	\$49.18
	\$0.53	(\$158.29)	(\$108.13)	\$17.27	\$142.66	\$192.82
BASE PRICE =	\$0.64	(\$89.13)	(\$28.33)	\$123.67	\$275.66	\$336.46
	\$0.75	(\$19.97)	\$51.47	\$230.07	\$408.66	\$480.10
	\$0.86	\$49.19	\$131.27	\$336.47	\$541.66	\$623.74

+ 20% DEVIATION FROM BASE COSTS: \$581.18 PER ACRE
YIELD IN POUNDS

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.42	(\$324.31)	(\$284.79)	(\$186.00)	(\$87.20)	(\$47.69)
	\$0.53	(\$255.15)	(\$204.99)	(\$79.60)	\$45.80	\$95.95
BASE PRICE =	\$0.64	(\$185.99)	(\$125.19)	\$26.80	\$178.80	\$239.59
	\$0.75	(\$116.83)	(\$45.39)	\$133.20	\$311.80	\$383.23
	\$0.86	(\$47.67)	\$34.41	\$239.60	\$444.80	\$526.87

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9106
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRECIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	SUBSOIL	15.0	200.0	4.384	1.00	\$2.54	\$3.53	\$2.81	\$2.32	\$0.53	\$11.73
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	3	LAND FLOAT	16.0	175.0	7.273	1.00	\$1.49	\$1.86	\$1.31	\$1.18	\$0.27	\$6.11
5	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
8	5	TRIPLE K	26.7	175.0	11.638	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
5		SPRAYER, SADDLE MTD BC	26.7	0.0	11.638	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
5		PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
9	5	PLNTR (SPLIT BOX) 8 R@38"	25.3	175.0	8.981	1.00	\$2.22	\$1.50	\$2.40	\$1.24	\$0.28	\$7.64
5			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5		SPRAYER, SADDLE MTD BC	25.3	0.0	8.981	1.00	\$0.17	\$0.00	\$0.41	\$0.23	\$0.05	\$0.86
5		PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
10	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
11	6	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
6		DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6		PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.12
13	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
6		DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6		PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.12
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	7	INSECT SCOUTING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	HAND CHOP OR SPOT SPRAY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	7	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9106
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$8.37
2								0.00%	\$0.00		\$1.28	\$13.00
3								0.00%	\$0.00		\$0.47	\$5.46
4								0.00%	\$0.00		\$0.76	\$6.87
5	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	45.000			100.00%	\$12.60		\$0.00	\$12.60
	PHOSPHATE (MATERIAL)	0-46-0	POUND	\$0.103	50.000			100.00%	\$5.15		\$0.00	\$5.15
	POTASH (MATERIAL)	0-0-60	POUND	\$0.083	80.000			100.00%	\$6.64		\$0.00	\$6.64
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.41	\$4.04
8								0.00%	\$0.00		\$0.59	\$5.65
	PROWL	4EC	PINT	\$3.221	1.250	38	18	47.37%	\$1.91		\$0.00	\$2.57
								0.00%	\$0.00		\$0.00	\$0.19
9	COTTON SEED		POUND	\$0.593	16.000			100.00%	\$9.49		\$1.18	\$18.31
	TEMIK	15G	POUND	\$2.781	3.000			100.00%	\$8.34		\$0.00	\$8.34
	TERRACHLOR SX	GRAN	POUND	\$1.387	10.000			100.00%	\$13.87		\$0.00	\$13.87
	COTORAN	4L	PINT	\$8.186	1.800	38	18	47.37%	\$4.69		\$0.00	\$5.55
								0.00%	\$0.00		\$0.00	\$0.19
10								0.00%	\$0.00		\$0.88	\$6.76
11	CSTM AP FERT GRND (LIQUID)		ACRE	\$3.250	1.000			100.00%	\$3.25		\$0.00	\$3.25
	NITROGEN (ACTUAL N)		POUND	\$0.225	45.000			100.00%	\$10.13		\$0.00	\$10.13
12								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN	4L	PINT	\$8.186	1.800	38	18	42.11%	\$4.17		\$0.00	\$5.01
	MSMA	6.0 #	PINT	\$1.934	2.666	38	18	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.12
13	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
14								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX	4L	PINT	\$2.827	1.500	38	18	42.11%	\$1.79		\$0.00	\$2.83
	MSMA	6.0 #	PINT	\$1.934	2.666	38	18	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.12
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.67EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	COTTON INSECT SCOUTING		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
17	HAND CHOP OR SPOT SPRAY		ACRE	\$12.690	1.000			100.00%	\$12.69		\$0.00	\$12.69
18	FURROW IRRIGATION		AC IN	\$2.374	3.000			100.00%	\$7.12	\$7.50	\$0.00	\$14.62
19	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9106
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MACHINERY COST

OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24	8	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
27	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
28	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
29	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
30	9	COTTON PICKER, FIRST PICK	6.3	114.0	1.496	1.00	\$21.18	\$7.09	\$23.94	\$10.13	\$2.30	\$64.63
	9	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12
	9	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12
31	10	COTTON PICKER, SCRAPPING	6.3	114.0	2.302	1.00	\$13.76	\$4.81	\$15.56	\$6.58	\$1.50	\$42.01
	10	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12
	10	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12
32	11	GINNING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
33	11	LIME + APP. (5 YR AVE.)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPECIFIED INTEREST												
TOTAL SPECIFIED COSTS							\$54.22	\$31.29	\$58.57	\$30.19	\$6.86	\$181.13

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9106
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
20	FURROW IRRIGATION		AC IN	\$2.374	3.000			100.00%	\$7.12	\$7.50	\$0.00	\$14.62
21	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.67EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
22	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
23	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LORSBAN	4#/GAL	PINT	\$5.185	0.400			100.00%	\$2.07		\$0.00	\$2.07
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
24	FURROW IRRIGATION		AC IN	\$2.374	3.000			100.00%	\$7.12	\$7.50	\$0.00	\$14.62
25	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
26	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LORSBAN	4#/GAL	PINT	\$5.185	0.400			100.00%	\$2.07		\$0.00	\$2.07
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
27	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
28	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PREP	6#/GAL	PINT	\$7.022	1.000			100.00%	\$7.02		\$0.00	\$7.02
	DEF/FOLEX	6EC	PINT	\$3.738	1.000			100.00%	\$3.74		\$0.00	\$3.74
29	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	DEF/FOLEX	6EC	PINT	\$3.738	1.500			100.00%	\$5.81		\$0.00	\$5.81
30								0.00%	\$0.00		\$11.07	\$75.70
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
31								0.00%	\$0.00		\$7.19	\$49.21
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
32	GINNING (LINT BASIS)		POUND	\$0.080	950.000			100.00%	\$76.00		\$0.00	\$76.00
33	LIME + APP. (5 YR AVE.)		ACRE	\$6.923	1.000			100.00%	\$6.92		\$0.00	\$6.92
											\$20.03	
									\$309.60	\$22.50	\$27.06	\$560.31

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

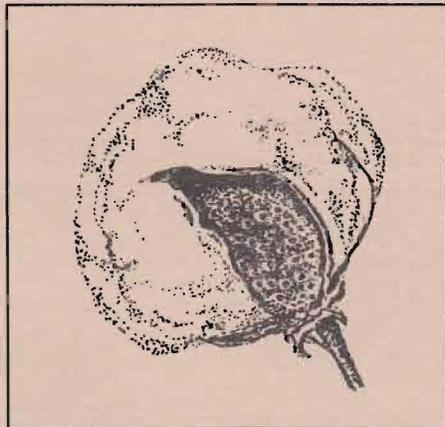
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 133

COTTON

LOAMY SOILS, SOLID PLANTED, CENTER
PIVOT IRRIGATION, NON-TOWABLE, 130 ACRES,
NORTH OF I-40, EASTERN ARKANSAS



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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$9.49	_____
FERTILIZER	\$44.78	_____
LIME + APPLICATION	\$6.92	_____
HERBICIDE	\$16.89	_____
FUNGICIDE	\$13.87	_____
INSECTICIDE	\$44.14	_____
DEFOLIANT	\$16.37	_____
AERIAL APPLICATION	\$37.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$29.43	_____
REPAIRS	\$52.73	_____
LABOR	\$26.30	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$12.28	_____
REPAIRS	\$5.81	_____
IRRIGATION LABOR	\$1.15	_____
CUSTOM SPREAD	\$6.08	_____
CUSTOM HAUL	\$0.00	_____
CUSTOM DRY OR GINNING	\$76.00	_____
MISCELLANEOUS	\$16.69	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$18.70	_____
TOTAL SPECIFIED OPERATING COSTS	\$434.64	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

	YIELD IN POUNDS				
	<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>				
	617.50	712.50	950.00	1187.50	1282.50
	\$0.58	\$0.50	\$0.38	\$0.30	\$0.28

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$9.05	_____
INTEREST	\$7.47	_____
EQUIPMENT:		
DEPRECIATION	\$8.09	_____
INTEREST	\$4.66	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$40.11	_____
INTEREST	\$16.88	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$26.49	_____
INTEREST	\$22.58	_____
TAXES & INSURANCE	\$11.72	_____
INTEREST	\$1.29	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$148.34	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$582.98	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

	YIELD IN POUNDS				
	<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>				
	617.50	712.50	950.00	1187.50	1282.50
	\$0.82	\$0.71	\$0.53	\$0.43	\$0.40

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9107
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$66.99	\$83.74	\$100.49
DRY OR GINNING (COMMERCIAL)	\$60.80	\$76.00	\$91.20
REPAIRS	\$46.83	\$58.54	\$70.24
OWNERSHIP INTEREST	\$42.30	\$52.88	\$63.45
FERTILIZER	\$35.83	\$44.78	\$53.74
INSECTICIDE	\$35.31	\$44.14	\$52.97
AERIAL APPLI. (CUSTOM HIRE)	\$29.60	\$37.00	\$44.40
MACHINERY FUEL & OIL	\$23.55	\$29.43	\$35.32
HIRED LABOR	\$21.96	\$27.45	\$32.94
INTEREST ON OP. CAP.	\$14.96	\$18.70	\$22.44
HERBICIDE	\$13.51	\$16.89	\$20.27
MISCELLANEOUS	\$13.35	\$16.69	\$20.03
DEFOLIANT	\$13.09	\$16.37	\$19.64
FUNGICIDE	\$11.10	\$13.87	\$16.64
IRRIGATION FUEL & OIL	\$9.83	\$12.28	\$14.74
SEED	\$7.59	\$9.49	\$11.39
FARM TAXES	\$7.50	\$9.38	\$11.26
LIME + APPLICATION	\$5.54	\$6.92	\$8.31
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM INSURANCE	\$1.88	\$2.34	\$2.81
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
HAUL (CUSTOM HIRE)			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$466.38	\$582.98	\$699.57

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

Breakeven prices reflect a cottonseed credit against ginning charges.

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	617.50	\$0.66	\$0.82	\$0.99
-25% OF BASE YIELD	712.50	\$0.57	\$0.71	\$0.85
BASE YIELD	950.00	\$0.43	\$0.53	\$0.64
+25% OF BASE YIELD	1187.50	\$0.34	\$0.43	\$0.51
+35% OF BASE YIELD	1282.50	\$0.32	\$0.40	\$0.47

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9107
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS:		\$405.58 PER ACRE YIELD IN POUNDS				
PRODUCER PRICE ESTIMATES		617.50	712.50	950.00	1187.50	1282.50
		-35%	-25%	BASE YIELD	+25%	+35%
		RETURNS PER ACRE				
	\$0.42	(\$148.71)	(\$109.19)	(\$10.40)	\$88.40	\$127.92
	\$0.53	(\$79.55)	(\$29.39)	\$96.00	\$221.40	\$271.56
BASE PRICE =	\$0.64	(\$10.39)	\$50.41	\$202.40	\$354.40	\$415.20
	\$0.75	\$58.77	\$130.21	\$308.80	\$487.40	\$558.84
	\$0.86	\$127.93	\$210.01	\$415.20	\$620.40	\$702.48
BASE COSTS:		\$506.98 PER ACRE YIELD IN POUNDS				
PRODUCER PRICE ESTIMATES		617.50	712.50	950.00	1187.50	1282.50
		-35%	-25%	BASE YIELD	+25%	+35%
		RETURNS PER ACRE				
	\$0.42	(\$250.11)	(\$210.59)	(\$111.80)	(\$13.00)	\$26.52
	\$0.53	(\$180.95)	(\$130.79)	(\$5.40)	\$120.00	\$170.16
BASE PRICE =	\$0.64	(\$111.79)	(\$50.99)	\$101.00	\$253.00	\$313.80
	\$0.75	(\$42.63)	\$28.81	\$207.40	\$386.00	\$457.44
	\$0.86	\$26.53	\$108.61	\$313.80	\$519.00	\$601.08
+ 20% DEVIATION FROM BASE COSTS:		\$608.37 PER ACRE YIELD IN POUNDS				
PRODUCER PRICE ESTIMATES		617.50	712.50	950.00	1187.50	1282.50
		-35%	-25%	BASE YIELD	+25%	+35%
		RETURNS PER ACRE				
	\$0.42	(\$351.51)	(\$311.99)	(\$213.20)	(\$114.40)	(\$74.88)
	\$0.53	(\$282.35)	(\$232.19)	(\$106.80)	\$18.60	\$68.76
BASE PRICE =	\$0.64	(\$213.19)	(\$152.39)	(\$0.40)	\$151.60	\$212.40
	\$0.75	(\$144.03)	(\$72.59)	\$106.00	\$284.60	\$356.04
	\$0.86	(\$74.87)	\$7.21	\$212.40	\$417.60	\$499.68

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9107
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	SUBSOIL	15.0	200.0	4.384	1.00	\$2.54	\$3.53	\$2.81	\$2.32	\$0.53	\$11.73
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.838	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
6	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	5	TRIPLE K	26.7	175.0	11.838	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.838	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
8	5	PLNTR (SPLIT BOX) 8 R@38"	25.3	175.0	8.981	1.00	\$2.22	\$1.50	\$2.40	\$1.24	\$0.28	\$7.64
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	8.981	1.00	\$0.17	\$0.00	\$0.41	\$0.23	\$0.05	\$0.86
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
9	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
10	6	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.08	\$0.02	\$0.01	\$0.00	\$0.12
12	6	CSTM APP AIR	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	6	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.08	\$0.02	\$0.01	\$0.00	\$0.12
14	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	7	INSECT SCOUTING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	7	HAND CHOP OR SPOT SPRAY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9107
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$1.26	\$13.00
3								0.00%	\$0.00		\$0.47	\$5.46
4	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	45.000			100.00%	\$12.60		\$0.00	\$12.60
	PHOSPHATE (MATERIAL)	0-46-0	POUND	\$0.103	50.000			100.00%	\$5.15		\$0.00	\$5.15
	POTASH (MATERIAL)	0-0-80	POUND	\$0.083	80.000			100.00%	\$6.64		\$0.00	\$6.64
5								0.00%	\$0.00		\$0.41	\$4.04
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.59	\$5.65
	PROWL	4EC	PINT	\$3.221	1.250	38	18	47.37%	\$1.91		\$0.00	\$2.57
								0.00%	\$0.00		\$0.00	\$0.19
8	COTTON SEED		POUND	\$0.593	18.000			100.00%	\$9.49		\$1.18	\$18.31
	TEMIK	15G	POUND	\$2.781	3.000			100.00%	\$8.34		\$0.00	\$8.34
	TERRACHLOR SX	GRAN	POUND	\$1.387	10.000			100.00%	\$13.87		\$0.00	\$13.87
	COTORAN	4L	PINT	\$6.186	1.800	38	18	47.37%	\$4.69		\$0.00	\$5.55
								0.00%	\$0.00		\$0.00	\$0.19
9								0.00%	\$0.00		\$0.86	\$6.78
10	CSTM AP FERT GRND (LIQUID)		ACRE	\$3.250	1.000			100.00%	\$3.25		\$0.00	\$3.25
	NITROGEN (ACTUAL N)		POUND	\$0.225	45.000			100.00%	\$10.13		\$0.00	\$10.13
11								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN	4L	PINT	\$6.186	1.800	38	16	42.11%	\$4.17		\$0.00	\$5.01
	MSMA	6.0 #	PINT	\$1.934	2.668	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.12
12	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
13								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX	4L	PINT	\$2.827	1.500	38	16	42.11%	\$1.79		\$0.00	\$2.63
	MSMA	6.0 #	PINT	\$1.934	2.668	38	16	42.11%	\$2.17		\$0.00	\$2.17
								0.00%	\$0.00		\$0.00	\$0.12
14	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.67EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
15	COTTON INSECT SCOUTING		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
16	HAND CHOP OR SPOT SPRAY		ACRE	\$12.690	1.000			100.00%	\$12.69		\$0.00	\$12.69
17	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
18	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9107
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

MACHINERY COST

OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER (PTO) (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	OPERATING COST		OWNERSHIP COST				
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRECIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
19	7	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
20	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	8	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	8	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
27	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
28	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
29	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
30	9	COTTON PICKER, FIRST PICK	8.3	114.0	1.496	1.00	\$21.18	\$7.09	\$23.94	\$10.13	\$2.30	\$64.63	
	9	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
	9	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
31	10	COTTON PICKER, SCRAPPING	8.3	114.0	2.302	1.00	\$13.76	\$4.61	\$15.56	\$6.58	\$1.50	\$42.01	
	10	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
	10	COTTON TRAILER	20.0	170.0	8.485	0.30	\$0.38	\$0.42	\$0.20	\$0.10	\$0.02	\$1.12	
32	11	GINNING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
33	11	LIME + APP. (5 YR AVE.)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
SPECIFIED INTEREST													
TOTAL SPECIFIED COSTS								\$52.73	\$29.43	\$57.25	\$29.01	\$6.59	\$175.01

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, SOLID PLANTED, 1991
 ENTERPRISE FILE NO.: COT9107
 LOCATION: EASTERN ARKANSAS, NORTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, 130 ACRES

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
19	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
20	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	DIMETHOATE	2.87EC	PINT	\$2.418	0.600			100.00%	\$1.45		\$0.00	\$1.45
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
21	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
22	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LORSBAN	4#/GAL	PINT	\$5.185	0.400			100.00%	\$2.07		\$0.00	\$2.07
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
23	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
24	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
25	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
26	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LORSBAN	4#/GAL	PINT	\$5.185	0.400			100.00%	\$2.07		\$0.00	\$2.07
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
27	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
28	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PREP	8#/GAL	PINT	\$7.022	1.000			100.00%	\$7.02		\$0.00	\$7.02
	DEF/FOLEX	6EC	PINT	\$3.738	1.000			100.00%	\$3.74		\$0.00	\$3.74
29	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	DEF/FOLEX	6EC	PINT	\$3.738	1.500			100.00%	\$5.61		\$0.00	\$5.61
30								0.00%	\$0.00		\$11.07	\$75.70
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
31								0.00%	\$0.00		\$7.19	\$49.21
								0.00%	\$0.00		\$0.00	\$1.12
								0.00%	\$0.00		\$0.00	\$1.12
32	GINNING (LINT BASIS)		POUND	\$0.080	950.000			100.00%	\$78.00		\$0.00	\$76.00
33	LIME + APP. (5 YR AVE.)		ACRE	\$6.923	1.000			100.00%	\$6.92		\$0.00	\$6.92
									\$307.48	\$54.20	\$26.30	\$582.98

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 134

COTTON

LOAMY SOILS, NARROW 2x1 SKIP ROW, FURROW
IRRIGATION, SOUTH OF I-40, EASTERN ARKANSAS



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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	<i>(Per Land Acre Cost)</i>			YOUR COST	
SEED		\$7.12			
FERTILIZER		\$53.31			
LIME + APPLICATION		\$10.01			
HERBICIDE		\$15.26			
FUNGICIDE		\$10.40			
INSECTICIDE		\$63.73			
DEFOLIANT		\$16.37			
AERIAL APPLICATION		\$44.00			
MACHINERY:					
FUEL, OIL, LUBRICANTS		\$27.90			
REPAIRS		\$45.07			
LABOR		\$22.49			
IRRIGATION:					
FUEL, OIL, LUBRICANTS		\$8.59			
REPAIRS		\$2.46			
IRRIGATION LABOR		\$5.59			
CUSTOM SPREAD		\$6.08			
CUSTOM HAUL		\$0.00			
CUSTOM DRY OR GINNING		\$76.00			
MISCELLANEOUS		\$16.69			
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.		\$19.53			
TOTAL SPECIFIED OPERATING COSTS		\$450.60			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
	YIELD IN POUNDS PER LAND ACRE				
	<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>				
	617.50	712.50	950.00	1187.50	1282.50
	\$0.61	\$0.53	\$0.39	\$0.32	\$0.29
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	<i>(Per Land Acre Cost)</i>			YOUR COST	
TRACTORS:					
DEPRECIATION		\$10.18			
INTEREST		\$8.40			
EQUIPMENT:					
DEPRECIATION		\$8.20			
INTEREST		\$4.85			
SPECIAL EQUIPMENT:					
DEPRECIATION		\$30.09			
INTEREST		\$12.66			
MISCELLANEOUS:					
DEPRECIATION		\$0.00			
INTEREST		\$0.00			
IRRIGATION:					
DEPRECIATION		\$10.82			
INTEREST		\$9.52			
TAXES & INSURANCE		\$8.05			
INTEREST		\$0.89			
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS		\$103.64			
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS		\$554.24			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
	YIELD IN POUNDS PER LAND ACRE				
	<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>				
	617.50	712.50	950.00	1187.50	1282.50
	\$0.77	\$0.67	\$0.50	\$0.40	\$0.37
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, NARROW 2*1 SKIP (75%), 1991
ENTERPRISE FILE NO.: SCOT9108, 95% RELATIVE YIELD
LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
SOILS TYPE: LOAMY
IRRIGATION METHOD: FURROW

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DRY OR GINNING (COMMERCIAL)	\$60.80	\$76.00	\$91.20
INSECTICIDE	\$50.98	\$63.73	\$76.48
DEPRECIATION	\$47.43	\$59.28	\$71.14
FERTILIZER	\$42.65	\$53.31	\$63.97
REPAIRS	\$38.03	\$47.53	\$57.04
AERIAL APPLI. (CUSTOM HIRE)	\$35.20	\$44.00	\$52.80
OWNERSHIP INTEREST	\$29.05	\$36.31	\$43.57
HIRED LABOR	\$22.47	\$28.08	\$33.70
MACHINERY FUEL & OIL	\$22.32	\$27.90	\$33.47
INTEREST ON OP. CAP.	\$15.62	\$19.53	\$23.43
MISCELLANEOUS	\$13.35	\$16.69	\$20.03
DEFOLIANT	\$13.09	\$16.37	\$19.64
HERBICIDE	\$12.21	\$15.26	\$18.32
FUNGICIDE	\$8.32	\$10.40	\$12.48
LIME + APPLICATION	\$8.00	\$10.01	\$12.01
IRRIGATION FUEL & OIL	\$6.88	\$8.59	\$10.31
SEED	\$5.69	\$7.12	\$8.54
FARM TAXES	\$5.15	\$6.44	\$7.73
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM INSURANCE	\$1.29	\$1.61	\$1.93
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
HAUL (CUSTOM HIRE)			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$443.40	\$554.24	\$665.09

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

Breakeven prices reflect a cottonseed credit against ginning charges.

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	617.50	\$0.62	\$0.77	\$0.93
-25% OF BASE YIELD	712.50	\$0.54	\$0.67	\$0.81
BASE YIELD	950.00	\$0.40	\$0.50	\$0.60
+25% OF BASE YIELD	1187.50	\$0.32	\$0.40	\$0.48
+35% OF BASE YIELD	1282.50	\$0.30	\$0.37	\$0.45

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, NARROW 2*1 SKIP (75%), 1991
 ENTERPRISE FILE NO.: SCOT9108, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS: \$382.60 PER ACRE
 YIELD IN POUNDS PER LAND ACRE

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER LAND ACRE					
	\$0.42	(\$125.73)	(\$86.21)	\$12.59	\$111.39	\$150.90
	\$0.53	(\$56.57)	(\$6.41)	\$118.99	\$244.39	\$294.54
BASE PRICE =	\$0.64	\$12.59	\$73.39	\$225.39	\$377.39	\$438.18
	\$0.75	\$81.75	\$153.19	\$331.79	\$510.39	\$581.82
	\$0.86	\$150.91	\$232.99	\$438.19	\$643.39	\$725.46

BASE COSTS: \$478.24 PER ACRE
 YIELD IN POUNDS PER LAND ACRE

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER LAND ACRE					
	\$0.42	(\$221.38)	(\$181.86)	(\$83.06)	\$15.73	\$55.25
	\$0.53	(\$152.22)	(\$102.06)	\$23.34	\$148.73	\$198.89
BASE PRICE =	\$0.64	(\$83.06)	(\$22.26)	\$129.74	\$281.73	\$342.53
	\$0.75	(\$13.90)	\$57.54	\$236.14	\$414.73	\$486.17
	\$0.86	\$55.26	\$137.34	\$342.54	\$547.73	\$629.81

+ 20% DEVIATION FROM BASE COSTS: \$573.89 PER ACRE
 YIELD IN POUNDS PER LAND ACRE

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER LAND ACRE					
	\$0.42	(\$317.03)	(\$277.51)	(\$178.72)	(\$79.92)	(\$40.40)
	\$0.53	(\$247.87)	(\$197.71)	(\$72.32)	\$53.08	\$103.24
BASE PRICE =	\$0.64	(\$178.71)	(\$117.91)	\$34.08	\$186.08	\$246.88
	\$0.75	(\$109.55)	(\$38.11)	\$140.48	\$319.08	\$390.52
	\$0.86	(\$40.39)	\$41.69	\$246.88	\$452.08	\$534.16

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, NARROW 2*1 SKIP (75%), 1991
 ENTERPRISE FILE NO.: SCOT9108, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	SUBSOIL	15.0	200.0	4.364	1.00	\$2.54	\$3.53	\$2.81	\$2.32	\$0.53	\$11.73
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.838	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	3	LAND FLOAT	18.0	175.0	7.273	1.00	\$1.49	\$1.86	\$1.31	\$1.18	\$0.27	\$6.11
5	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6	4	DISK BEDDER, 8 ROW @ 33"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
8	5	TRIPLE K	26.7	175.0	11.838	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.838	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.14
9	5	PLNTR (SPLIT BOX) 8 R@38"	25.3	175.0	8.981	1.00	\$2.22	\$1.50	\$2.40	\$1.24	\$0.28	\$7.64
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	8.981	1.00	\$0.17	\$0.00	\$0.41	\$0.23	\$0.05	\$0.86
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.05	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.14
10	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
11	6	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.05	\$0.02	\$0.01	\$0.00	\$0.12
13	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.67	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.05	\$0.02	\$0.01	\$0.00	\$0.12
14	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	HAND CHOP OR SPOT SPRAY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	7	INSECT SCOUTING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, NARROW 2*1 SKIP (75%), 1991
 ENTERPRISE FILE NO.: SCOT9108, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$1.26	\$13.00
3								0.00%	\$0.00		\$0.47	\$5.46
4								0.00%	\$0.00		\$0.76	\$6.87
5	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	50.000			100.00%	\$14.00		\$0.00	\$14.00
	PHOSPHATE (MATERIAL)	0-46-0	POUND	\$0.103	75.000			100.00%	\$7.73		\$0.00	\$7.73
	POTASH (MATERIAL)	0-0-60	POUND	\$0.083	120.000			100.00%	\$9.96		\$0.00	\$9.96
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.41	\$4.04
8								0.00%	\$0.00		\$0.59	\$5.65
	PROWL	4EC	PINT	\$3.221	1.250			100.00%	\$4.03		\$0.00	\$4.69
								0.00%	\$0.00		\$0.00	\$0.14
9	COTTON SEED(ADJ FOR SKIP)		POUND	\$0.593	12.000			100.00%	\$7.12		\$1.18	\$15.94
	TEMIK (AFS)	15G	POUND	\$2.781	2.250			100.00%	\$6.26		\$0.00	\$6.26
	TERRACHLOR SX (AFS)	GRAN	POUND	\$1.387	7.500			100.00%	\$10.40		\$0.00	\$10.40
	COTORAN (AFS)	4L	PINT	\$8.186	1.200	38	18	47.37%	\$3.52		\$0.00	\$4.37
								0.00%	\$0.00		\$0.00	\$0.14
10								0.00%	\$0.00		\$0.88	\$6.76
11	CSTM AP FERT GRND (LIQUID)		ACRE	\$3.250	1.000			100.00%	\$3.25		\$0.00	\$3.25
	N (ACTUAL), (AFS)		POUND	\$0.225	37.500			100.00%	\$8.44		\$0.00	\$8.44
12								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN (AFS)	4L	PINT	\$8.186	1.200	38	18	42.11%	\$3.13		\$0.00	\$3.97
	MSMA (AFS)	6.0 #	PINT	\$1.934	2.000	38	18	42.11%	\$1.83		\$0.00	\$1.83
								0.00%	\$0.00		\$0.00	\$0.12
13								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX (AFS)	4L	PINT	\$2.827	1.125	38	18	42.11%	\$1.34		\$0.00	\$2.18
	MSMA (AFS)	6.0 #	PINT	\$1.934	2.000	38	18	42.11%	\$1.83		\$0.00	\$1.83
								0.00%	\$0.00		\$0.00	\$0.12
14	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
17	HAND CHOP OR SPOT SPRAY		ACRE	\$12.690	1.000			100.00%	\$12.69		\$0.00	\$12.69
18	COTTON INSECT SCOUTING		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
19	FURROW IRRIGATION		AC IN	\$2.465	2.250			100.00%	\$5.55	\$7.50	\$0.00	\$13.04
20	FURROW IRRIGATION		AC IN	\$2.465	2.250			100.00%	\$5.55	\$7.50	\$0.00	\$13.04
21	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, NARROW 2*1 SKIP (75%), 1991
 ENTERPRISE FILE NO.: SCOT9108, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST						
							OPERATING COST		OWNERSHIP COST				
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	7	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	8	FURROW IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
27	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
28	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
29	9	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
30	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
31	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9			0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
32	9	COTTON PICKER, FIRST PICK	6.3	114.0	1.496	0.75	\$15.88	\$5.32	\$17.95	\$7.60	\$1.73	\$48.48	
9		COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
9		COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
33	10	COTTON PICKER, SCRAPPING	6.3	114.0	2.302	0.75	\$10.32	\$3.46	\$11.67	\$4.94	\$1.12	\$31.51	
10		COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
10		COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
34	11	GINNING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
35	11	LIME + APP. (5 YR AVE.)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0			0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0			0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0			0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
SPECIFIED INTEREST													
TOTAL SPECIFIED COSTS								\$45.07	\$27.90	\$48.47	\$25.91	\$5.89	\$153.23

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, NARROW 2*1 SKIP (75%), 1991
 ENTERPRISE FILE NO.: SCOT9108, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
22	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
23	FURROW IRRIGATION		AC IN	\$2.485	2.250			100.00%	\$5.55	\$7.50	\$0.00	\$13.04
24	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
25	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
26	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
27	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
28	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	CURACRON	8EC	PINT	\$10.698	1.000			100.00%	\$10.70		\$0.00	\$10.70
	LARVIN	3.2#	PINT	\$6.101	0.628			100.00%	\$3.82		\$0.00	\$3.82
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
29	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.600			100.00%	\$2.01		\$0.00	\$2.01
30	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PREP	6#/GAL	PINT	\$7.022	1.000			100.00%	\$7.02		\$0.00	\$7.02
	DEF/FOLEX	6EC	PINT	\$3.738	1.000			100.00%	\$3.74		\$0.00	\$3.74
31	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	DEF/FOLEX	6EC	PINT	\$3.738	1.500			100.00%	\$5.61		\$0.00	\$5.61
32								0.00%	\$0.00		\$8.30	\$56.78
								0.00%	\$0.00		\$0.00	\$0.84
								0.00%	\$0.00		\$0.00	\$0.84
33								0.00%	\$0.00		\$5.40	\$38.91
								0.00%	\$0.00		\$0.00	\$0.84
								0.00%	\$0.00		\$0.00	\$0.84
34	GINNING (LINT BASIS)		POUND	\$0.080	950.000			100.00%	\$76.00		\$0.00	\$76.00
35	LIME + APP. (5 YR AVE.)		ACRE	\$10.005	1.000			100.00%	\$10.01		\$0.00	\$10.01
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
												\$20.41
									\$335.61	\$22.50	\$22.49	\$554.24

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Dr. David E. Foster, Acting Director of Extension Service, University of Arkansas. The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, sex, age, or handicap, and is an Equal Opportunity Employer.

ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 135

COTTON

LOAMY SOILS, NARROW 2x1 SKIP ROW, CENTER
PIVOT IRRIGATION, NON-TOWABLE, 130 ACRES,
SOUTH OF I-40, EASTERN ARKANSAS



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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as ginning.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION COTTON COMMITTEE

Claude M. Bonner, Chairman	Charlie Guy
Billy E. Herrington	Gary Huitink
Bringle Jennings	Donald R. Johnson
Terry Kirkpatrick	J. Scott McConnell
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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	<i>(Per Land Acre Cost)</i>			YOUR COST	
SEED		\$7.12			
FERTILIZER		\$53.31			
LIME + APPLICATION		\$10.01			
HERBICIDE		\$15.26			
FUNGICIDE		\$10.40			
INSECTICIDE		\$63.73			
DEFOLIANT		\$16.37			
AERIAL APPLICATION		\$44.00			
MACHINERY:					
FUEL, OIL, LUBRICANTS		\$26.04			
REPAIRS		\$43.58			
LABOR		\$21.74			
IRRIGATION:					
FUEL, OIL, LUBRICANTS		\$12.28			
REPAIRS		\$5.81			
IRRIGATION LABOR		\$1.15			
CUSTOM SPREAD		\$6.08			
CUSTOM HAUL		\$0.00			
CUSTOM DRY OR GINNING		\$76.00			
MISCELLANEOUS		\$16.69			
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.		\$19.45			
TOTAL SPECIFIED OPERATING COSTS		\$449.01			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
		YIELD IN POUNDS PER LAND ACRE			
		<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>			
	617.50	712.50	950.00	1187.50	1282.50
	\$0.60	\$0.52	\$0.39	\$0.31	\$0.29
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	<i>(Per Land Acre Cost)</i>			YOUR COST	
TRACTORS:					
DEPRECIATION		\$9.05			
INTEREST		\$7.47			
EQUIPMENT:					
DEPRECIATION		\$8.01			
INTEREST		\$4.60			
SPECIAL EQUIPMENT:					
DEPRECIATION		\$30.09			
INTEREST		\$12.66			
MISCELLANEOUS:					
DEPRECIATION		\$0.00			
INTEREST		\$0.00			
IRRIGATION:					
DEPRECIATION		\$26.49			
INTEREST		\$22.58			
TAXES & INSURANCE		\$10.75			
INTEREST		\$1.18			
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS		\$132.88			
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS		\$581.90			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
		YIELD IN POUNDS PER LAND ACRE			
		<i>(Breakeven prices reflect a cottonseed credit against ginning charges.)</i>			
	617.50	712.50	950.00	1187.50	1282.50
	\$0.82	\$0.71	\$0.53	\$0.43	\$0.39
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: COTTON, NARROW 2*1 SKIP, (75%), 1991
 ENTERPRISE FILE NO.: COT9109, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DRY OR GINNING (COMMERCIAL)	\$60.80	\$76.00	\$91.20
DEPRECIATION	\$58.91	\$73.64	\$88.37
INSECTICIDE	\$50.98	\$63.73	\$76.48
FERTILIZER	\$42.65	\$53.31	\$63.97
REPAIRS	\$39.51	\$49.39	\$59.27
OWNERSHIP INTEREST	\$38.79	\$48.49	\$58.19
AERIAL APPLI. (CUSTOM HIRE)	\$35.20	\$44.00	\$52.80
MACHINERY FUEL & OIL	\$20.83	\$26.04	\$31.25
HIRED LABOR	\$18.31	\$22.89	\$27.46
INTEREST ON OP. CAP.	\$15.56	\$19.45	\$23.34
MISCELLANEOUS	\$13.35	\$16.69	\$20.03
DEFOLIANT	\$13.09	\$16.37	\$19.64
HERBICIDE	\$12.21	\$15.26	\$18.32
IRRIGATION FUEL & OIL	\$9.83	\$12.28	\$14.74
FUNGICIDE	\$8.32	\$10.40	\$12.48
LIME + APPLICATION	\$8.00	\$10.01	\$12.01
FARM TAXES	\$6.88	\$8.60	\$10.32
SEED	\$5.69	\$7.12	\$8.54
SPREAD (CUSTOM HIRE)	\$4.87	\$6.08	\$7.30
FARM INSURANCE	\$1.72	\$2.15	\$2.58
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DRYING FUEL			
FINANCIAL SERVICES			
HAUL (CUSTOM HIRE)			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$465.52	\$581.90	\$698.28

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS*Breakeven prices reflect a cottonseed credit against ginning charges.*

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	617.50	\$0.66	\$0.82	\$0.98
-25% OF BASE YIELD	712.50	\$0.57	\$0.71	\$0.85
BASE YIELD	950.00	\$0.43	\$0.53	\$0.64
+25% OF BASE YIELD	1187.50	\$0.34	\$0.43	\$0.51
+35% OF BASE YIELD	1282.50	\$0.32	\$0.39	\$0.47

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: COTTON, NARROW 2*1 SKIP, (75%), 1991
 ENTERPRISE FILE NO.: COT9109, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT

(Seed values and ginning charges vary by location. This analysis assumes that seed values cover ginning charges. Therefore, costs and returns shown below are adjusted accordingly.)

- 20% DEVIATION FROM BASE COSTS: \$404.72 PER ACRE

YIELD IN POUNDS PER LAND ACRE

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER LAND ACRE					
	\$0.42	(\$147.85)	(\$108.33)	(\$9.53)	\$89.26	\$128.78
	\$0.53	(\$78.69)	(\$28.53)	\$96.87	\$222.26	\$272.42
BASE PRICE =	\$0.64	(\$9.53)	\$51.27	\$203.27	\$355.26	\$416.06
	\$0.75	\$59.63	\$131.07	\$309.67	\$488.26	\$559.70
	\$0.86	\$128.79	\$210.87	\$416.07	\$621.26	\$703.34

BASE COSTS: \$505.90 PER ACRE

YIELD IN POUNDS PER LAND ACRE

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER LAND ACRE					
	\$0.42	(\$249.03)	(\$209.51)	(\$110.72)	(\$11.92)	\$27.60
	\$0.53	(\$179.87)	(\$129.71)	(\$4.32)	\$121.08	\$171.24
BASE PRICE =	\$0.64	(\$110.71)	(\$49.91)	\$102.08	\$254.08	\$314.88
	\$0.75	(\$41.55)	\$29.89	\$208.48	\$387.08	\$458.52
	\$0.86	\$27.61	\$109.69	\$314.88	\$520.08	\$602.16

+ 20% DEVIATION FROM BASE COSTS: \$607.08 PER ACRE

YIELD IN POUNDS PER LAND ACRE

PRODUCER PRICE ESTIMATES	617.50	712.50	950.00	1187.50	1282.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER LAND ACRE					
	\$0.42	(\$350.21)	(\$310.69)	(\$211.90)	(\$113.10)	(\$73.59)
	\$0.53	(\$281.05)	(\$230.89)	(\$105.50)	\$19.90	\$70.05
BASE PRICE =	\$0.64	(\$211.89)	(\$151.09)	\$0.90	\$152.90	\$213.69
	\$0.75	(\$142.73)	(\$71.29)	\$107.30	\$285.90	\$357.33
	\$0.86	(\$73.57)	\$8.51	\$213.70	\$418.90	\$500.97

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, NARROW 2*1 SKIP, (75%), 1991
 ENTERPRISE FILE NO.: COT9109, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	12	STALK CUTTER	15.0	140.0	7.727	1.00	\$1.73	\$1.40	\$1.34	\$0.97	\$0.22	\$5.66
2	3	SUBSOIL	15.0	200.0	4.364	1.00	\$2.54	\$3.53	\$2.81	\$2.32	\$0.53	\$11.73
3	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
4	4	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
6	4	DISK BEDDER, 8 ROW @ 38"	25.3	175.0	13.509	1.00	\$0.90	\$1.00	\$0.89	\$0.69	\$0.16	\$3.63
7	5	TRIPLE K	26.7	175.0	11.638	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.638	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP AND WATER TANK	20.0	170.0	8.485	0.05	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.14
8	5	PLNTR (SPLIT BOX) 8 R@38"	25.3	175.0	8.981	1.00	\$2.22	\$1.50	\$2.40	\$1.24	\$0.28	\$7.64
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	SPRAYER, SADDLE MTD BC	25.3	0.0	8.981	1.00	\$0.17	\$0.00	\$0.41	\$0.23	\$0.05	\$0.86
	5	PICKUP AND WATER TANK	20.0	170.0	8.485	0.05	\$0.04	\$0.06	\$0.02	\$0.01	\$0.00	\$0.14
9	5	ROW CULTIVATOR 8 ROW @38"	25.3	140.0	6.448	1.00	\$1.55	\$1.87	\$1.42	\$1.03	\$0.23	\$5.91
10	6	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.87	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP AND WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.05	\$0.02	\$0.01	\$0.00	\$0.12
12	6	ROW CULTIVATOR, 8 ROW@38"	25.3	140.0	6.448	1.00	\$1.55	\$1.87	\$1.42	\$1.03	\$0.23	\$5.91
	6	DIRECTED SPRAYER	25.3	0.0	6.448	1.00	\$0.17	\$0.00	\$0.40	\$0.22	\$0.05	\$0.84
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP AND WATER TANK	20.0	170.0	8.485	0.04	\$0.04	\$0.05	\$0.02	\$0.01	\$0.00	\$0.12
13	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	6	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	7	HAND CHOP OR SPOT SPRAY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	7	INSECT SCOUTING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	7	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, NARROW 2*1 SKIP, (75%), 1991
 ENTERPRISE FILE NO.: COT9109, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.71	\$6.37
2								0.00%	\$0.00		\$1.26	\$13.00
3								0.00%	\$0.00		\$0.47	\$5.46
4	CSTM AP FERT GRND (DRY)		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	NITROGEN (ACTUAL N)		POUND	\$0.280	50.000			100.00%	\$14.00		\$0.00	\$14.00
	PHOSPHATE (MATERIAL)	0-48-0	POUND	\$0.103	75.000			100.00%	\$7.73		\$0.00	\$7.73
	POTASH (MATERIAL)	0-0-80	POUND	\$0.083	120.000			100.00%	\$9.96		\$0.00	\$9.96
5								0.00%	\$0.00		\$0.41	\$4.04
6								0.00%	\$0.00		\$0.41	\$4.04
7								0.00%	\$0.00		\$0.59	\$5.65
	PROWL	4EC	PINT	\$3.221	1.250			100.00%	\$4.03		\$0.00	\$4.89
								0.00%	\$0.00		\$0.00	\$0.14
8	COTTON SEED(ADJ FOR SKIP)		POUND	\$0.593	12.000			100.00%	\$7.12		\$1.18	\$15.94
	TEMIK (AFS)	15G	POUND	\$2.781	2.250			100.00%	\$6.26		\$0.00	\$6.26
	TERRACHLOR SX (AFS)	GRAN	POUND	\$1.387	7.500			100.00%	\$10.40		\$0.00	\$10.40
	COTORAN (AFS)	4L	PINT	\$6.186	1.200	38	18	47.37%	\$3.52		\$0.00	\$4.37
								0.00%	\$0.00		\$0.00	\$0.14
9								0.00%	\$0.00		\$0.88	\$6.76
10	CSTM AP FERT GRND (LIQUID)		ACRE	\$3.250	1.000			100.00%	\$3.25		\$0.00	\$3.25
	N (ACTUAL), (AFS)		POUND	\$0.225	37.500			100.00%	\$8.44		\$0.00	\$8.44
11								0.00%	\$0.00		\$1.07	\$6.98
	COTORAN (AFS)	4L	PINT	\$6.186	1.200	38	16	42.11%	\$3.13		\$0.00	\$3.97
	MSMA (AFS)	6.0 #	PINT	\$1.934	2.000	38	16	42.11%	\$1.83		\$0.00	\$1.63
								0.00%	\$0.00		\$0.00	\$0.12
12								0.00%	\$0.00		\$1.07	\$6.98
	BLADEX (AFS)	4L	PINT	\$2.827	1.125	38	16	42.11%	\$1.34		\$0.00	\$2.18
	MSMA (AFS)	6.0 #	PINT	\$1.934	2.000	38	16	42.11%	\$1.63		\$0.00	\$1.63
								0.00%	\$0.00		\$0.00	\$0.12
13	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
14	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
15	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
	SOLUBOR	20%	POUND	\$0.593	1.000			100.00%	\$0.59		\$0.00	\$0.59
16	HAND CHOP OR SPOT SPRAY		ACRE	\$12.690	1.000			100.00%	\$12.69		\$0.00	\$12.69
17	COTTON INSECT SCOUTING		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
18	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
19	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
20	CSTM AP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93

SEQUENCE OF OPERATIONS

ENTERPRISE: COTTON, NARROW 2*1 SKIP, (75%), 1991
 ENTERPRISE FILE NO.: COT9109, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST						
							OPERATING COST		OWNERSHIP COST				
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	8	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	8	CENTER PIVOT IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	8	APPLY INSECTICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
27	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
28	8	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
29	9	APPLY INSECT. & FOLIAR N.	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
30	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
31	9	APPLY DEFOLIANT	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	9		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
32	9	COTTON PICKER, FIRST PICK	6.3	114.0	1.496	0.75	\$15.88	\$5.32	\$17.95	\$7.60	\$1.73	\$48.48	
	9	COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
	9	COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
33	10	COTTON PICKER, SCRAPPING	6.3	114.0	2.302	0.75	\$10.32	\$3.46	\$11.87	\$4.94	\$1.12	\$31.51	
	10	COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
	10	COTTON TRAILER	20.0	170.0	8.485	0.23	\$0.28	\$0.32	\$0.15	\$0.07	\$0.02	\$0.84	
34	11	GINNING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
35	11	LIME + APP. (5 YR AVE.)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
SPECIFIED INTEREST													
TOTAL SPECIFIED COSTS								\$43.58	\$26.04	\$47.18	\$24.73	\$5.62	\$147.12

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: COTTON, NARROW 2*1 SKIP, (75%), 1991
 ENTERPRISE FILE NO.: COT9109, 95% RELATIVE YIELD
 LOCATION: EASTERN ARKANSAS, SOUTH OF I-40
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT

MATERIAL AND/OR MISCELLANEOUS

OPERATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMULATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPERATING COST (J)	OWNER-SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
	NITROGEN (ACTUAL N)		POUND	\$0.305	1.100			100.00%	\$0.34		\$0.00	\$0.34
21	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	BIDRIN	8EC	PINT	\$9.474	0.200			100.00%	\$1.89		\$0.00	\$1.89
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.800			100.00%	\$2.01		\$0.00	\$2.01
22	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
23	CENTER PIVOT IRRIGATION		AC IN	\$3.849	1.250			100.00%	\$4.81	\$13.55	\$0.00	\$18.36
24	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
25	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.800			100.00%	\$2.01		\$0.00	\$2.01
26	CSTM APP AIR 3 GAL		ACRE	\$3.000	1.000			100.00%	\$3.00		\$0.00	\$3.00
	GUTHION	2L	PINT	\$2.934	1.000			100.00%	\$2.93		\$0.00	\$2.93
27	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.800			100.00%	\$2.01		\$0.00	\$2.01
28	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	CURACRON	8EC	PINT	\$10.698	1.000			100.00%	\$10.70		\$0.00	\$10.70
	LARVIN	3.2#	PINT	\$6.101	0.626			100.00%	\$3.82		\$0.00	\$3.82
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.800			100.00%	\$2.01		\$0.00	\$2.01
29	CSTM AP AIR 5 GAL		ACRE	\$3.500	1.000			100.00%	\$3.50		\$0.00	\$3.50
	PYRETHROID		MED RATE	\$4.692	1.000			100.00%	\$4.69		\$0.00	\$4.69
	LARVIN	3.2#	PINT	\$6.101	0.313			100.00%	\$1.91		\$0.00	\$1.91
	NITROGEN (ACTUAL N)		POUND	\$0.305	6.800			100.00%	\$2.01		\$0.00	\$2.01
30	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PREP	6#/GAL	PINT	\$7.022	1.000			100.00%	\$7.02		\$0.00	\$7.02
	DEF/FOLEX	6EC	PINT	\$3.738	1.000			100.00%	\$3.74		\$0.00	\$3.74
31	CSTM AP AIR DEFOLIANT		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	DEF/FOLEX	6EC	PINT	\$3.738	1.500			100.00%	\$5.81		\$0.00	\$5.81
32								0.00%	\$0.00		\$8.30	\$58.78
								0.00%	\$0.00		\$0.00	\$0.84
								0.00%	\$0.00		\$0.00	\$0.84
33								0.00%	\$0.00		\$5.40	\$36.91
								0.00%	\$0.00		\$0.00	\$0.84
								0.00%	\$0.00		\$0.00	\$0.84
34	GINNING (LINT BASIS)		POUND	\$0.080	950.000			100.00%	\$76.00		\$0.00	\$76.00
35	LIME + APP. (5 YR AVE.)		ACRE	\$10.005	1.000			100.00%	\$10.01		\$0.00	\$10.01
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
												\$20.63
									\$338.21	\$54.20	\$21.74	\$581.90

**LIST OF PUBLICATIONS FOR
ESTIMATING 1991 PRODUCTION COSTS**

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

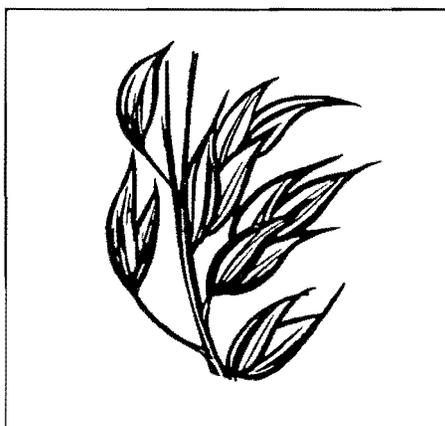
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 109

OATS

LOAMY SOILS



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Nathan Mckinney, Chairman	Ford L. Baldwin
Raymond C. Benz	Albert Bivings
Stanley L. Chapman	Jerry Don Clark
Charlie Guy	Gary Huitink
Billy E. Herrington	Donald R. Johnson
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Tony E. Windham	

THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$7.38	_____
FERTILIZER	\$32.90	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$0.00	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$4.25	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$8.93	_____
REPAIRS	\$12.32	_____
LABOR	\$4.94	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$0.00	_____
CUSTOM HAUL	\$13.50	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$4.63	_____
TOTAL SPECIFIED OPERATING COSTS	\$88.84	_____

<i>PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST</i>					
	YIELD IN BUSHELS				
	58.50	67.50	90.00	112.50	121.50
	\$1.43	\$1.26	\$0.99	\$0.82	\$0.77

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$3.69	_____
INTEREST	\$3.04	_____
EQUIPMENT:		
DEPRECIATION	\$4.40	_____
INTEREST	\$2.72	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$9.59	_____
INTEREST	\$3.52	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$2.11	_____
INTEREST	\$0.23	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$29.31	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$118.14	_____
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<i>PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST</i>					
	YIELD IN BUSHELS				
	58.50	67.50	90.00	112.50	121.50
	\$1.93	\$1.70	\$1.31	\$1.08	\$1.01

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: OATS, FOLLOWING SOYBEANS OR FALLOW
 ENTERPRISE FILE NO.: OATS9101, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$26.32	\$32.90	\$39.48
DEPRECIATION	\$14.15	\$17.69	\$21.22
HAUL (CUSTOM HIRE)	\$10.80	\$13.50	\$16.20
REPAIRS	\$9.86	\$12.32	\$14.78
OWNERSHIP INTEREST	\$7.61	\$9.51	\$11.41
MACHINERY FUEL & OIL	\$7.14	\$8.93	\$10.71
SEED	\$5.90	\$7.38	\$8.85
HIRED LABOR	\$3.95	\$4.94	\$5.92
INTEREST ON OP. CAP.	\$3.71	\$4.63	\$5.56
AERIAL APPLI. (CUSTOM HIRE)	\$3.40	\$4.25	\$5.10
FARM TAXES	\$1.35	\$1.69	\$2.02
FARM INSURANCE	\$0.34	\$0.42	\$0.51
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
HERBICIDE			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$94.51	\$118.14	\$141.77

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE	
-35% OF BASE YIELD	58.50	\$1.55	\$2.32
-25% OF BASE YIELD	67.50	\$1.36	\$2.04
BASE YIELD	90.00	\$1.05	\$1.58
+25% OF BASE YIELD	112.50	\$0.87	\$1.30
+35% OF BASE YIELD	121.50	\$0.81	\$1.22

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: OATS, FOLLOWING SOYBEANS OR FALLOW
 ENTERPRISE FILE NO.: OATS9101, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS: \$94.51 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	58.50	67.50	90.00	112.50	121.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.78	(\$44.90)	(\$39.02)	(\$24.31)	(\$9.61)	(\$3.73)
	\$0.99	(\$32.61)	(\$24.84)	(\$5.41)	\$14.01	\$21.78
BASE PRICE =	\$1.20	(\$20.33)	(\$10.67)	\$13.49	\$37.64	\$47.30
	\$1.41	(\$8.04)	\$3.51	\$32.39	\$61.26	\$72.81
	\$1.62	\$4.24	\$17.68	\$51.29	\$84.89	\$98.33

BASE COSTS: \$118.14 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	58.50	67.50	90.00	112.50	121.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.78	(\$67.53)	(\$61.93)	(\$47.94)	(\$33.95)	(\$28.36)
	\$0.99	(\$55.24)	(\$47.76)	(\$29.04)	(\$10.33)	(\$2.84)
BASE PRICE =	\$1.20	(\$42.96)	(\$33.58)	(\$10.14)	\$13.30	\$22.67
	\$1.41	(\$30.67)	(\$19.41)	\$8.76	\$36.92	\$48.19
	\$1.62	(\$18.39)	(\$5.23)	\$27.66	\$60.55	\$73.70

+ 20% DEVIATION FROM BASE COSTS: \$141.77 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	58.50	67.50	90.00	112.50	121.50	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$0.78	(\$90.16)	(\$84.85)	(\$71.57)	(\$58.29)	(\$52.98)
	\$0.99	(\$77.87)	(\$70.67)	(\$52.67)	(\$34.67)	(\$27.47)
BASE PRICE =	\$1.20	(\$65.59)	(\$56.50)	(\$33.77)	(\$11.04)	(\$1.95)
	\$1.41	(\$53.30)	(\$42.32)	(\$14.87)	\$12.58	\$23.56
	\$1.62	(\$41.02)	(\$28.15)	\$4.03	\$36.21	\$49.08

**LIST OF PUBLICATIONS FOR
ESTIMATING 1991 PRODUCTION COSTS**

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 112

RAPSEED (CANOLA)

LOAMY SOILS

AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$16.47	_____
FERTILIZER	\$43.60	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$3.42	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$11.02	_____
REPAIRS	\$14.81	_____
LABOR	\$5.87	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$0.00	_____
CUSTOM HAUL	\$4.95	_____
CUSTOM DRY OR GINNING	\$3.30	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$5.51	_____
TOTAL SPECIFIED OPERATING COSTS	\$108.95	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

	YIELD IN POUNDS				
	1072.50	1237.50	1650.00	2062.50	2227.50
	\$0.10	\$0.08	\$0.07	\$0.05	\$0.05

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$4.53	_____
INTEREST	\$3.74	_____
EQUIPMENT:		
DEPRECIATION	\$5.68	_____
INTEREST	\$3.83	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.56	_____
INTEREST	\$4.24	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$2.68	_____
INTEREST	\$0.30	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$36.55	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$145.50	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

	YIELD IN POUNDS				
	1072.50	1237.50	1650.00	2062.50	2227.50
	\$0.13	\$0.11	\$0.09	\$0.07	\$0.06

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: RAPESEED (CANOLA), 1991
 ENTERPRISE FILE NO.: RAP9101, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$34.88	\$43.60	\$52.32
DEPRECIATION	\$17.42	\$21.77	\$26.12
SEED	\$13.18	\$16.47	\$19.76
REPAIRS	\$11.85	\$14.81	\$17.77
OWNERSHIP INTEREST	\$9.68	\$12.10	\$14.52
MACHINERY FUEL & OIL	\$8.81	\$11.02	\$13.22
HIRED LABOR	\$4.70	\$5.87	\$7.05
INTEREST ON OP. CAP.	\$4.41	\$5.51	\$6.61
HAUL (CUSTOM HIRE)	\$3.96	\$4.95	\$5.94
HERBICIDE	\$2.74	\$3.42	\$4.11
DRY OR GINNING (COMMERCIAL)	\$2.64	\$3.30	\$3.96
FARM TAXES	\$1.72	\$2.15	\$2.57
FARM INSURANCE	\$0.43	\$0.54	\$0.64
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$116.40	\$145.50	\$174.59

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	1072.50	\$0.10	\$0.13	\$0.16
-25% OF BASE YIELD	1237.50	\$0.09	\$0.11	\$0.14
BASE YIELD	1650.00	\$0.07	\$0.09	\$0.11
+25% OF BASE YIELD	2062.50	\$0.06	\$0.07	\$0.08
+35% OF BASE YIELD	2227.50	\$0.05	\$0.06	\$0.08

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RAPESEED (CANOLA), 1991
 ENTERPRISE FILE NO.: RAP9101, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS:

**\$116.40 PER ACRE
YIELD IN POUNDS**

PRODUCER PRICE ESTIMATES		1072.50	1237.50	1650.00	2062.50	2227.50
		-35%	-25%	BASE YIELD	+25%	+35%
		RETURNS PER ACRE				
	\$0.07	(\$33.87)	(\$22.22)	\$4.26	\$36.02	\$47.67
	\$0.09	(\$12.75)	\$2.14	\$36.74	\$76.62	\$91.52
BASE PRICE =	\$0.11	\$8.36	\$26.51	\$69.23	\$117.23	\$135.38
	\$0.13	\$29.48	\$50.87	\$101.71	\$157.84	\$179.23
	\$0.15	\$50.59	\$75.23	\$134.20	\$198.44	\$223.08

BASE COSTS:

**\$145.50 PER ACRE
YIELD IN POUNDS**

PRODUCER PRICE ESTIMATES		1072.50	1237.50	1650.00	2062.50	2227.50
		-35%	-25%	BASE YIELD	+25%	+35%
		RETURNS PER ACRE				
	\$0.07	(\$61.94)	(\$50.40)	(\$24.84)	\$7.32	\$18.86
	\$0.09	(\$40.83)	(\$26.03)	\$7.65	\$47.92	\$62.72
BASE PRICE =	\$0.11	(\$19.71)	(\$1.67)	\$40.13	\$88.53	\$106.57
	\$0.13	\$1.40	\$22.69	\$72.61	\$129.14	\$150.42
	\$0.15	\$22.52	\$47.06	\$105.10	\$169.74	\$194.28

+ 20% DEVIATION FROM BASE COSTS:

**\$174.59 PER ACRE
YIELD IN POUNDS**

PRODUCER PRICE ESTIMATES		1072.50	1237.50	1650.00	2062.50	2227.50
		-35%	-25%	BASE YIELD	+25%	+35%
		RETURNS PER ACRE				
	\$0.07	(\$90.01)	(\$78.58)	(\$53.94)	(\$21.38)	(\$9.94)
	\$0.09	(\$68.90)	(\$54.21)	(\$21.45)	\$19.22	\$33.91
BASE PRICE =	\$0.11	(\$47.79)	(\$29.85)	\$11.03	\$59.83	\$77.77
	\$0.13	(\$26.67)	(\$5.49)	\$43.51	\$100.44	\$121.62
	\$0.15	(\$5.56)	\$18.88	\$76.00	\$141.04	\$165.47

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 124

RICE

SILT LOAM SOILS, EASTERN ARKANSAS



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
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- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

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SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
SEED		\$13.35			
FERTILIZER		\$41.64			
LIME + APPLICATION		\$0.00			
HERBICIDE		\$25.54			
FUNGICIDE		\$14.71			
INSECTICIDE		\$0.00			
DEFOLIANT		\$0.00			
AERIAL APPLICATION		\$28.26			
MACHINERY:					
FUEL, OIL, LUBRICANTS		\$19.79			
REPAIRS		\$22.94			
LABOR		\$10.21			
IRRIGATION:					
FUEL, OIL, LUBRICANTS		\$35.97			
REPAIRS		\$2.86			
IRRIGATION LABOR		\$8.42			
CUSTOM SPREAD		\$2.83			
CUSTOM HAUL		\$20.45			
CUSTOM DRY OR GINNING		\$47.71			
MISCELLANEOUS		\$4.69			
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.		\$13.84			
TOTAL SPECIFIED OPERATING COSTS		\$313.20			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
		YIELD IN BUSHELS			
	78.00	90.00	120.00	150.00	162.00
	\$3.70	\$3.29	\$2.61	\$2.20	\$2.08
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
TRACTORS:					
DEPRECIATION		\$8.21			
INTEREST		\$6.77			
EQUIPMENT:					
DEPRECIATION		\$5.57			
INTEREST		\$3.90			
SPECIAL EQUIPMENT:					
DEPRECIATION		\$20.37			
INTEREST		\$7.47			
MISCELLANEOUS:					
DEPRECIATION		\$0.00			
INTEREST		\$0.00			
IRRIGATION:					
DEPRECIATION		\$8.16			
INTEREST		\$7.62			
TAXES & INSURANCE		\$5.86			
INTEREST		\$0.64			
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS		\$74.57			
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS		\$387.78			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
		YIELD IN BUSHELS			
	78.00	90.00	120.00	150.00	162.00
	\$4.66	\$4.12	\$3.23	\$2.70	\$2.54
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAK-EVEN PRICES.

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9101
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DRY OR GINNING (COMMERCIAL)	\$38.17	\$47.71	\$57.25
DEPRECIATION	\$33.85	\$42.31	\$50.77
FERTILIZER	\$33.31	\$41.64	\$49.96
IRRIGATION FUEL & OIL	\$28.78	\$35.97	\$43.16
AERIAL APPLI. (CUSTOM HIRE)	\$22.61	\$28.26	\$33.92
OWNERSHIP INTEREST	\$21.13	\$26.41	\$31.69
REPAIRS	\$20.64	\$25.80	\$30.96
HERBICIDE	\$20.43	\$25.54	\$30.65
HAUL (CUSTOM HIRE)	\$16.36	\$20.45	\$24.54
MACHINERY FUEL & OIL	\$15.83	\$19.79	\$23.75
HIRED LABOR	\$14.90	\$18.63	\$22.35
FUNGICIDE	\$11.77	\$14.71	\$17.66
INTEREST ON OP. CAP.	\$11.07	\$13.84	\$16.61
SEED	\$10.68	\$13.35	\$16.02
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM TAXES	\$3.75	\$4.68	\$5.62
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FARM INSURANCE	\$0.94	\$1.17	\$1.41
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$310.22	\$387.78	\$465.33

PER UNIT BREAK-EVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAK-EVEN PRICE		
-35% OF BASE YIELD	78.00	\$3.73	\$4.66	\$5.59
-25% OF BASE YIELD	90.00	\$3.29	\$4.12	\$4.94
BASE YIELD	120.00	\$2.59	\$3.23	\$3.88
+25% OF BASE YIELD	150.00	\$2.16	\$2.70	\$3.24
+35% OF BASE YIELD	162.00	\$2.03	\$2.54	\$3.05

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9101
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: **\$310.22 PER ACRE**
YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.90	(\$142.52)	(\$125.25)	(\$82.07)	(\$38.89)	(\$21.62)
	\$2.41	(\$102.60)	(\$79.18)	(\$20.65)	\$37.89	\$61.31
BASE PRICE =	\$2.93	(\$62.67)	(\$33.11)	\$40.78	\$114.67	\$144.23
	\$3.44	(\$22.75)	\$12.95	\$102.20	\$191.45	\$227.15
	\$3.95	\$17.18	\$59.02	\$163.63	\$268.23	\$310.08

BASE COSTS: **\$387.78 PER ACRE**
YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.90	(\$215.23)	(\$199.34)	(\$159.63)	(\$119.91)	(\$104.02)
	\$2.41	(\$175.30)	(\$153.27)	(\$98.20)	(\$43.13)	(\$21.10)
BASE PRICE =	\$2.93	(\$135.38)	(\$107.21)	(\$36.78)	\$33.65	\$61.82
	\$3.44	(\$95.45)	(\$61.14)	\$24.65	\$110.43	\$144.75
	\$3.95	(\$55.52)	(\$15.07)	\$86.07	\$187.21	\$227.67

+ 20% DEVIATION FROM BASE COSTS: **\$465.33 PER ACRE**
YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.90	(\$287.93)	(\$273.43)	(\$237.18)	(\$200.93)	(\$186.43)
	\$2.41	(\$248.01)	(\$227.37)	(\$175.76)	(\$124.15)	(\$103.51)
BASE PRICE =	\$2.93	(\$208.08)	(\$181.30)	(\$114.33)	(\$47.37)	(\$20.58)
	\$3.44	(\$168.16)	(\$135.23)	(\$52.91)	\$29.41	\$62.34
	\$3.95	(\$128.23)	(\$89.16)	\$8.52	\$106.20	\$145.27

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9101
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.00	\$2.99	\$3.71	\$2.62	\$2.37	\$0.54	\$12.22
4	4	CUSTOM APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	4	FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.00	\$1.33	\$1.36	\$1.39	\$1.06	\$0.24	\$5.38
6	4	BED CONDITIONER	20.0	155.0	8.727	1.00	\$1.15	\$1.37	\$1.13	\$0.90	\$0.20	\$4.75
7	4	GRAIN DRILL	20.0	140.0	8.145	1.00	\$1.65	\$1.33	\$2.25	\$1.43	\$0.33	\$6.98
8	4	ROLLER	27.0	140.0	16.691	1.00	\$0.47	\$0.65	\$0.77	\$0.75	\$0.17	\$2.80
9	4	LASER SURVEY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
10	4	DITCHER	3.0	140.0	0.436	0.01	\$0.15	\$0.25	\$0.33	\$0.22	\$0.05	\$0.99
11	4	LEVEE DISK	9.0	155.0	4.800	0.30	\$0.49	\$0.75	\$0.57	\$0.43	\$0.10	\$2.33
12	4	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.10	\$0.19	\$0.25	\$0.23	\$0.16	\$0.04	\$0.86
13	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.05	\$0.17	\$0.26	\$0.18	\$0.16	\$0.04	\$0.80
	5	LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.05	\$0.04	\$0.06	\$0.11	\$0.07	\$0.02	\$0.28
15	5	APPLY HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	5	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	5	APPLY HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	5	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	6	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	HERBICIDE	0.0	0.0	0.000	0.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22	7	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	7	APP. FUNG. (TREAT 50% AC)	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FUNGICIDE	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24	7	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	8	APP. FUNG. (TREAT 50% AC)	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8	FUNGICIDE	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	8	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
27	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.90	\$8.73	\$4.74	\$18.97	\$6.22	\$1.41	\$38.08
	9	COMBINE, 4WD, DOWN RICE	20.0	190.0	1.697	0.10	\$1.75	\$0.95	\$3.39	\$1.24	\$0.28	\$7.62
28	9	GRAIN BUGGY, 350 BU.	8.3	175.0	4.024	0.39	\$1.10	\$1.30	\$1.04	\$0.86	\$0.19	\$4.49
29	9	CUSTOM HAULING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
30	9	CUSTOM DRYING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
31	10	LEVEE DISK	9.0	155.0	4.800	0.20	\$0.33	\$0.50	\$0.38	\$0.28	\$0.06	\$1.55
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPECIFIED INTEREST												
TOTAL SPECIFIED COSTS							\$22.94	\$19.79	\$34.14	\$18.14	\$4.12	\$99.13

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9101
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.47	\$5.46
2								0.00%	\$0.00		\$0.47	\$5.46
3								0.00%	\$0.00		\$1.52	\$13.74
4	CSTM AP FERT BY GRND POTASH	0-0-60	ACRE POUND	\$2.833 \$0.083	1.000 100.000			100.00% 100.00%	\$2.83 \$8.30		\$0.00	\$2.83 \$8.30
5								0.00%	\$0.00		\$0.56	\$5.94
6								0.00%	\$0.00		\$0.63	\$5.39
7	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$12.13		\$1.30	\$20.41
8								0.00%	\$0.00		\$0.33	\$3.13
9	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
10								0.00%	\$0.00		\$0.13	\$1.12
11								0.00%	\$0.00		\$0.34	\$2.68
12	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$1.21		\$0.22	\$2.30
13								0.00%	\$0.00		\$0.69	\$1.49
	LEVEE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
14								0.00%	\$0.00		\$0.16	\$0.44
15	CSTM AP PROP. BY AIR PROPANIL	4LB/GAL	ACRE PINT	\$4.250 \$2.106	1.000 6.000			100.00% 100.00%	\$4.25 \$12.64		\$0.00	\$4.25 \$12.64
16	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.0425 \$0.113	165.000 165.000			100.00% 100.00%	\$7.01 \$18.65		\$0.00	\$7.01 \$18.65
17	CSTM AP PROP. BY AIR PROPANIL	4LB/GAL	ACRE PINT	\$4.250 \$2.106	1.000 6.000			100.00% 100.00%	\$4.25 \$12.64		\$0.00	\$4.25 \$12.64
18	FLOOD IRRIGATION		AC-IN.	\$1.549	4.000			100.00%	\$6.20	\$2.30	\$0.00	\$8.49
19	FLOOD IRRIGATION		AC-IN.	\$1.549	6.000			100.00%	\$9.29	\$3.45	\$0.00	\$12.74
20	CSTM LEVEE SPRAYER 2,4-D	4LB/GAL	ACRE PINT	\$1.750 \$1.338	1.000 2.000			100.00% 100.00%	\$1.75 \$0.27		\$0.00	\$1.75 \$0.27
21	CSTM AP FERT. BY AIR UREA	46%	ACRE POUND	\$4.250 \$0.113	1.000 65.000			100.00% 100.00%	\$4.25 \$7.35		\$0.00	\$4.25 \$7.35
22	CSTM AP FERT. BY AIR UREA	46%	ACRE POUND	\$4.250 \$0.113	1.000 65.000			100.00% 100.00%	\$4.25 \$7.35		\$0.00	\$4.25 \$7.35
23	CSTM AP FUNG. BY AIR BENLATE	50 WP	ACRE POUND	\$4.250 \$14.713	1.000 1.000			100.00% 100.00%	\$2.13 \$7.36		\$0.00	\$2.13 \$7.36
24	FLOOD IRRIGATION		AC-IN.	\$1.549	12.500			100.00%	\$19.36	\$7.18	\$0.00	\$26.54
25	CSTM AP FUNG. BY AIR BENLATE	50 WP	ACRE POUND	\$4.250 \$14.713	1.000 1.000			100.00% 100.00%	\$2.13 \$7.36		\$0.00	\$2.13 \$7.36
26	FLOOD IRRIGATION		AC-IN.	\$1.549	8.000			100.00%	\$12.39	\$4.60	\$0.00	\$16.99
27								0.00%	\$0.00		\$1.63	\$39.71
								0.00%	\$0.00		\$0.33	\$7.94
28								0.00%	\$0.00		\$1.20	\$5.69
29	CUSTOM HAULING		BUSHEL	\$0.150	136.320			100.00%	\$20.45		\$0.00	\$20.45
30	CUSTOM DRYING		BUSHEL	\$0.350	136.320			100.00%	\$47.71		\$0.00	\$47.71
31								0.00%	\$0.00		\$0.23	\$1.78
								0.00%	\$0.00		\$0.00	\$0.00
												\$14.48
									\$246.43	\$17.52	\$10.21	\$387.78

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, Non-Towable, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, Non-Towable, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, Non-Towable, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

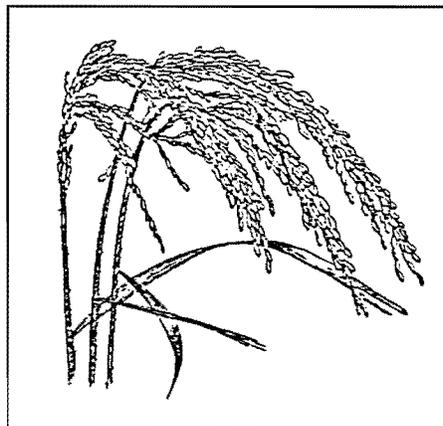
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 125

RICE

CLAY SOILS, EASTERN ARKANSAS



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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

Ronnie S. Helms, Chairman	Ford L. Baldwin
Raymond C. Benz	Albert A. Bivings
Nathan Slaton	Charlie Guy
Gary Huitink	Donald R. Johnson
James J. Kimbrough	John Langston
M.C. McDaniel	H.J. Mascagni
Woody N. Miley	Roy N. Sharp
Phil L. Tacker	Tony E. Windham

THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
SEED	\$16.05				
FERTILIZER	\$33.34				
LIME + APPLICATION	\$0.00				
HERBICIDE	\$41.99				
FUNGICIDE	\$14.71				
INSECTICIDE	\$0.00				
DEFOLIANT	\$0.00				
AERIAL APPLICATION	\$28.26				
MACHINERY:					
FUEL, OIL, LUBRICANTS	\$19.79				
REPAIRS	\$22.94				
LABOR	\$10.21				
IRRIGATION:					
FUEL, OIL, LUBRICANTS	\$39.67				
REPAIRS	\$2.15				
IRRIGATION LABOR	\$11.04				
CUSTOM SPREAD	\$0.00				
CUSTOM HAUL	\$20.45				
CUSTOM DRY OR GINNING	\$47.71				
MISCELLANEOUS	\$4.69				
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.	\$14.59				
TOTAL SPECIFIED OPERATING COSTS	\$327.58				
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
	YIELD IN BUSHELS				
	78.00	90.00	120.00	150.00	162.00
	\$3.89	\$3.45	\$2.73	\$2.30	\$2.17
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
TRACTORS:					
DEPRECIATION	\$8.21				
INTEREST	\$6.77				
EQUIPMENT:					
DEPRECIATION	\$5.57				
INTEREST	\$3.90				
SPECIAL EQUIPMENT:					
DEPRECIATION	\$20.37				
INTEREST	\$7.47				
MISCELLANEOUS:					
DEPRECIATION	\$0.00				
INTEREST	\$0.00				
IRRIGATION:					
DEPRECIATION	\$6.09				
INTEREST	\$5.62				
TAXES & INSURANCE	\$5.40				
INTEREST	\$0.59				
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS	\$69.99				
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$397.57				
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
	YIELD IN BUSHELS				
	78.00	90.00	120.00	150.00	162.00
	\$4.79	\$4.22	\$3.31	\$2.77	\$2.60
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9102
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DRY OR GINNING (COMMERCIAL)	\$38.17	\$47.71	\$57.25
HERBICIDE	\$33.59	\$41.99	\$50.39
DEPRECIATION	\$32.19	\$40.23	\$48.28
IRRIGATION FUEL & OIL	\$31.74	\$39.67	\$47.60
FERTILIZER	\$26.67	\$33.34	\$40.00
AERIAL APPLI. (CUSTOM HIRE)	\$22.61	\$28.26	\$33.92
REPAIRS	\$20.07	\$25.08	\$30.10
OWNERSHIP INTEREST	\$19.48	\$24.35	\$29.23
HIRED LABOR	\$17.00	\$21.25	\$25.50
HAUL (CUSTOM HIRE)	\$16.36	\$20.45	\$24.54
MACHINERY FUEL & OIL	\$15.83	\$19.79	\$23.75
SEED	\$12.84	\$16.05	\$19.26
FUNGICIDE	\$11.77	\$14.71	\$17.66
INTEREST ON OP. CAP.	\$11.67	\$14.59	\$17.51
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM TAXES	\$3.46	\$4.32	\$5.18
FARM INSURANCE	\$0.86	\$1.08	\$1.30
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$318.06	\$397.57	\$477.08

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	78.00	\$3.83	\$4.79	\$5.74
-25% OF BASE YIELD	90.00	\$3.38	\$4.22	\$5.07
BASE YIELD	120.00	\$2.65	\$3.31	\$3.98
+25% OF BASE YIELD	150.00	\$2.21	\$2.77	\$3.32
+35% OF BASE YIELD	162.00	\$2.08	\$2.60	\$3.12

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9102
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$318.06 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.90	(\$150.36)	(\$133.09)	(\$89.91)	(\$46.73)	(\$29.45)
	\$2.41	(\$110.43)	(\$87.02)	(\$28.48)	\$30.06	\$53.47
BASE PRICE =	\$2.93	(\$70.51)	(\$40.95)	\$32.94	\$106.84	\$136.39
	\$3.44	(\$30.58)	\$5.12	\$94.37	\$183.62	\$219.32
	\$3.95	\$9.35	\$51.19	\$155.79	\$260.40	\$302.24

BASE COSTS: \$397.57 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.90	(\$225.02)	(\$209.14)	(\$169.42)	(\$129.70)	(\$113.82)
	\$2.41	(\$185.10)	(\$163.07)	(\$108.00)	(\$52.92)	(\$30.89)
BASE PRICE =	\$2.93	(\$145.17)	(\$117.00)	(\$46.57)	\$23.86	\$52.03
	\$3.44	(\$105.24)	(\$70.93)	\$14.85	\$100.64	\$134.95
	\$3.95	(\$65.32)	(\$24.86)	\$76.28	\$177.42	\$217.88

+ 20% DEVIATION FROM BASE COSTS: \$477.08 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.90	(\$299.69)	(\$285.19)	(\$248.93)	(\$212.68)	(\$198.18)
	\$2.41	(\$259.76)	(\$239.12)	(\$187.51)	(\$135.90)	(\$115.26)
BASE PRICE =	\$2.93	(\$219.83)	(\$193.05)	(\$126.08)	(\$59.12)	(\$32.33)
	\$3.44	(\$179.91)	(\$146.98)	(\$64.66)	\$17.66	\$50.59
	\$3.95	(\$139.98)	(\$100.91)	(\$3.23)	\$94.44	\$133.51

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9102
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: FLOOD

							MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	REPAIRS & MAINTENANCE	FUEL, OIL & LUB	DEPRECIATION	INTEREST	TAXES & INSURANCE	TOTAL COST
							(H)	(I)	(J)	(K)	(L)	(M)
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.00	\$2.99	\$3.71	\$2.62	\$2.37	\$0.54	\$12.22
4	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.00	\$1.33	\$1.36	\$1.39	\$1.06	\$0.24	\$5.38
5	4	BED CONDITIONER	20.0	155.0	8.727	1.00	\$1.15	\$1.37	\$1.13	\$0.90	\$0.20	\$4.75
6	4	GRAIN DRILL	20.0	140.0	8.145	1.00	\$1.85	\$1.33	\$2.25	\$1.43	\$0.33	\$6.98
7	4	ROLLER	27.0	140.0	16.691	1.00	\$0.47	\$0.65	\$0.77	\$0.75	\$0.17	\$2.80
8	4	LASER SURVEY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	4	DITCHER	3.0	140.0	0.436	0.01	\$0.15	\$0.25	\$0.33	\$0.22	\$0.05	\$0.99
10	4	LEVEE DISK	9.0	155.0	4.800	0.30	\$0.49	\$0.75	\$0.57	\$0.43	\$0.10	\$2.33
11	4	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.10	\$0.19	\$0.25	\$0.23	\$0.16	\$0.04	\$0.86
12	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.05	\$0.17	\$0.26	\$0.18	\$0.16	\$0.04	\$0.80
	5	LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.05	\$0.04	\$0.06	\$0.11	\$0.07	\$0.02	\$0.28
14	5	APPLY HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	5	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	5	APPLY HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	5	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	6	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	HERBICIDE	0.0	0.0	0.000	0.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22	7	APP. FUNG. (TREAT 50% AC)	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FUNGICIDE	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	7	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24	8	APP. FUNG. (TREAT 50% AC)	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8	FUNGICIDE	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	8	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.90	\$8.73	\$4.74	\$16.97	\$6.22	\$1.41	\$38.08
	9	COMBINE, 4WD, DOWN RICE	20.0	190.0	1.697	0.10	\$1.75	\$0.95	\$3.39	\$1.24	\$0.28	\$7.62
27	9	GRAIN BUGGY, 350 BU.	8.3	175.0	4.024	0.39	\$1.10	\$1.30	\$1.04	\$0.86	\$0.19	\$4.49
28	9	CUSTOM HAULING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
29	9	CUSTOM DRYING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
30	10	LEVEE DISK	9.0	155.0	4.800	0.20	\$0.33	\$0.50	\$0.38	\$0.28	\$0.06	\$1.55
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPECIFIED INTEREST												
TOTAL SPECIFIED COSTS							\$22.94	\$19.79	\$34.14	\$18.14	\$4.12	\$99.13

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, Non-Towable, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, Non-Towable, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, Non-Towable, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 126

RICE

GRAND PRAIRIE SOILS,
GRAND PRAIRE REGION, ARKANSAS



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

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Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

Ronnie S. Helms, Chairman	Ford L. Baldwin
Raymond C. Benz	Albert A. Bivings
Nathan Slaton	Charlie Guy
Gary Huitink	Donald R. Johnson
James J. Kimbrough	John Langston
M.C. McDaniel	H.J. Mascagni
Woody N. Miley	Roy N. Sharp
Phil L. Tacker	Tony E. Windham

THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	PER ACRE COST	YOUR COST			
SEED	\$13.35	_____			
FERTILIZER	\$33.34	_____			
LIME + APPLICATION	\$0.00	_____			
HERBICIDE	\$25.54	_____			
FUNGICIDE	\$14.71	_____			
INSECTICIDE	\$0.00	_____			
DEFOLIANT	\$0.00	_____			
AERIAL APPLICATION	\$28.26	_____			
MACHINERY:					
FUEL, OIL, LUBRICANTS	\$19.86	_____			
REPAIRS	\$23.00	_____			
LABOR	\$10.28	_____			
IRRIGATION:					
FUEL, OIL, LUBRICANTS	\$57.44	_____			
REPAIRS	\$6.51	_____			
IRRIGATION LABOR	\$6.90	_____			
CUSTOM SPREAD	\$0.00	_____			
CUSTOM HAUL	\$21.64	_____			
CUSTOM DRY OR GINNING	\$50.50	_____			
MISCELLANEOUS	\$4.69	_____			
CROP INSURANCE PREMIUM		_____			
OTHER		_____			
INTEREST ON OP. CAP.	\$14.60	_____			
TOTAL SPECIFIED OPERATING COSTS	\$330.62	_____			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
	YIELD IN BUSHELS				
	82.55	95.25	127.00	158.75	171.45
	\$3.69	\$3.28	\$2.60	\$2.20	\$2.08
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	PER ACRE COST	YOUR COST			
TRACTORS:					
DEPRECIATION	\$8.25	_____			
INTEREST	\$6.81	_____			
EQUIPMENT:					
DEPRECIATION	\$5.58	_____			
INTEREST	\$3.92	_____			
SPECIAL EQUIPMENT:					
DEPRECIATION	\$20.37	_____			
INTEREST	\$7.47	_____			
MISCELLANEOUS:					
DEPRECIATION	\$0.00	_____			
INTEREST	\$0.00	_____			
IRRIGATION:					
DEPRECIATION	\$20.08	_____			
INTEREST	\$18.17	_____			
TAXES & INSURANCE	\$8.26	_____			
INTEREST	\$0.91	_____			
OVERHEAD LABOR		_____			
OTHER OVERHEAD		_____			
LAND & PROPERTY TAX		_____			
MANAGEMENT		_____			
TOTAL SPECIFIED OWNERSHIP COSTS	\$99.83	_____			
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$430.45	_____			
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
	YIELD IN BUSHELS				
	82.55	95.25	127.00	158.75	171.45
	\$4.90	\$4.33	\$3.39	\$2.83	\$2.66
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAK-EVEN PRICES.

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9103
 LOCATION: GRAND PRAIRIE REGION
 SOILS TYPE: GRAND PRAIRIE SOILS
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
IRRIGATION FUEL & OIL	\$45.95	\$57.44	\$68.92
DEPRECIATION	\$43.43	\$54.29	\$65.15
DRY OR GINNING (COMMERCIAL)	\$40.40	\$50.50	\$60.59
OWNERSHIP INTEREST	\$29.82	\$37.28	\$44.73
FERTILIZER	\$26.67	\$33.34	\$40.00
REPAIRS	\$23.61	\$29.51	\$35.41
AERIAL APPL. (CUSTOM HIRE)	\$22.61	\$28.26	\$33.92
HERBICIDE	\$20.43	\$25.54	\$30.65
HAUL (CUSTOM HIRE)	\$17.31	\$21.64	\$25.97
MACHINERY FUEL & OIL	\$15.89	\$19.86	\$23.84
HIRED LABOR	\$13.75	\$17.18	\$20.62
FUNGICIDE	\$11.77	\$14.71	\$17.66
INTEREST ON OP. CAP.	\$11.68	\$14.60	\$17.52
SEED	\$10.68	\$13.35	\$16.02
FARM TAXES	\$5.29	\$6.61	\$7.93
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM INSURANCE	\$1.32	\$1.65	\$1.98
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$344.36	\$430.45	\$516.54

PER UNIT BREAK-EVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAK-EVEN PRICE		
-35% OF BASE YIELD	82.55	\$3.92	\$4.90	\$5.88
-25% OF BASE YIELD	95.25	\$3.46	\$4.33	\$5.19
BASE YIELD	127.00	\$2.71	\$3.39	\$4.07
+25% OF BASE YIELD	158.75	\$2.26	\$2.83	\$3.39
+35% OF BASE YIELD	171.45	\$2.13	\$2.66	\$3.19

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9103
 LOCATION: GRAND PRAIRIE REGION
 SOILS TYPE: GRAND PRAIRIE SOILS
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS:		\$344.36 PER ACRE YIELD IN BUSHELS				
PRODUCER PRICE ESTIMATES		82.55	95.25	127.00	158.75	171.45
		-35%	-25%	BASE YIELD	+25%	+35%
RETURNS PER ACRE						
BASE PRICE =	\$1.90	(\$166.88)	(\$148.60)	(\$102.90)	(\$57.20)	(\$38.92)
	\$2.41	(\$124.62)	(\$99.84)	(\$37.89)	\$24.06	\$48.84
	\$2.93	(\$82.37)	(\$51.09)	\$27.12	\$105.32	\$136.60
	\$3.44	(\$40.11)	(\$2.33)	\$92.12	\$186.58	\$224.36
	\$3.95	\$2.14	\$46.43	\$157.13	\$267.84	\$312.12
BASE COSTS:		\$430.45 PER ACRE YIELD IN BUSHELS				
PRODUCER PRICE ESTIMATES		82.55	95.25	127.00	158.75	171.45
		-35%	-25%	BASE YIELD	+25%	+35%
RETURNS PER ACRE						
BASE PRICE =	\$1.90	(\$247.84)	(\$231.02)	(\$188.99)	(\$146.96)	(\$130.14)
	\$2.41	(\$205.58)	(\$182.27)	(\$123.98)	(\$65.70)	(\$42.38)
	\$2.93	(\$163.32)	(\$133.51)	(\$58.97)	\$15.56	\$45.38
	\$3.44	(\$121.07)	(\$84.75)	\$6.04	\$96.82	\$133.14
	\$3.95	(\$78.81)	(\$36.00)	\$71.04	\$178.08	\$220.90
+ 20% DEVIATION FROM BASE COSTS:		\$516.54 PER ACRE YIELD IN BUSHELS				
PRODUCER PRICE ESTIMATES		82.55	95.25	127.00	158.75	171.45
		-35%	-25%	BASE YIELD	+25%	+35%
RETURNS PER ACRE						
BASE PRICE =	\$1.90	(\$328.79)	(\$313.45)	(\$275.08)	(\$236.71)	(\$221.37)
	\$2.41	(\$286.54)	(\$264.69)	(\$210.07)	(\$155.45)	(\$133.60)
	\$2.93	(\$244.28)	(\$215.93)	(\$145.06)	(\$74.19)	(\$45.84)
	\$3.44	(\$202.03)	(\$167.18)	(\$80.05)	\$7.07	\$41.92
	\$3.95	(\$159.77)	(\$118.42)	(\$15.05)	\$88.33	\$129.68

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9103
 LOCATION: GRAND PRAIRIE REGION
 SOILS TYPE: GRAND PRAIRIE SOILS
 IRRIGATION METHOD: FLOOD

MACHINERY COST

OPER- ATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.00	\$2.99	\$3.71	\$2.62	\$2.37	\$0.54	\$12.22
4	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.00	\$1.33	\$1.36	\$1.39	\$1.06	\$0.24	\$5.38
5	4	BED CONDITIONER	20.0	155.0	8.727	1.00	\$1.15	\$1.37	\$1.13	\$0.90	\$0.20	\$4.75
6	4	GRAIN DRILL	20.0	140.0	8.145	1.00	\$1.65	\$1.33	\$2.25	\$1.43	\$0.33	\$6.98
7	4	ROLLER	27.0	140.0	16.691	1.00	\$0.47	\$0.65	\$0.77	\$0.75	\$0.17	\$2.80
8	4	LASER SURVEY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	4	DITCHER	3.0	140.0	0.436	0.01	\$0.15	\$0.25	\$0.33	\$0.22	\$0.05	\$0.99
10	4	LEVEE DISK	9.0	155.0	4.800	0.30	\$0.49	\$0.75	\$0.57	\$0.43	\$0.10	\$2.33
11	4	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.10	\$0.19	\$0.25	\$0.23	\$0.16	\$0.04	\$0.86
12	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.05	\$0.17	\$0.26	\$0.18	\$0.16	\$0.04	\$0.80
		5 LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.05	\$0.04	\$0.06	\$0.11	\$0.07	\$0.02	\$0.28
14	5	APPLY HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		5 HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	5	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		5 FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	5	APPLY HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		5 HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	5	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	6	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		7 HERBICIDE	0.0	0.0	0.000	0.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		7 FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		7 FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22	7	APP. FUNG. (TREAT 50% AC)	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		7 FUNGICIDE	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	7	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24	8	APP. FUNG. (TREAT 50% AC)	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		8 FUNGICIDE	0.0	0.0	0.000	0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	8	IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.90	\$8.73	\$4.74	\$16.97	\$6.22	\$1.41	\$38.08
		9 COMBINE, 4WD, DOWN RICE	20.0	190.0	1.697	0.10	\$1.75	\$0.95	\$3.39	\$1.24	\$0.28	\$7.62
27	9	GRAIN BUGGY, 350 BU.	8.3	175.0	4.024	0.41	\$1.16	\$1.38	\$1.10	\$0.91	\$0.21	\$4.76
28	9	CUSTOM HAULING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
29	9	CUSTOM DRYING	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
30	10	LEVEE DISK	9.0	155.0	4.800	0.20	\$0.33	\$0.50	\$0.38	\$0.28	\$0.06	\$1.55
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		SPECIFIED INTEREST										
		TOTAL SPECIFIED COSTS					\$23.00	\$19.86	\$34.20	\$18.19	\$4.13	\$99.40

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, 1991
 ENTERPRISE FILE NO.: RC9103
 LOCATION: GRAND PRAIRIE REGION
 SOILS TYPE: GRAND PRAIRIE SOILS
 IRRIGATION METHOD: FLOOD

MATERIAL AND/OR MISCELLANEOUS

OPERATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMULATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPERATING COST (J)	OWNER-SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.47	\$5.46
2								0.00%	\$0.00		\$0.47	\$5.46
3								0.00%	\$0.00		\$1.52	\$13.74
4								0.00%	\$0.00		\$0.56	\$5.94
5								0.00%	\$0.00		\$0.63	\$5.39
6	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$12.13		\$1.30	\$20.41
7								0.00%	\$0.00		\$0.33	\$3.13
8	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
9								0.00%	\$0.00		\$0.13	\$1.12
10								0.00%	\$0.00		\$0.34	\$2.68
11	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$1.21		\$0.22	\$2.30
12								0.00%	\$0.00		\$0.69	\$1.49
	LEVEE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
13								0.00%	\$0.00		\$0.16	\$0.44
14	CSTM AP PROP. BY AIR		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PROPANIL	4LB/GAL	PINT	\$2.106	6.000			100.00%	\$12.64		\$0.00	\$12.64
15	CSTM AP FERT. BY AIR		POUND	\$0.0425	165.000			100.00%	\$7.01		\$0.00	\$7.01
	UREA	46%	POUND	\$0.113	165.000			100.00%	\$18.65		\$0.00	\$18.65
16	CSTM AP PROP. BY AIR		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	PROPANIL	4LB/GAL	PINT	\$2.106	6.000			100.00%	\$12.64		\$0.00	\$12.64
17	FLOOD IRRIGATION		AC-IN.	\$2.834	3.500			100.00%	\$9.92	\$5.93	\$0.00	\$15.85
18	FLOOD IRRIGATION		AC-IN.	\$2.834	5.000			100.00%	\$14.17	\$8.48	\$0.00	\$22.65
19	CSTM LEVEE SPRAYER		ACRE	\$1.750	1.000			100.00%	\$1.75		\$0.00	\$1.75
	2,4-D	4LB/GAL	PINT	\$1.338	2.000			100.00%	\$0.27		\$0.00	\$0.27
20	CSTM AP FERT. BY AIR		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	UREA	46%	POUND	\$0.113	65.000			100.00%	\$7.35		\$0.00	\$7.35
21	CSTM AP FERT. BY AIR		ACRE	\$4.250	1.000			100.00%	\$4.25		\$0.00	\$4.25
	UREA	46%	POUND	\$0.113	65.000			100.00%	\$7.35		\$0.00	\$7.35
22	CSTM AP FUNG. BY AIR		ACRE	\$4.250	1.000			100.00%	\$2.13		\$0.00	\$2.13
	BENLATE	50 WP	POUND	\$14.713	1.000			100.00%	\$7.36		\$0.00	\$7.36
23	FLOOD IRRIGATION		AC-IN.	\$2.834	10.500			100.00%	\$29.76	\$17.80	\$0.00	\$47.56
24	CSTM AP FUNG. BY AIR		ACRE	\$4.250	1.000			100.00%	\$2.13		\$0.00	\$2.13
	BENLATE	50 WP	POUND	\$14.713	1.000			100.00%	\$7.36		\$0.00	\$7.36
25	FLOOD IRRIGATION		AC-IN.	\$2.834	6.000			100.00%	\$17.00	\$10.17	\$0.00	\$27.18
26								0.00%	\$0.00		\$1.63	\$39.71
								0.00%	\$0.00		\$0.33	\$7.94
27								0.00%	\$0.00		\$1.27	\$6.03
28	CUSTOM HAULING		BUSHEL	\$0.150	144.272			100.00%	\$21.64		\$0.00	\$21.64
29	CUSTOM DRYING		BUSHEL	\$0.350	144.272			100.00%	\$50.50		\$0.00	\$50.50
30								0.00%	\$0.00		\$0.23	\$1.78
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$15.51
									\$262.87	\$42.39	\$10.28	\$430.45

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, Non-Towable, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, Non-Towable, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, Non-Towable, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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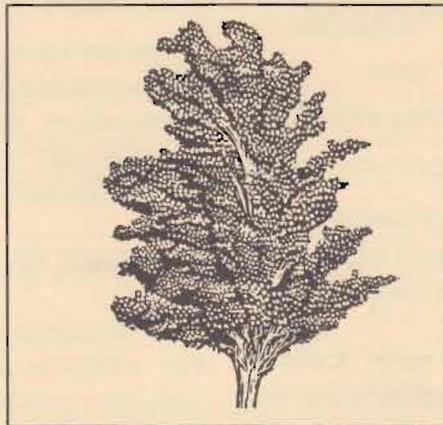
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 139

GRAIN SORGHUM

LOAMY SOILS



AUTHORS

CLYDE A. STUART
TONY E. WHINDHAM
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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Nathan McKinney, Chairman
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Roy N. Sharp
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Ford L. Baldwin
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Jerry Don Clark
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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$5.26	_____
FERTILIZER	\$36.54	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$10.23	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$12.73	_____
REPAIRS	\$15.96	_____
LABOR	\$6.48	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$5.67	_____
CUSTOM HAUL	\$10.99	_____
CUSTOM DRY OR GINNING	\$14.35	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$5.71	_____
TOTAL SPECIFIED OPERATING COSTS	\$123.92	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN CWT.

	26.00	30.00	40.00	50.00	54.00
	\$4.42	\$3.92	\$3.10	\$2.61	\$2.46

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$5.33	_____
INTEREST	\$4.40	_____
EQUIPMENT:		
DEPRECIATION	\$5.52	_____
INTEREST	\$2.85	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.37	_____
INTEREST	\$4.16	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$2.59	_____
INTEREST	\$0.29	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$36.50	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS

\$160.42

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN CWT.

	26.00	30.00	40.00	50.00	54.00
	\$5.82	\$5.13	\$4.01	\$3.34	\$3.14

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9101
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$29.23	\$36.54	\$43.85
DEPRECIATION	\$17.77	\$22.21	\$26.65
REPAIRS	\$12.77	\$15.96	\$19.16
DRY OR GINNING (COMMERCIAL)	\$11.48	\$14.35	\$17.22
MACHINERY FUEL & OIL	\$10.18	\$12.73	\$15.28
OWNERSHIP INTEREST	\$9.36	\$11.70	\$14.03
HAUL (CUSTOM HIRE)	\$8.79	\$10.99	\$13.19
HERBICIDE	\$8.19	\$10.23	\$12.28
HIRED LABOR	\$5.18	\$6.48	\$7.77
INTEREST ON OP. CAP.	\$4.57	\$5.71	\$6.85
SPREAD (CUSTOM HIRE)	\$4.53	\$5.67	\$6.80
SEED	\$4.20	\$5.26	\$6.31
FARM TAXES	\$1.66	\$2.07	\$2.49
FARM INSURANCE	\$0.41	\$0.52	\$0.62
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$128.33	\$160.42	\$192.50

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	26.00	\$4.66	\$5.82	\$6.99
-25% OF BASE YIELD	30.00	\$4.11	\$5.13	\$6.16
BASE YIELD	40.00	\$3.21	\$4.01	\$4.81
+25% OF BASE YIELD	50.00	\$2.67	\$3.34	\$4.01
+35% OF BASE YIELD	54.00	\$2.51	\$3.14	\$3.77

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9101
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS:

**\$128.33 PER ACRE
YIELD IN CWT.**

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$57.71)	(\$50.04)	(\$30.83)	(\$11.67)	(\$4.00)
	\$3.09	(\$40.65)	(\$30.35)	(\$4.58)	\$21.14	\$31.44
BASE PRICE =	\$3.75	(\$23.58)	(\$10.66)	\$21.67	\$53.95	\$66.87
	\$4.41	(\$6.52)	\$9.03	\$47.92	\$86.76	\$102.31
	\$5.06	\$10.54	\$28.71	\$74.17	\$119.58	\$137.75

BASE COSTS:

**\$160.42 PER ACRE
YIELD IN CWT.**

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$87.98)	(\$80.83)	(\$62.92)	(\$45.06)	(\$37.91)
	\$3.09	(\$70.92)	(\$61.14)	(\$36.67)	(\$12.25)	(\$2.47)
BASE PRICE =	\$3.75	(\$53.85)	(\$41.45)	(\$10.42)	\$20.56	\$32.97
	\$4.41	(\$36.79)	(\$21.76)	\$15.83	\$53.38	\$68.41
	\$5.06	(\$19.73)	(\$2.08)	\$42.08	\$86.19	\$103.84

+ 20% DEVIATION FROM BASE COSTS:

**\$192.50 PER ACRE
YIELD IN CWT.**

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$118.25)	(\$111.62)	(\$95.00)	(\$78.45)	(\$71.81)
	\$3.09	(\$101.19)	(\$91.93)	(\$68.75)	(\$45.63)	(\$36.38)
BASE PRICE =	\$3.75	(\$84.13)	(\$72.24)	(\$42.50)	(\$12.82)	(\$0.94)
	\$4.41	(\$67.06)	(\$52.55)	(\$16.25)	\$19.99	\$34.50
	\$5.06	(\$50.00)	(\$32.87)	\$10.00	\$52.80	\$69.94

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
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AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
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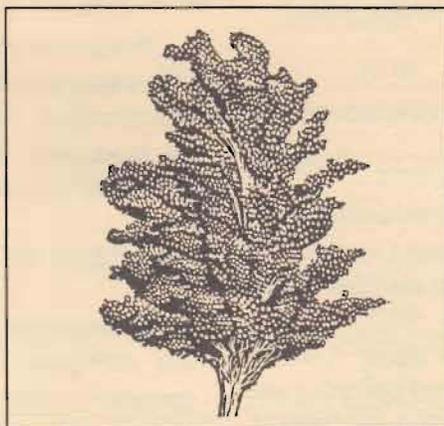
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 140

GRAIN SORGHUM

LOAMY SOILS, FLOOD IRRIGATION



AUTHORS

CLYDE A. STUART
TONY E. WHINDHAM
BILLY E. HERRINGTON, JR.
ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$5.26	_____
FERTILIZER	\$41.62	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$10.23	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$13.80	_____
REPAIRS	\$16.63	_____
LABOR	\$7.04	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$7.93	_____
REPAIRS	\$2.15	_____
IRRIGATION LABOR	\$4.42	_____
CUSTOM SPREAD	\$5.67	_____
CUSTOM HAUL	\$16.51	_____
CUSTOM DRY OR GINNING	\$21.56	_____
MISCELLANEOUS	\$1.25	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$7.29	_____
TOTAL SPECIFIED OPERATING COSTS	\$161.34	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$3.79	\$3.37	\$2.69	\$2.28	\$2.16

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$5.92	_____
INTEREST	\$4.88	_____
EQUIPMENT:		
DEPRECIATION	\$5.75	_____
INTEREST	\$3.00	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.37	_____
INTEREST	\$4.16	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$6.09	_____
INTEREST	\$5.62	_____
TAXES & INSURANCE	\$4.02	_____
INTEREST	\$0.44	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$51.26	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS

\$212.59

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$5.10	\$4.51	\$3.54	\$2.96	\$2.79

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9102
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$33.29	\$41.62	\$49.94
DEPRECIATION	\$23.30	\$29.13	\$34.95
DRY OR GINNING (COMMERCIAL)	\$17.25	\$21.56	\$25.87
REPAIRS	\$15.02	\$18.78	\$22.53
OWNERSHIP INTEREST	\$14.49	\$18.11	\$21.73
HAUL (CUSTOM HIRE)	\$13.21	\$16.51	\$19.81
MACHINERY FUEL & OIL	\$11.04	\$13.80	\$16.56
HIRED LABOR	\$9.16	\$11.45	\$13.75
HERBICIDE	\$8.19	\$10.23	\$12.28
IRRIGATION FUEL & OIL	\$6.35	\$7.93	\$9.52
INTEREST ON OP. CAP.	\$5.83	\$7.29	\$8.74
SPREAD (CUSTOM HIRE)	\$4.53	\$5.67	\$6.80
SEED	\$4.20	\$5.26	\$6.31
FARM TAXES	\$2.57	\$3.21	\$3.86
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.64	\$0.80	\$0.96
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$170.08	\$212.59	\$255.11

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	39.00	\$4.08	\$5.10	\$6.12
-25% OF BASE YIELD	45.00	\$3.61	\$4.51	\$5.41
BASE YIELD	60.00	\$2.83	\$3.54	\$4.25
+25% OF BASE YIELD	75.00	\$2.37	\$2.96	\$3.56
+35% OF BASE YIELD	81.00	\$2.23	\$2.79	\$3.35

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9102
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS:

\$170.08 PER ACRE
YIELD IN CWT.

PRODUCER PRICE ESTIMATES						
	39.00	45.00	60.00	75.00	81.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$64.09)	(\$52.58)	(\$23.83)	\$4.97	\$16.48
	\$3.09	(\$38.49)	(\$23.05)	\$15.55	\$54.19	\$69.63
BASE PRICE =	\$3.75	(\$12.90)	\$6.49	\$54.92	\$103.40	\$122.79
	\$4.41	\$12.70	\$36.02	\$94.30	\$152.62	\$175.94
	\$5.06	\$38.29	\$65.55	\$133.67	\$201.84	\$229.10

BASE COSTS:

\$212.59 PER ACRE
YIELD IN CWT.

PRODUCER PRICE ESTIMATES						
	39.00	45.00	60.00	75.00	81.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$103.87)	(\$93.14)	(\$66.34)	(\$39.49)	(\$28.76)
	\$3.09	(\$78.28)	(\$63.61)	(\$26.97)	\$9.72	\$24.39
BASE PRICE =	\$3.75	(\$52.69)	(\$34.08)	\$12.41	\$58.94	\$77.55
	\$4.41	(\$27.09)	(\$4.55)	\$51.78	\$108.16	\$130.70
	\$5.06	(\$1.50)	\$24.98	\$91.16	\$157.38	\$183.86

+ 20% DEVIATION FROM BASE COSTS:

\$255.11 PER ACRE
YIELD IN CWT.

PRODUCER PRICE ESTIMATES						
	39.00	45.00	60.00	75.00	81.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$143.66)	(\$133.71)	(\$108.86)	(\$83.96)	(\$74.00)
	\$3.09	(\$118.07)	(\$104.18)	(\$69.49)	(\$34.74)	(\$20.85)
BASE PRICE =	\$3.75	(\$92.47)	(\$74.65)	(\$30.11)	\$14.48	\$32.31
	\$4.41	(\$66.88)	(\$45.12)	\$9.26	\$63.70	\$85.46
	\$5.06	(\$41.29)	(\$15.58)	\$48.64	\$112.92	\$138.62

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 141

GRAIN SORGHUM

CLAY SOILS



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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Nathan McKinney, Chairman	Ford L. Baldwin
Raymond C. Benz	Albert Bivings
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Charlie Guy	Gary Huitink
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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$5.26	_____
FERTILIZER	\$24.86	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$11.65	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$14.09	_____
REPAIRS	\$17.29	_____
LABOR	\$7.04	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$5.67	_____
CUSTOM HAUL	\$10.99	_____
CUSTOM DRY OR GINNING	\$14.35	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$5.33	_____
TOTAL SPECIFIED OPERATING COSTS	\$116.52	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN CWT.

	26.00	30.00	40.00	50.00	54.00
	\$4.13	\$3.67	\$2.91	\$2.46	\$2.33

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$6.16	_____
INTEREST	\$5.08	_____
EQUIPMENT:		
DEPRECIATION	\$6.08	_____
INTEREST	\$3.22	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.37	_____
INTEREST	\$4.16	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$2.83	_____
INTEREST	\$0.31	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$39.21	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS

\$155.73

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN CWT.

	26.00	30.00	40.00	50.00	54.00
	\$5.64	\$4.98	\$3.89	\$3.24	\$3.05

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9103
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$19.89	\$24.86	\$29.83
DEPRECIATION	\$18.88	\$23.60	\$28.32
REPAIRS	\$13.83	\$17.29	\$20.75
DRY OR GINNING (COMMERCIAL)	\$11.48	\$14.35	\$17.22
MACHINERY FUEL & OIL	\$11.28	\$14.09	\$16.91
OWNERSHIP INTEREST	\$10.22	\$12.78	\$15.33
HERBICIDE	\$9.32	\$11.65	\$13.98
HAUL (CUSTOM HIRE)	\$8.79	\$10.99	\$13.19
HIRED LABOR	\$5.63	\$7.04	\$8.44
SPREAD (CUSTOM HIRE)	\$4.53	\$5.67	\$6.80
INTEREST ON OP. CAP.	\$4.26	\$5.33	\$6.39
SEED	\$4.20	\$5.26	\$6.31
FARM TAXES	\$1.81	\$2.27	\$2.72
FARM INSURANCE	\$0.45	\$0.57	\$0.68
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$124.58	\$155.73	\$186.88

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	26.00	\$4.51	\$5.64	\$6.77
-25% OF BASE YIELD	30.00	\$3.98	\$4.98	\$5.97
BASE YIELD	40.00	\$3.11	\$3.89	\$4.67
+25% OF BASE YIELD	50.00	\$2.60	\$3.24	\$3.89
+35% OF BASE YIELD	54.00	\$2.44	\$3.05	\$3.66

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9103
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS: \$124.58 PER ACRE
 YIELD IN CWT.

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$53.96)	(\$46.29)	(\$27.08)	(\$7.92)	(\$0.25)
	\$3.09	(\$36.90)	(\$26.60)	(\$0.83)	\$24.89	\$35.19
BASE PRICE =	\$3.75	(\$19.83)	(\$6.91)	\$25.42	\$57.70	\$70.62
	\$4.41	(\$2.77)	\$12.78	\$51.67	\$90.51	\$106.06
	\$5.06	\$14.29	\$32.46	\$77.92	\$123.33	\$141.50

BASE COSTS: \$155.73 PER ACRE
 YIELD IN CWT.

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$83.29)	(\$76.14)	(\$58.23)	(\$40.37)	(\$33.22)
	\$3.09	(\$66.23)	(\$56.45)	(\$31.98)	(\$7.56)	\$2.22
BASE PRICE =	\$3.75	(\$49.17)	(\$36.76)	(\$5.73)	\$25.25	\$37.66
	\$4.41	(\$32.10)	(\$17.08)	\$20.52	\$58.06	\$73.09
	\$5.06	(\$15.04)	\$2.61	\$46.77	\$90.88	\$108.53

+ 20% DEVIATION FROM BASE COSTS: \$186.88 PER ACRE
 YIELD IN CWT.

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$112.63)	(\$105.99)	(\$89.38)	(\$72.82)	(\$66.19)
	\$3.09	(\$95.56)	(\$86.30)	(\$63.13)	(\$40.01)	(\$30.75)
BASE PRICE =	\$3.75	(\$78.50)	(\$66.62)	(\$36.88)	(\$7.20)	\$4.69
	\$4.41	(\$61.44)	(\$46.93)	(\$10.63)	\$25.62	\$40.12
	\$5.06	(\$44.38)	(\$27.24)	\$15.62	\$58.43	\$75.56

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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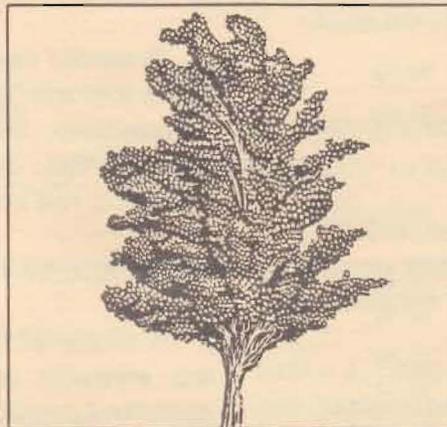
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 142

GRAIN SORGHUM

CLAY SOILS, FLOOD IRRIGATION



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Nathan McKinney, Chairman
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Phil L. Tacker

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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$5.26	_____
FERTILIZER	\$29.95	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$11.65	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$15.16	_____
REPAIRS	\$17.96	_____
LABOR	\$7.60	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$7.93	_____
REPAIRS	\$2.15	_____
IRRIGATION LABOR	\$4.42	_____
CUSTOM SPREAD	\$5.67	_____
CUSTOM HAUL	\$16.51	_____
CUSTOM DRY OR GINNING	\$21.56	_____
MISCELLANEOUS	\$1.25	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$6.90	_____
TOTAL SPECIFIED OPERATING COSTS	\$153.95	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$3.60	\$3.20	\$2.57	\$2.18	\$2.07

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$6.75	_____
INTEREST	\$5.57	_____
EQUIPMENT:		
DEPRECIATION	\$6.31	_____
INTEREST	\$3.37	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.37	_____
INTEREST	\$4.16	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$6.09	_____
INTEREST	\$5.62	_____
TAXES & INSURANCE	\$4.26	_____
INTEREST	\$0.47	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$53.97	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS

\$207.92

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$4.98	\$4.40	\$3.47	\$2.90	\$2.73

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9104
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$24.42	\$30.52	\$36.62
FERTILIZER	\$23.96	\$29.95	\$35.93
DRY OR GINNING (COMMERCIAL)	\$17.25	\$21.56	\$25.87
REPAIRS	\$16.09	\$20.11	\$24.13
OWNERSHIP INTEREST	\$15.35	\$19.19	\$23.03
HAUL (CUSTOM HIRE)	\$13.21	\$16.51	\$19.81
MACHINERY FUEL & OIL	\$12.13	\$15.16	\$18.19
HIRED LABOR	\$9.61	\$12.01	\$14.42
HERBICIDE	\$9.32	\$11.65	\$13.98
IRRIGATION FUEL & OIL	\$6.35	\$7.93	\$9.52
INTEREST ON OP. CAP.	\$5.52	\$6.90	\$8.28
SPREAD (CUSTOM HIRE)	\$4.53	\$5.67	\$6.80
SEED	\$4.20	\$5.26	\$6.31
FARM TAXES	\$2.72	\$3.40	\$4.09
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.68	\$0.85	\$1.02
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$166.34	\$207.92	\$249.50

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	39.00	\$3.98	\$4.98	\$5.98
-25% OF BASE YIELD	45.00	\$3.52	\$4.40	\$5.28
BASE YIELD	60.00	\$2.77	\$3.47	\$4.16
+25% OF BASE YIELD	75.00	\$2.32	\$2.90	\$3.48
+35% OF BASE YIELD	81.00	\$2.19	\$2.73	\$3.28

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM, 1991
 ENTERPRISE FILE NO.: GR9104
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS:

\$166.34 PER ACRE
YIELD IN CWT.

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	39.00	45.00	60.00	75.00	81.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$60.35)	(\$48.84)	(\$20.09)	\$8.71	\$20.22
	\$3.09	(\$34.75)	(\$19.31)	\$19.29	\$57.93	\$73.37
BASE PRICE =	\$3.75	(\$9.16)	\$10.23	\$58.66	\$107.14	\$126.53
	\$4.41	\$16.43	\$39.76	\$98.04	\$156.36	\$179.68
	\$5.06	\$42.03	\$69.29	\$137.41	\$205.58	\$232.84

BASE COSTS:

\$207.92 PER ACRE
YIELD IN CWT.

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	39.00	45.00	60.00	75.00	81.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$99.20)	(\$88.47)	(\$61.67)	(\$34.82)	(\$24.09)
	\$3.09	(\$73.60)	(\$58.94)	(\$22.29)	\$14.40	\$29.07
BASE PRICE =	\$3.75	(\$48.01)	(\$29.41)	\$17.08	\$63.62	\$82.22
	\$4.41	(\$22.42)	\$0.13	\$56.46	\$112.84	\$135.38
	\$5.06	\$3.18	\$29.66	\$95.83	\$162.06	\$188.54

+ 20% DEVIATION FROM BASE COSTS:

\$249.50 PER ACRE
YIELD IN CWT.

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	39.00	45.00	60.00	75.00	81.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$2.44	(\$138.05)	(\$128.10)	(\$103.25)	(\$78.35)	(\$68.39)
	\$3.09	(\$112.46)	(\$98.57)	(\$63.88)	(\$29.13)	(\$15.24)
BASE PRICE =	\$3.75	(\$86.86)	(\$69.04)	(\$24.50)	\$20.09	\$37.92
	\$4.41	(\$61.27)	(\$39.51)	\$14.87	\$69.31	\$91.07
	\$5.06	(\$35.68)	(\$9.97)	\$54.25	\$118.53	\$144.23

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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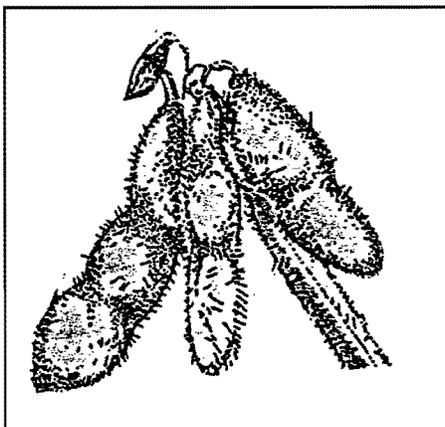
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 113

SOYBEANS

LOAMY SOILS



AUTHORS

TONY E. WINDHAM
CLYDE A. STUART
BILLY E. HERRINGTON, JR.
ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

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Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

Lanny O. Ashlock, Chairman	Ford L. Baldwin
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Gary Huitink	Donald R. Johnson
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Michael L. May	Roy N. Sharp
Clifford S. Snyder	Phil L. Tacker
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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$6.80	_____
FERTILIZER	\$9.96	_____
LIME + APPLICATION	\$8.46	_____
HERBICIDE	\$17.15	_____
FUNGICIDE	\$1.59	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$16.79	_____
REPAIRS	\$19.70	_____
LABOR	\$8.50	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$2.83	_____
CUSTOM HAUL	\$3.75	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$5.25	_____
TOTAL SPECIFIED OPERATING COSTS	\$100.79	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	16.25	18.75	25.00	31.25	33.75
	\$6.12	\$5.32	\$4.03	\$3.26	\$3.03

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$7.60	_____
INTEREST	\$6.27	_____
EQUIPMENT:		
DEPRECIATION	\$7.09	_____
INTEREST	\$3.89	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.42	_____
INTEREST	\$4.18	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$3.26	_____
INTEREST	\$0.36	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$44.07	_____
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$144.86	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	16.25	18.75	25.00	31.25	33.75
	\$8.83	\$7.67	\$5.79	\$4.67	\$4.33

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, 1991
ENTERPRISE FILE NO.: SOY9101
LOCATION: ARKANSAS
SOILS TYPE: LOAMY
IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$20.89	\$26.11	\$31.33
REPAIRS	\$15.76	\$19.70	\$23.64
HERBICIDE	\$13.72	\$17.15	\$20.58
MACHINERY FUEL & OIL	\$13.43	\$16.79	\$20.15
OWNERSHIP INTEREST	\$11.76	\$14.70	\$17.64
FERTILIZER	\$7.97	\$9.96	\$11.95
HIRED LABOR	\$6.80	\$8.50	\$10.21
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
SEED	\$5.44	\$6.80	\$8.15
INTEREST ON OP. CAP.	\$4.20	\$5.25	\$6.31
HAUL (CUSTOM HIRE)	\$3.00	\$3.75	\$4.50
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FARM TAXES	\$2.09	\$2.61	\$3.13
FUNGICIDE	\$1.27	\$1.59	\$1.90
FARM INSURANCE	\$0.52	\$0.65	\$0.78
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$115.89	\$144.86	\$173.83

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	16.25	\$7.06	\$8.83	\$10.60
-25% OF BASE YIELD	18.75	\$6.14	\$7.67	\$9.21
BASE YIELD	25.00	\$4.64	\$5.79	\$6.95
+25% OF BASE YIELD	31.25	\$3.73	\$4.67	\$5.60
+35% OF BASE YIELD	33.75	\$3.47	\$4.33	\$5.20

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9101
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS: \$115.89 PER ACRE

YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	16.25	18.75	25.00	31.25	33.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$49.29)	(\$39.54)	(\$15.14)	\$9.26	\$19.02
	\$5.12	(\$31.66)	(\$19.19)	\$11.99	\$43.16	\$55.63
BASE PRICE =	\$6.20	(\$14.03)	\$1.15	\$39.11	\$77.07	\$92.25
	\$7.29	\$3.60	\$21.50	\$66.24	\$110.98	\$128.87
	\$8.37	\$21.23	\$41.84	\$93.36	\$144.88	\$165.49

BASE COSTS: \$144.86 PER ACRE

YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	16.25	18.75	25.00	31.25	33.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$77.99)	(\$68.31)	(\$44.11)	(\$19.91)	(\$10.23)
	\$5.12	(\$60.36)	(\$47.97)	(\$16.99)	\$13.99	\$26.39
BASE PRICE =	\$6.20	(\$42.73)	(\$27.62)	\$10.14	\$47.90	\$63.00
	\$7.29	(\$25.10)	(\$7.28)	\$37.26	\$81.81	\$99.62
	\$8.37	(\$7.46)	\$13.07	\$64.39	\$115.71	\$136.24

+ 20% DEVIATION FROM BASE COSTS: \$173.83 PER ACRE

YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	16.25	18.75	25.00	31.25	33.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$106.68)	(\$97.08)	(\$73.08)	(\$49.08)	(\$39.48)
	\$5.12	(\$89.05)	(\$76.74)	(\$45.96)	(\$15.18)	(\$2.86)
BASE PRICE =	\$6.20	(\$71.42)	(\$56.40)	(\$18.83)	\$18.73	\$33.75
	\$7.29	(\$53.79)	(\$36.05)	\$8.29	\$52.64	\$70.37
	\$8.37	(\$36.16)	(\$15.71)	\$35.42	\$86.54	\$106.99

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

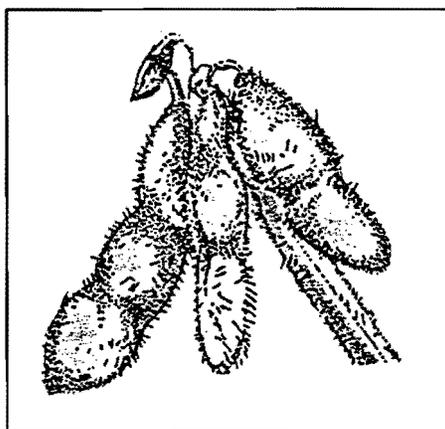
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 114

SOYBEANS

LOAMY SOILS, FURROW IRRIGATION



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

Lanny O. Ashlock, Chairman
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Gary Huitink
Edward J. Jordan
M.C. McDaniel
Michael L. May
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Phil L. Tacker

THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
SEED	\$6.80				
FERTILIZER	\$14.53				
LIME + APPLICATION	\$8.46				
HERBICIDE	\$17.15				
FUNGICIDE	\$1.59				
INSECTICIDE	\$0.00				
DEFOLIANT	\$0.00				
AERIAL APPLICATION	\$0.00				
MACHINERY:					
FUEL, OIL, LUBRICANTS	\$18.91				
REPAIRS	\$21.62				
LABOR	\$9.59				
IRRIGATION:					
FUEL, OIL, LUBRICANTS	\$15.28				
REPAIRS	\$2.46				
IRRIGATION LABOR	\$9.94				
CUSTOM SPREAD	\$2.83				
CUSTOM HAUL	\$6.00				
CUSTOM DRY OR GINNING	\$0.00				
MISCELLANEOUS	\$0.00				
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.	\$7.43				
TOTAL SPECIFIED OPERATING COSTS	\$142.58				
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
	YIELD IN BUSHELLS				
	26.00	30.00	40.00	50.00	54.00
	\$5.40	\$4.70	\$3.56	\$2.88	\$2.68
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
TRACTORS:					
DEPRECIATION	\$8.75				
INTEREST	\$7.22				
EQUIPMENT:					
DEPRECIATION	\$7.69				
INTEREST	\$4.22				
SPECIAL EQUIPMENT:					
DEPRECIATION	\$11.42				
INTEREST	\$4.18				
MISCELLANEOUS:					
DEPRECIATION	\$0.00				
INTEREST	\$0.00				
IRRIGATION:					
DEPRECIATION	\$10.82				
INTEREST	\$9.52				
TAXES & INSURANCE	\$5.71				
INTEREST	\$0.63				
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS	\$70.15				
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$212.73				
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
	YIELD IN BUSHELLS				
	26.00	30.00	40.00	50.00	54.00
	\$8.10	\$7.04	\$5.32	\$4.29	\$3.98
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9102
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$30.94	\$38.67	\$46.41
OWNERSHIP INTEREST	\$20.61	\$25.76	\$30.92
REPAIRS	\$19.26	\$24.08	\$28.89
HIRED LABOR	\$15.62	\$19.53	\$23.43
MACHINERY FUEL & OIL	\$15.13	\$18.91	\$22.70
HERBICIDE	\$13.72	\$17.15	\$20.58
IRRIGATION FUEL & OIL	\$12.22	\$15.28	\$18.33
FERTILIZER	\$11.62	\$14.53	\$17.43
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
INTEREST ON OP. CAP.	\$5.95	\$7.43	\$8.92
SEED	\$5.44	\$6.80	\$8.15
HAUL (CUSTOM HIRE)	\$4.80	\$6.00	\$7.20
FARM TAXES	\$3.66	\$4.57	\$5.48
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FUNGICIDE	\$1.27	\$1.59	\$1.90
FARM INSURANCE	\$0.91	\$1.14	\$1.37
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$170.19	\$212.73	\$255.28

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	26.00	\$6.48	\$8.10	\$9.72
-25% OF BASE YIELD	30.00	\$5.63	\$7.04	\$8.45
BASE YIELD	40.00	\$4.25	\$5.32	\$6.38
+25% OF BASE YIELD	50.00	\$3.43	\$4.29	\$5.14
+35% OF BASE YIELD	54.00	\$3.18	\$3.98	\$4.78

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9102
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FURROW

- 20% DEVIATION FROM BASE COSTS:

**\$170.19 PER ACRE
 YIELD IN BUSHEL**

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$63.63)	(\$48.02)	(\$8.99)	\$30.05	\$45.66
	\$5.12	(\$35.42)	(\$15.47)	\$34.41	\$84.30	\$104.25
BASE PRICE =	\$6.20	(\$7.21)	\$17.08	\$77.81	\$138.55	\$162.84
	\$7.29	\$21.00	\$49.63	\$121.21	\$192.80	\$221.43
	\$8.37	\$49.21	\$82.18	\$164.61	\$247.05	\$280.02

BASE COSTS:

**\$212.73 PER ACRE
 YIELD IN BUSHEL**

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$105.74)	(\$90.25)	(\$51.53)	(\$12.82)	\$2.67
	\$5.12	(\$77.53)	(\$57.70)	(\$8.13)	\$41.43	\$61.26
BASE PRICE =	\$6.20	(\$49.32)	(\$25.15)	\$35.27	\$95.68	\$119.85
	\$7.29	(\$21.11)	\$7.40	\$78.67	\$149.93	\$178.44
	\$8.37	\$7.10	\$39.95	\$122.07	\$204.18	\$237.03

+ 20% DEVIATION FROM BASE COSTS:

**\$255.28 PER ACRE
 YIELD IN BUSHEL**

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$147.84)	(\$132.48)	(\$94.08)	(\$55.68)	(\$40.32)
	\$5.12	(\$119.63)	(\$99.93)	(\$50.68)	(\$1.43)	\$18.27
BASE PRICE =	\$6.20	(\$91.42)	(\$67.38)	(\$7.28)	\$52.82	\$76.86
	\$7.29	(\$63.21)	(\$34.83)	\$36.12	\$107.07	\$135.45
	\$8.37	(\$35.00)	(\$2.28)	\$79.52	\$161.32	\$194.04

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
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AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
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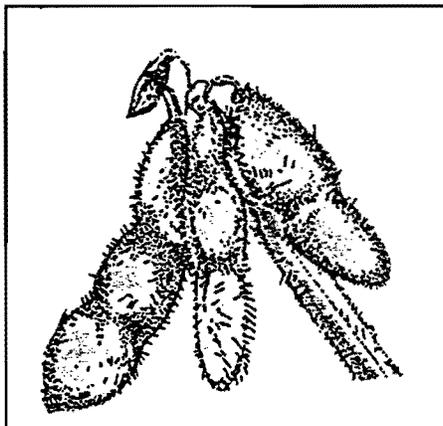
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 115

SOYBEANS

IN RICE ROTATION,
LOAMY SOILS, FLOOD IRRIGATION



AUTHORS

TONY E. WINDHAM
CLYDE A. STUART
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ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

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This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$6.80	_____
FERTILIZER	\$23.80	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$25.56	_____
FUNGICIDE	\$1.59	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$22.77	_____
REPAIRS	\$24.35	_____
LABOR	\$11.43	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$14.15	_____
REPAIRS	\$2.86	_____
IRRIGATION LABOR	\$6.62	_____
CUSTOM SPREAD	\$2.83	_____
CUSTOM HAUL	\$6.00	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$1.25	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$8.25	_____
TOTAL SPECIFIED OPERATING COSTS	\$158.26	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	26.00	30.00	40.00	50.00	54.00
	\$6.00	\$5.22	\$3.96	\$3.20	\$2.97

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$10.99	_____
INTEREST	\$9.07	_____
EQUIPMENT:		
DEPRECIATION	\$8.59	_____
INTEREST	\$4.92	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.42	_____
INTEREST	\$4.18	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$8.16	_____
INTEREST	\$7.62	_____
TAXES & INSURANCE	\$5.86	_____
INTEREST	\$0.64	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$71.45	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$229.71	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	26.00	30.00	40.00	50.00	54.00
	\$8.75	\$7.60	\$5.74	\$4.63	\$4.29

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, IN RICE ROTATION, 1991
 ENTERPRISE FILE NO.: SOY9103
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$31.33	\$39.17	\$47.00
REPAIRS	\$21.77	\$27.21	\$32.65
OWNERSHIP INTEREST	\$21.14	\$26.43	\$31.71
HERBICIDE	\$20.45	\$25.56	\$30.67
FERTILIZER	\$19.04	\$23.80	\$28.55
MACHINERY FUEL & OIL	\$18.22	\$22.77	\$27.33
HIRED LABOR	\$14.45	\$18.06	\$21.67
IRRIGATION FUEL & OIL	\$11.32	\$14.15	\$16.98
INTEREST ON OP. CAP.	\$6.60	\$8.25	\$9.90
SEED	\$5.44	\$6.80	\$8.15
HAUL (CUSTOM HIRE)	\$4.80	\$6.00	\$7.20
FARM TAXES	\$3.75	\$4.69	\$5.63
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FUNGICIDE	\$1.27	\$1.59	\$1.90
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.94	\$1.17	\$1.41
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$183.77	\$229.71	\$275.66

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	26.00	\$7.00	\$8.75	\$10.50
-25% OF BASE YIELD	30.00	\$6.08	\$7.60	\$9.13
BASE YIELD	40.00	\$4.59	\$5.74	\$6.89
+25% OF BASE YIELD	50.00	\$3.70	\$4.63	\$5.55
+35% OF BASE YIELD	54.00	\$3.44	\$4.29	\$5.15

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, IN RICE ROTATION, 1991
 ENTERPRISE FILE NO.: SOY9103
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS:

**\$183.77 PER ACRE
YIELD IN BUSHELS**

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$77.22)	(\$61.61)	(\$22.57)	\$16.46	\$32.08
	\$5.12	(\$49.01)	(\$29.06)	\$20.83	\$70.71	\$90.67
BASE PRICE =	\$6.20	(\$20.80)	\$3.49	\$64.23	\$124.96	\$149.26
	\$7.29	\$7.41	\$36.04	\$107.63	\$179.21	\$207.85
	\$8.37	\$35.62	\$68.59	\$151.03	\$233.46	\$266.44

BASE COSTS:

**\$229.71 PER ACRE
YIELD IN BUSHELS**

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$122.72)	(\$107.23)	(\$68.51)	(\$29.80)	(\$14.31)
	\$5.12	(\$94.51)	(\$74.68)	(\$25.11)	\$24.45	\$44.28
BASE PRICE =	\$6.20	(\$66.30)	(\$42.13)	\$18.29	\$78.70	\$102.87
	\$7.29	(\$38.09)	(\$9.58)	\$61.69	\$132.95	\$161.46
	\$8.37	(\$9.88)	\$22.97	\$105.09	\$187.20	\$220.05

+ 20% DEVIATION FROM BASE COSTS:

**\$275.66 PER ACRE
YIELD IN BUSHELS**

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$168.22)	(\$152.86)	(\$114.46)	(\$76.06)	(\$60.70)
	\$5.12	(\$140.01)	(\$120.31)	(\$71.06)	(\$21.81)	(\$2.11)
BASE PRICE =	\$6.20	(\$111.80)	(\$87.76)	(\$27.66)	\$32.44	\$56.48
	\$7.29	(\$83.59)	(\$55.21)	\$15.74	\$86.69	\$115.07
	\$8.37	(\$55.38)	(\$22.66)	\$59.14	\$140.94	\$173.66

SEQUENCE OF OPERATIONS

ENTERPRISE: SOYBEANS, IN RICE ROTATION, 1991
 ENTERPRISE FILE NO.: SOY9103
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

OPERATION NO. (A)	DATE (B)	OPERATION (C)	WIDTH (FEET) (D)	HORSE POWER PTO (E)	PERFORMANCE RATE (AC/HR) (F)	TIMES OVER (NO.) (G)	MACHINERY COST					
							OPERATING COST		OWNERSHIP COST			
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	TOTAL COST (M)
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
2	4	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.00	\$1.21	\$1.16	\$1.39	\$1.00	\$0.23	\$4.99
3	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.00	\$1.33	\$1.36	\$1.39	\$1.06	\$0.24	\$5.38
4	4	LAND FLOAT	16.0	175.0	7.273	1.00	\$1.49	\$1.86	\$1.31	\$1.18	\$0.27	\$6.11
5	5	APPLY FERTILIZER	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6	5	FIELD CULTIVATOR	25.5	175.0	9.891	1.00	\$1.33	\$1.36	\$1.39	\$1.06	\$0.24	\$5.38
7	5	TRIPLE - K	26.7	175.0	11.638	1.00	\$1.30	\$1.16	\$1.33	\$1.04	\$0.24	\$5.06
	5	SPRAYER, SADDLE MTD BC	26.7	0.0	11.638	1.00	\$0.13	\$0.00	\$0.32	\$0.17	\$0.04	\$0.66
	5	PICKUP, WATER TANK	20.0	170.0	8.485	0.12	\$0.12	\$0.17	\$0.06	\$0.02	\$0.00	\$0.37
8	5	PLANTER 8 ROW @ 30"	20.0	140.0	7.308	1.00	\$2.09	\$1.48	\$2.29	\$1.15	\$0.26	\$7.27
	5		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	5	LEVEE SURVEY	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
10	5	DITCHER, REAR MTD POWER	3.0	140.0	0.436	0.01	\$0.15	\$0.25	\$0.33	\$0.22	\$0.05	\$0.99
11	6	ROW CULTIVATOR	20.0	140.0	5.091	1.00	\$1.92	\$2.12	\$1.75	\$1.28	\$0.29	\$7.36
12	6	SPRAYER, SADDLE MTD BC	20.0	140.0	7.879	1.00	\$1.01	\$1.37	\$1.15	\$0.84	\$0.19	\$4.57
	6	HERBICIDE	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.06	\$0.06	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
13	6	ROW CULTIVATOR	20.0	140.0	5.091	1.00	\$1.92	\$2.12	\$1.75	\$1.28	\$0.29	\$7.36
	6	SPRAYER, DIR 8 ROW @ 30"	20.0	0.0	5.091	1.00	\$0.21	\$0.00	\$0.51	\$0.28	\$0.06	\$1.06
	6		0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	6	PICKUP, WATER TANK	20.0	170.0	8.485	0.08	\$0.08	\$0.08	\$0.03	\$0.01	\$0.00	\$0.19
14	7	ROW CULTIVATOR	20.0	140.0	5.091	1.00	\$1.92	\$2.12	\$1.75	\$1.28	\$0.29	\$7.36
15	7	DITCHER, REAR MTD POWER	3.0	140.0	0.436	0.01	\$0.15	\$0.25	\$0.33	\$0.22	\$0.05	\$0.99
16	7	LEVEE DISK-BUILD	9.0	155.0	4.800	0.15	\$0.25	\$0.37	\$0.29	\$0.21	\$0.05	\$1.17
17	7	BLADE- 8', BUTT LEVEES	8.0	85.0	1.745	0.05	\$0.09	\$0.19	\$0.16	\$0.14	\$0.03	\$0.62
18	7	FLOOD IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	8	LEVEE DISK-BUILD	9.0	155.0	4.800	0.10	\$0.16	\$0.25	\$0.19	\$0.14	\$0.03	\$0.78
20	8	FLOOD IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	8	LEVEE DISK-BUILD	9.0	155.0	4.800	0.10	\$0.16	\$0.25	\$0.19	\$0.14	\$0.03	\$0.78
22	8	FLOOD IRRIGATION	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	9	LEVEE DISK-KNOCK	9.0	155.0	4.800	0.10	\$0.18	\$0.25	\$0.19	\$0.14	\$0.03	\$0.78
24	9	BLADE- SMOOTH LEVEES	8.0	85.0	1.745	0.05	\$0.09	\$0.19	\$0.16	\$0.14	\$0.03	\$0.62
25	10	COMBINE, 4WD, SOYBEANS	20.0	190.0	5.091	1.00	\$5.82	\$3.16	\$11.31	\$4.15	\$0.94	\$25.39
26	10	CUSTOM HAUL	0.0	0.0	0.000	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	0		0.0	0.0	0.000	0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPECIFIED INTEREST												
TOTAL SPECIFIED COSTS							\$24.35	\$22.77	\$31.00	\$18.16	\$4.13	\$100.41

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: SOYBEANS, IN RICE ROTATION, 1991
 ENTERPRISE FILE NO.: SOY9103
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

MATERIAL AND/OR MISCELLANEOUS

OPER- ATION NO. (A)	CHEMICAL TRADE NAME OR ITEM (B)	FORMU- LATION (UNIT) (C)	UNIT RATE (MEASURE) (D)	PRICE PER UNIT (E)	PRODUCT RATE (ACRE) (F)	ROW WIDTH (INCHES) (G)	BAND WIDTH (INCHES) (H)	PERCENT COVERED (I)	OPER- ATING COST (J)	OWNER- SHIP COST (K)	LABOR COST (L)	TOTAL SPECIFIED COST (M)
1								0.00%	\$0.00		\$0.47	\$5.46
2								0.00%	\$0.00		\$0.47	\$5.46
3								0.00%	\$0.00		\$0.56	\$5.94
4								0.00%	\$0.00		\$0.76	\$6.87
5	CSTM AP FERT GRND		ACRE	\$2.833	1.000			100.00%	\$2.83		\$0.00	\$2.83
	POTASH (MATERIAL)		POUND	\$0.083	175.000			100.00%	\$14.53		\$0.00	\$14.53
	PHOSPHATE (MATERIAL)		POUND	\$0.103	90.000			100.00%	\$9.27		\$0.00	\$9.27
6								0.00%	\$0.00		\$0.56	\$5.94
7								0.00%	\$0.00		\$0.59	\$5.65
	DUAL	8EC	PINT	\$7.401	2.000			100.00%	\$14.80		\$0.00	\$15.46
								0.00%	\$0.00		\$0.00	\$0.37
8	SOYBEAN SEED (PUBLIC)		POUND	\$0.151	45.000			100.00%	\$6.80		\$1.45	\$15.51
	SEED TREATMENT		ACRE	\$1.585	1.000			100.00%	\$1.59		\$0.00	\$1.59
9	CSTM LASER SURVEY		ACRE	\$1.25	1.000			100.00%	\$1.25		\$0.00	\$1.25
10								0.00%	\$0.00		\$0.13	\$1.12
11								0.00%	\$0.00		\$1.08	\$8.44
12	BLAZER	2L	PINT	\$8.045	1.000	30	15	50.00%	\$4.02		\$0.88	\$9.46
	BASAGRAN	4L	PINT	\$7.865	1.000	30	15	50.00%	\$3.93		\$0.00	\$3.93
								0.00%	\$0.00		\$0.00	\$0.19
13								0.00%	\$0.00		\$1.36	\$8.71
	2,4-DB	2#/GAL	PINT	\$2.541	0.800	30	15	50.00%	\$1.02		\$0.00	\$2.08
	GRAMOXONE	1.5#/GAL	PINT	\$5.332	0.670	30	15	50.00%	\$1.79		\$0.00	\$1.79
								0.00%	\$0.00		\$0.00	\$0.19
14								0.00%	\$0.00		\$1.08	\$8.44
15								0.00%	\$0.00		\$0.13	\$1.12
16								0.00%	\$0.00		\$0.17	\$1.34
17								0.00%	\$0.00		\$0.16	\$0.78
18	FLOOD IRRIGATION		AC IN	\$1.970	4.000			100.00%	\$7.88	\$5.84	\$0.00	\$13.72
19								0.00%	\$0.00		\$0.11	\$0.89
20	FLOOD IRRIGATION		AC IN	\$1.970	4.000			100.00%	\$7.88	\$5.84	\$0.00	\$13.72
21								0.00%	\$0.00		\$0.11	\$0.89
22	FLOOD IRRIGATION		AC IN	\$1.970	4.000			100.00%	\$7.88	\$5.84	\$0.00	\$13.72
23								0.00%	\$0.00		\$0.11	\$0.89
24								0.00%	\$0.00		\$0.16	\$0.78
25								0.00%	\$0.00		\$1.08	\$26.47
26	HAULING CHARGE		BUSHEL	\$0.150	40.000			100.00%	\$6.00		\$0.00	\$6.00
								0.00%	\$0.00		\$0.00	\$0.00
								0.00%	\$0.00		\$0.00	\$0.00
												\$8.90
									\$91.45	\$17.52	\$11.43	\$229.71

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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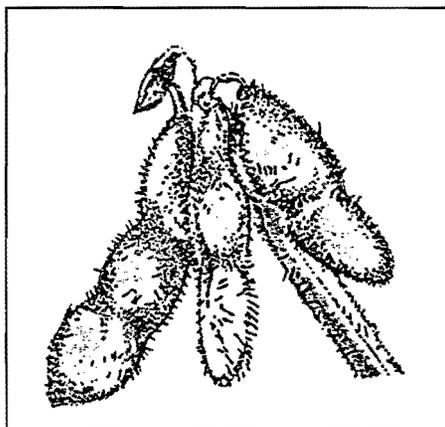
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 116

SOYBEANS

LOAMY SOILS, CENTER PIVOT
IRRIGATION, TOWABLE, 260 ACRES



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

Lanny O. Ashlock, Chairman
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Edward J. Jordan
M.C. McDaniel
Michael L. May
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Charlie Guy
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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$6.80	_____
FERTILIZER	\$14.53	_____
LIME + APPLICATION	\$8.46	_____
HERBICIDE	\$17.15	_____
FUNGICIDE	\$1.59	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$18.91	_____
REPAIRS	\$21.62	_____
LABOR	\$9.59	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$14.74	_____
REPAIRS	\$6.01	_____
IRRIGATION LABOR	\$2.76	_____
CUSTOM SPREAD	\$2.83	_____
CUSTOM HAUL	\$6.00	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$7.20	_____
TOTAL SPECIFIED OPERATING COSTS	\$138.19	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	26.00	30.00	40.00	50.00	54.00
	\$5.23	\$4.55	\$3.45	\$2.80	\$2.60

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$8.75	_____
INTEREST	\$7.22	_____
EQUIPMENT:		
DEPRECIATION	\$7.69	_____
INTEREST	\$4.22	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.42	_____
INTEREST	\$4.18	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$16.13	_____
INTEREST	\$14.03	_____
TAXES & INSURANCE	\$6.74	_____
INTEREST	\$0.74	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$81.12	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$219.31	_____
--	-----------------	-------

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	26.00	30.00	40.00	50.00	54.00
	\$8.35	\$7.26	\$5.48	\$4.42	\$4.10

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAK-EVEN PRICES.

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9104
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, TOWABLE, 260 ACRES

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$35.19	\$43.98	\$52.78
OWNERSHIP INTEREST	\$24.32	\$30.39	\$36.47
REPAIRS	\$22.10	\$27.63	\$33.16
MACHINERY FUEL & OIL	\$15.13	\$18.91	\$22.70
HERBICIDE	\$13.72	\$17.15	\$20.58
IRRIGATION FUEL & OIL	\$11.79	\$14.74	\$17.69
FERTILIZER	\$11.62	\$14.53	\$17.43
HIRED LABOR	\$9.88	\$12.35	\$14.82
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
INTEREST ON OP. CAP.	\$5.76	\$7.20	\$8.65
SEED	\$5.44	\$6.80	\$8.15
HAUL (CUSTOM HIRE)	\$4.80	\$6.00	\$7.20
FARM TAXES	\$4.31	\$5.39	\$6.47
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FUNGICIDE	\$1.27	\$1.59	\$1.90
FARM INSURANCE	\$1.08	\$1.35	\$1.62
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$175.45	\$219.31	\$263.17

PER UNIT BREAK-EVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAK-EVEN PRICE		
-35% OF BASE YIELD	26.00	\$6.68	\$8.35	\$10.02
-25% OF BASE YIELD	30.00	\$5.81	\$7.26	\$8.71
BASE YIELD	40.00	\$4.39	\$5.48	\$6.58
+25% OF BASE YIELD	50.00	\$3.53	\$4.42	\$5.30
+35% OF BASE YIELD	54.00	\$3.28	\$4.10	\$4.92

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9104
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, TOWABLE, 260 ACRES

- 20% DEVIATION FROM BASE COSTS: \$175.45 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$68.90)	(\$53.28)	(\$14.25)	\$24.78	\$40.40
	\$5.12	(\$40.69)	(\$20.73)	\$29.15	\$79.03	\$98.99
BASE PRICE =	\$6.20	(\$12.48)	\$11.82	\$72.55	\$133.28	\$157.58
	\$7.29	\$15.73	\$44.37	\$115.95	\$187.53	\$216.17
	\$8.37	\$43.94	\$76.92	\$159.35	\$241.78	\$274.76

BASE COSTS: \$219.31 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$112.32)	(\$96.83)	(\$58.11)	(\$19.39)	(\$3.91)
	\$5.12	(\$84.11)	(\$64.28)	(\$14.71)	\$34.86	\$54.68
BASE PRICE =	\$6.20	(\$55.90)	(\$31.73)	\$28.69	\$89.11	\$113.27
	\$7.29	(\$27.69)	\$0.82	\$72.09	\$143.36	\$171.86
	\$8.37	\$0.52	\$33.37	\$115.49	\$197.61	\$230.45

+ 20% DEVIATION FROM BASE COSTS: \$263.17 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$155.74)	(\$140.37)	(\$101.97)	(\$63.57)	(\$48.21)
	\$5.12	(\$127.53)	(\$107.82)	(\$58.57)	(\$9.32)	\$10.38
BASE PRICE =	\$6.20	(\$99.32)	(\$75.27)	(\$15.17)	\$44.93	\$68.97
	\$7.29	(\$71.11)	(\$42.72)	\$28.23	\$99.18	\$127.56
	\$8.37	(\$42.90)	(\$10.17)	\$71.63	\$153.43	\$186.15

**LIST OF PUBLICATIONS FOR
ESTIMATING 1991 PRODUCTION COSTS**

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
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AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
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AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
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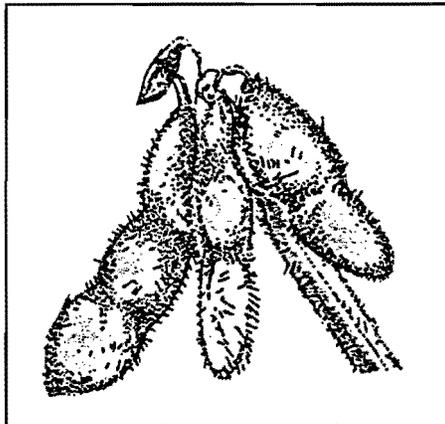
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 117

SOYBEANS

DRILLED, LOAMY SOILS



AUTHORS

TONY E. WINDHAM
CLYDE A. STUART
BILLY E. HERRINGTON, JR.
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EXTENSION ECONOMISTS - MANAGEMENT

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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$9.06	_____
FERTILIZER	\$9.96	_____
LIME + APPLICATION	\$8.46	_____
HERBICIDE	\$28.91	_____
FUNGICIDE	\$2.11	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$6.38	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$11.11	_____
REPAIRS	\$14.24	_____
LABOR	\$5.17	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$2.83	_____
CUSTOM HAUL	\$3.75	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$5.61	_____
TOTAL SPECIFIED OPERATING COSTS	\$107.58	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	16.25	18.75	25.00	31.25	33.75
	\$6.54	\$5.68	\$4.30	\$3.47	\$3.23

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$4.62	_____
INTEREST	\$3.81	_____
EQUIPMENT:		
DEPRECIATION	\$5.18	_____
INTEREST	\$3.17	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.37	_____
INTEREST	\$4.16	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$2.53	_____
INTEREST	\$0.28	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$35.13	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$142.71	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	16.25	18.75	25.00	31.25	33.75
	\$8.70	\$7.56	\$5.71	\$4.60	\$4.27

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, DRILLED, 1991
 ENTERPRISE FILE NO.: SOY9105
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
HERBICIDE	\$23.13	\$28.91	\$34.69
DEPRECIATION	\$16.93	\$21.17	\$25.40
REPAIRS	\$11.39	\$14.24	\$17.08
OWNERSHIP INTEREST	\$9.14	\$11.42	\$13.71
MACHINERY FUEL & OIL	\$8.89	\$11.11	\$13.33
FERTILIZER	\$7.97	\$9.96	\$11.95
SEED	\$7.25	\$9.06	\$10.87
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
AERIAL APPLI. (CUSTOM HIRE)	\$5.10	\$6.38	\$7.65
INTEREST ON OP. CAP.	\$4.49	\$5.61	\$6.73
HIRED LABOR	\$4.13	\$5.17	\$6.20
HAUL (CUSTOM HIRE)	\$3.00	\$3.75	\$4.50
SPREAD (CUSTOM HIRE)	\$2.27	\$2.83	\$3.40
FUNGICIDE	\$1.69	\$2.11	\$2.53
FARM TAXES	\$1.62	\$2.03	\$2.43
FARM INSURANCE	\$0.41	\$0.51	\$0.61
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$114.17	\$142.71	\$171.25

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	16.25	\$6.96	\$8.70	\$10.44
-25% OF BASE YIELD	18.75	\$6.05	\$7.56	\$9.07
BASE YIELD	25.00	\$4.57	\$5.71	\$6.85
+25% OF BASE YIELD	31.25	\$3.68	\$4.60	\$5.52
+35% OF BASE YIELD	33.75	\$3.42	\$4.27	\$5.12

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, DRILLED, 1991
 ENTERPRISE FILE NO.: SOY9105
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS: \$114.17 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	16.25	18.75	25.00	31.25	33.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$47.57)	(\$37.81)	(\$13.42)	\$10.98	\$20.74
	\$5.12	(\$29.94)	(\$17.47)	\$13.71	\$44.89	\$57.36
BASE PRICE =	\$6.20	(\$12.31)	\$2.88	\$40.83	\$78.79	\$93.98
	\$7.29	\$5.32	\$23.22	\$67.96	\$112.70	\$130.60
	\$8.37	\$22.95	\$43.56	\$95.08	\$146.61	\$167.21

BASE COSTS: \$142.71 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	16.25	18.75	25.00	31.25	33.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$75.83)	(\$66.16)	(\$41.96)	(\$17.76)	(\$8.08)
	\$5.12	(\$58.20)	(\$45.81)	(\$14.83)	\$16.15	\$28.54
BASE PRICE =	\$6.20	(\$40.57)	(\$25.47)	\$12.29	\$50.05	\$65.16
	\$7.29	(\$22.94)	(\$5.12)	\$39.42	\$83.96	\$101.78
	\$8.37	(\$5.31)	\$15.22	\$66.54	\$117.87	\$138.40

+ 20% DEVIATION FROM BASE COSTS: \$171.25 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	16.25	18.75	25.00	31.25	33.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$104.10)	(\$94.50)	(\$70.50)	(\$46.50)	(\$36.90)
	\$5.12	(\$86.47)	(\$74.16)	(\$43.37)	(\$12.59)	(\$0.28)
BASE PRICE =	\$6.20	(\$68.84)	(\$53.81)	(\$16.25)	\$21.31	\$36.34
	\$7.29	(\$51.21)	(\$33.47)	\$10.88	\$55.22	\$72.96
	\$8.37	(\$33.57)	(\$13.12)	\$38.00	\$89.13	\$109.58

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

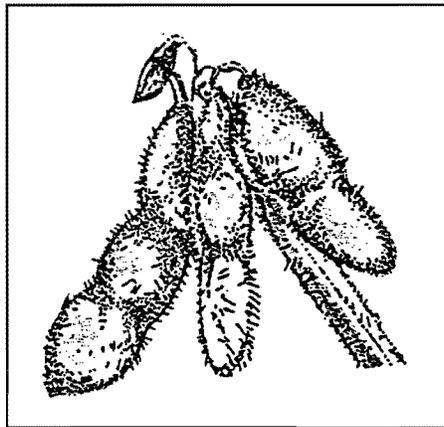
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 118

SOYBEANS

FOLLOWING WHEAT, LOAMY SOILS



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UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

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THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
SEED	\$6.80				
FERTILIZER	\$9.96				
LIME + APPLICATION	\$8.46				
HERBICIDE	\$12.24				
FUNGICIDE	\$1.59				
INSECTICIDE	\$0.00				
DEFOLIANT	\$0.00				
AERIAL APPLICATION	\$0.00				
MACHINERY:					
FUEL, OIL, LUBRICANTS	\$12.82				
REPAIRS	\$15.47				
LABOR	\$6.64				
IRRIGATION:					
FUEL, OIL, LUBRICANTS	\$0.00				
REPAIRS	\$0.00				
IRRIGATION LABOR	\$0.00				
CUSTOM SPREAD	\$1.42				
CUSTOM HAUL	\$3.00				
CUSTOM DRY OR GINNING	\$0.00				
MISCELLANEOUS	\$0.00				
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.	\$4.31				
TOTAL SPECIFIED OPERATING COSTS	\$82.70				
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
	YIELD IN BUSHELS				
	13.00	15.00	20.00	25.00	27.00
	\$6.28	\$5.46	\$4.14	\$3.34	\$3.10
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
TRACTORS:					
DEPRECIATION	\$5.24				
INTEREST	\$4.32				
EQUIPMENT:					
DEPRECIATION	\$4.52				
INTEREST	\$2.32				
SPECIAL EQUIPMENT:					
DEPRECIATION	\$11.39				
INTEREST	\$4.17				
MISCELLANEOUS:					
DEPRECIATION	\$0.00				
INTEREST	\$0.00				
IRRIGATION:					
DEPRECIATION	\$0.00				
INTEREST	\$0.00				
TAXES & INSURANCE	\$2.46				
INTEREST	\$0.27				
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS	\$34.69				
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$117.39				
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
	YIELD IN BUSHELS				
	13.00	15.00	20.00	25.00	27.00
	\$8.94	\$7.77	\$5.87	\$4.73	\$4.39
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9106
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$16.92	\$21.15	\$25.39
REPAIRS	\$12.38	\$15.47	\$18.57
MACHINERY FUEL & OIL	\$10.26	\$12.82	\$15.38
HERBICIDE	\$9.79	\$12.24	\$14.68
OWNERSHIP INTEREST	\$8.86	\$11.08	\$13.29
FERTILIZER	\$7.97	\$9.96	\$11.95
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
SEED	\$5.44	\$6.80	\$8.15
HIRED LABOR	\$5.31	\$6.64	\$7.97
INTEREST ON OP. CAP.	\$3.45	\$4.31	\$5.17
HAUL (CUSTOM HIRE)	\$2.40	\$3.00	\$3.60
FARM TAXES	\$1.57	\$1.97	\$2.36
FUNGICIDE	\$1.27	\$1.59	\$1.90
SPREAD (CUSTOM HIRE)	\$1.13	\$1.42	\$1.70
FARM INSURANCE	\$0.39	\$0.49	\$0.59
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$93.91	\$117.39	\$140.87

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	13.00	\$7.16	\$8.94	\$10.73
-25% OF BASE YIELD	15.00	\$6.22	\$7.77	\$9.33
BASE YIELD	20.00	\$4.70	\$5.87	\$7.04
+25% OF BASE YIELD	25.00	\$3.78	\$4.73	\$5.67
+35% OF BASE YIELD	27.00	\$3.51	\$4.39	\$5.27

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9106
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS:

**\$93.91 PER ACRE
YIELD IN BUSHELS**

PRODUCER PRICE ESTIMATES	13.00	15.00	20.00	25.00	27.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$40.64)	(\$32.83)	(\$13.31)	\$6.20	\$14.01
	\$5.12	(\$26.53)	(\$16.56)	\$8.39	\$33.33	\$43.30
BASE PRICE =	\$6.20	(\$12.43)	(\$0.28)	\$30.09	\$60.45	\$72.60
	\$7.29	\$1.68	\$15.99	\$51.79	\$87.58	\$101.89
	\$8.37	\$15.78	\$32.27	\$73.49	\$114.70	\$131.19

BASE COSTS:

**\$117.39 PER ACRE
YIELD IN BUSHELS**

PRODUCER PRICE ESTIMATES	13.00	15.00	20.00	25.00	27.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$63.89)	(\$56.15)	(\$36.79)	(\$17.43)	(\$9.69)
	\$5.12	(\$49.79)	(\$39.88)	(\$15.09)	\$9.69	\$19.60
BASE PRICE =	\$6.20	(\$35.68)	(\$23.60)	\$6.61	\$36.82	\$48.90
	\$7.29	(\$21.58)	(\$7.33)	\$28.31	\$63.94	\$78.19
	\$8.37	(\$7.47)	\$8.95	\$50.01	\$91.07	\$107.49

+ 20% DEVIATION FROM BASE COSTS:

**\$140.87 PER ACRE
YIELD IN BUSHELS**

PRODUCER PRICE ESTIMATES	13.00	15.00	20.00	25.00	27.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$87.15)	(\$79.47)	(\$60.27)	(\$41.07)	(\$33.39)
	\$5.12	(\$73.05)	(\$63.20)	(\$38.57)	(\$13.95)	(\$4.10)
BASE PRICE =	\$6.20	(\$58.94)	(\$46.92)	(\$16.87)	\$13.18	\$25.20
	\$7.29	(\$44.84)	(\$30.65)	\$4.83	\$40.30	\$54.49
	\$8.37	(\$30.73)	(\$14.37)	\$26.53	\$67.43	\$83.79

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

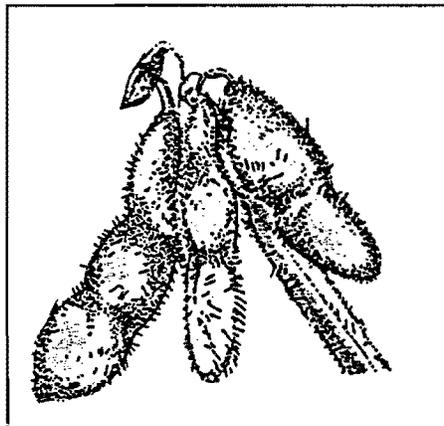
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 119

SOYBEANS

FOLLOWING WHEAT, LOAMY SOILS,
CENTER PIVOT IRRIGATION, TOWABLE, 260 ACRES



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

Lanny O. Ashlock, Chairman	Ford L. Baldwin
Claude M. Bonner	Charlie Guy
Gary Huitink	Donald R. Johnson
Edward J. Jordan	Gus M. Lorenz
M.C. McDaniel	H. J. Mascagni
Michael L. May	Roy N. Sharp
Clifford S. Snyder	Phil L. Tacker
Tony E. Windham	

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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$6.80	_____
FERTILIZER	\$14.53	_____
LIME + APPLICATION	\$8.46	_____
HERBICIDE	\$12.24	_____
FUNGICIDE	\$1.59	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$12.82	_____
REPAIRS	\$15.57	_____
LABOR	\$6.64	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$14.74	_____
REPAIRS	\$6.01	_____
IRRIGATION LABOR	\$2.76	_____
CUSTOM SPREAD	\$1.42	_____
CUSTOM HAUL	\$5.25	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$5.98	_____
TOTAL SPECIFIED OPERATING COSTS	\$114.80	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

22.75	26.25	35.00	43.75	47.25
\$4.96	\$4.32	\$3.28	\$2.66	\$2.47

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$5.24	_____
INTEREST	\$4.32	_____
EQUIPMENT:		
DEPRECIATION	\$4.76	_____
INTEREST	\$2.45	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.39	_____
INTEREST	\$4.17	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$16.13	_____
INTEREST	\$14.03	_____
TAXES & INSURANCE	\$5.68	_____
INTEREST	\$0.62	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$68.79	_____
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$183.59	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

22.75	26.25	35.00	43.75	47.25
\$7.98	\$6.94	\$5.25	\$4.23	\$3.93

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9107
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, TOWABLE, 260 ACRES

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$30.01	\$37.52	\$45.02
OWNERSHIP INTEREST	\$20.48	\$25.60	\$30.72
REPAIRS	\$17.26	\$21.58	\$25.89
IRRIGATION FUEL & OIL	\$11.79	\$14.74	\$17.69
FERTILIZER	\$11.62	\$14.53	\$17.43
MACHINERY FUEL & OIL	\$10.26	\$12.82	\$15.38
HERBICIDE	\$9.79	\$12.24	\$14.68
HIRED LABOR	\$7.52	\$9.40	\$11.28
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
SEED	\$5.44	\$6.80	\$8.15
INTEREST ON OP. CAP.	\$4.79	\$5.98	\$7.18
HAUL (CUSTOM HIRE)	\$4.20	\$5.25	\$6.30
FARM TAXES	\$3.63	\$4.54	\$5.45
FUNGICIDE	\$1.27	\$1.59	\$1.90
SPREAD (CUSTOM HIRE)	\$1.13	\$1.42	\$1.70
FARM INSURANCE	\$0.91	\$1.14	\$1.36
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$146.87	\$183.59	\$220.31

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	22.75	\$6.39	\$7.98	\$9.58
-25% OF BASE YIELD	26.25	\$5.55	\$6.94	\$8.33
BASE YIELD	35.00	\$4.20	\$5.25	\$6.29
+25% OF BASE YIELD	43.75	\$3.38	\$4.23	\$5.07
+35% OF BASE YIELD	47.25	\$3.14	\$3.93	\$4.71

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9107
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: CENTER PIVOT, TOWABLE, 260 ACRES

- 20% DEVIATION FROM BASE COSTS: \$146.87 PER ACRE

YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$53.64)	(\$39.98)	(\$5.82)	\$28.33	\$42.00
	\$5.12	(\$28.95)	(\$11.49)	\$32.15	\$75.80	\$93.26
BASE PRICE =	\$6.20	(\$4.27)	\$16.99	\$70.13	\$123.27	\$144.53
	\$7.29	\$20.41	\$45.47	\$108.10	\$170.74	\$195.79
	\$8.37	\$45.10	\$73.95	\$146.08	\$218.21	\$247.06

BASE COSTS: \$183.59 PER ACRE

YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$89.97)	(\$76.42)	(\$42.54)	(\$8.66)	\$4.89
	\$5.12	(\$65.28)	(\$47.94)	(\$4.56)	\$38.81	\$56.16
BASE PRICE =	\$6.20	(\$40.60)	(\$19.45)	\$33.41	\$86.28	\$107.42
	\$7.29	(\$15.92)	\$9.03	\$71.39	\$133.75	\$158.69
	\$8.37	\$8.77	\$37.51	\$109.36	\$181.21	\$209.96

+ 20% DEVIATION FROM BASE COSTS: \$220.31 PER ACRE

YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$126.30)	(\$112.86)	(\$79.26)	(\$45.66)	(\$32.21)
	\$5.12	(\$101.61)	(\$84.38)	(\$41.28)	\$1.81	\$19.05
BASE PRICE =	\$6.20	(\$76.93)	(\$55.89)	(\$3.31)	\$49.28	\$70.32
	\$7.29	(\$52.25)	(\$27.41)	\$34.67	\$96.75	\$121.58
	\$8.37	(\$27.56)	\$1.07	\$72.64	\$144.22	\$172.85

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

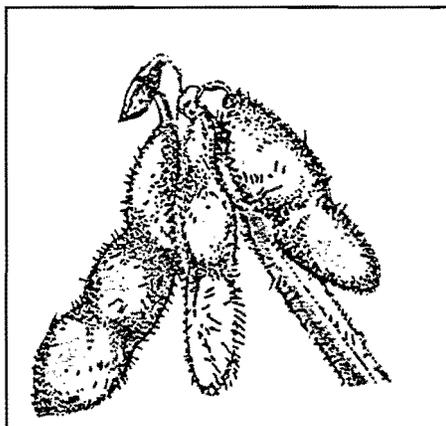
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 120

SOYBEANS

CLAY SOILS



AUTHORS

TONY E. WINDHAM
CLYDE A. STUART
BILLY E. HERRINGTON, JR.
ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$6.80	_____
FERTILIZER	\$0.00	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$19.72	_____
FUNGICIDE	\$1.59	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$15.43	_____
REPAIRS	\$18.40	_____
LABOR	\$7.97	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$0.00	_____
CUSTOM HAUL	\$3.30	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$4.03	_____
TOTAL SPECIFIED OPERATING COSTS	\$77.22	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELLS

	14.30	16.50	22.00	27.50	29.70
	\$5.31	\$4.63	\$3.51	\$2.84	\$2.64

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$6.77	_____
INTEREST	\$5.59	_____
EQUIPMENT:		
DEPRECIATION	\$6.58	_____
INTEREST	\$3.55	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.42	_____
INTEREST	\$4.18	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$3.03	_____
INTEREST	\$0.33	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$41.45	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$118.67	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELLS

	14.30	16.50	22.00	27.50	29.70
	\$8.21	\$7.14	\$5.39	\$4.35	\$4.04

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9108
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$19.82	\$24.77	\$29.73
HERBICIDE	\$15.78	\$19.72	\$23.66
REPAIRS	\$14.72	\$18.40	\$22.08
MACHINERY FUEL & OIL	\$12.34	\$15.43	\$18.51
OWNERSHIP INTEREST	\$10.92	\$13.65	\$16.38
HIRED LABOR	\$6.37	\$7.97	\$9.56
SEED	\$5.44	\$6.80	\$8.15
INTEREST ON OP. CAP.	\$3.22	\$4.03	\$4.83
HAUL (CUSTOM HIRE)	\$2.64	\$3.30	\$3.96
FARM TAXES	\$1.94	\$2.42	\$2.91
FUNGICIDE	\$1.27	\$1.59	\$1.90
FARM INSURANCE	\$0.48	\$0.61	\$0.73
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FERTILIZER			
FINANCIAL SERVICES			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$94.93	\$118.67	\$142.40

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	14.30	\$6.57	\$8.21	\$9.86
-25% OF BASE YIELD	16.50	\$5.71	\$7.14	\$8.57
BASE YIELD	22.00	\$4.32	\$5.39	\$6.47
+25% OF BASE YIELD	27.50	\$3.48	\$4.35	\$5.22
+35% OF BASE YIELD	29.70	\$3.23	\$4.04	\$4.84

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9108
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS:

\$94.93 PER ACRE
 YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	14.30	16.50	22.00	27.50	29.70	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$36.33)	(\$27.74)	(\$6.27)	\$15.19	\$23.78
	\$5.12	(\$20.81)	(\$9.84)	\$17.60	\$45.03	\$56.01
BASE PRICE =	\$6.20	(\$5.30)	\$8.06	\$41.47	\$74.87	\$88.23
	\$7.29	\$10.22	\$25.96	\$65.34	\$104.71	\$120.46
	\$8.37	\$25.73	\$43.87	\$89.21	\$134.54	\$152.68

BASE COSTS:

\$118.67 PER ACRE
 YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	14.30	16.50	22.00	27.50	29.70	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$59.82)	(\$51.30)	(\$30.01)	(\$8.71)	(\$0.19)
	\$5.12	(\$44.30)	(\$33.40)	(\$6.14)	\$21.12	\$32.03
BASE PRICE =	\$6.20	(\$28.79)	(\$15.50)	\$17.73	\$50.96	\$64.25
	\$7.29	(\$13.27)	\$2.41	\$41.60	\$80.80	\$96.48
	\$8.37	\$2.24	\$20.31	\$65.47	\$110.64	\$128.70

+ 20% DEVIATION FROM BASE COSTS:

\$142.40 PER ACRE
 YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	14.30	16.50	22.00	27.50	29.70	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$83.31)	(\$74.86)	(\$53.74)	(\$32.62)	(\$24.17)
	\$5.12	(\$67.79)	(\$56.96)	(\$29.87)	(\$2.78)	\$8.05
BASE PRICE =	\$6.20	(\$52.28)	(\$39.06)	(\$6.00)	\$27.05	\$40.28
	\$7.29	(\$36.76)	(\$21.15)	\$17.87	\$56.89	\$72.50
	\$8.37	(\$21.25)	(\$3.25)	\$41.74	\$86.73	\$104.73

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

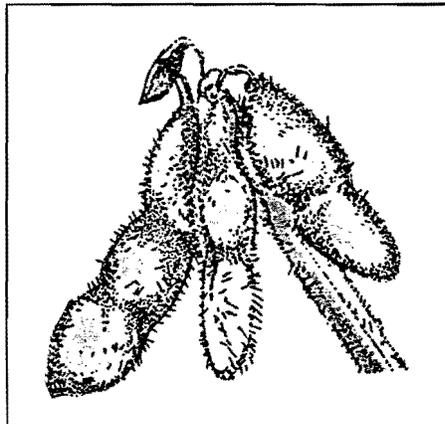
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 121

SOYBEANS

CLAY SOILS, CENTER PIVOT
IRRIGATION, NON-TOWABLE, 130 ACRES



AUTHORS

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ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

Lanny O. Ashlock, Chairman
Claude M. Bonner
Gary Huitink
Edward J. Jordan
M.C. McDaniel
Michael L. May
Clifford S. Snyder
Tony E. Windham

Ford L. Baldwin
Charlie Guy
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H. J. Mascagni
Roy N. Sharp
Phil L. Tacker

THE MENTION OF ANY COMMERCIAL PRODUCT IN THIS ANALYSIS DOES NOT IMPLY ITS ENDORSEMENT BY THE UNITED STATES DEPARTMENT OF AGRICULTURE OR THE UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE OVER OTHER PRODUCTS NOT NAMED, NOR DOES THE OMISSION IMPLY THAT THEY ARE NOT SATISFACTORY.

SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$6.80	_____
FERTILIZER	\$0.00	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$19.72	_____
FUNGICIDE	\$1.59	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$0.00	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$17.55	_____
REPAIRS	\$20.32	_____
LABOR	\$9.05	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$14.74	_____
REPAIRS	\$5.81	_____
IRRIGATION LABOR	\$1.38	_____
CUSTOM SPREAD	\$0.00	_____
CUSTOM HAUL	\$6.00	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$5.66	_____
TOTAL SPECIFIED OPERATING COSTS	\$108.61	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

	YIELD IN BUSHELS				
	26.00	30.00	40.00	50.00	54.00
	\$4.09	\$3.57	\$2.72	\$2.20	\$2.05

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$7.92	_____
INTEREST	\$6.53	_____
EQUIPMENT:		
DEPRECIATION	\$7.19	_____
INTEREST	\$3.88	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$11.42	_____
INTEREST	\$4.18	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$26.49	_____
INTEREST	\$22.58	_____
TAXES & INSURANCE	\$8.45	_____
INTEREST	\$0.93	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$99.56	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$208.17	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

	YIELD IN BUSHELS				
	26.00	30.00	40.00	50.00	54.00
	\$7.92	\$6.89	\$5.20	\$4.20	\$3.90

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9109
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: CENTER PIVOT, NON-TOWABLE, 130 ACRES

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$42.41	\$53.01	\$63.61
OWNERSHIP INTEREST	\$30.48	\$38.11	\$45.73
REPAIRS	\$20.90	\$26.12	\$31.35
HERBICIDE	\$15.78	\$19.72	\$23.66
MACHINERY FUEL & OIL	\$14.04	\$17.55	\$21.06
IRRIGATION FUEL & OIL	\$11.79	\$14.74	\$17.69
HIRED LABOR	\$8.35	\$10.43	\$12.52
SEED	\$5.44	\$6.80	\$8.15
FARM TAXES	\$5.41	\$6.76	\$8.11
HAUL (CUSTOM HIRE)	\$4.80	\$6.00	\$7.20
INTEREST ON OP. CAP.	\$4.53	\$5.66	\$6.79
FARM INSURANCE	\$1.35	\$1.69	\$2.03
FUNGICIDE	\$1.27	\$1.59	\$1.90
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FERTILIZER			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$166.54	\$208.17	\$249.81

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	26.00	\$6.34	\$7.92	\$9.51
-25% OF BASE YIELD	30.00	\$5.51	\$6.89	\$8.26
BASE YIELD	40.00	\$4.16	\$5.20	\$6.25
+25% OF BASE YIELD	50.00	\$3.36	\$4.20	\$5.03
+35% OF BASE YIELD	54.00	\$3.12	\$3.90	\$4.68

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, 1991
 ENTERPRISE FILE NO.: SOY9109
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: CENTER PIVOT, NON-TOWABLE, 130 ACRES

- 20% DEVIATION FROM BASE COSTS: \$166.54 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$59.99)	(\$44.37)	(\$5.34)	\$33.70	\$49.31
	\$5.12	(\$31.78)	(\$11.82)	\$38.06	\$87.95	\$107.90
BASE PRICE =	\$6.20	(\$3.57)	\$20.73	\$81.46	\$142.20	\$166.49
	\$7.29	\$24.64	\$53.28	\$124.86	\$196.45	\$225.08
	\$8.37	\$52.85	\$85.83	\$168.26	\$250.70	\$283.67

BASE COSTS: \$208.17 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$101.18)	(\$85.69)	(\$46.97)	(\$8.26)	\$7.23
	\$5.12	(\$72.97)	(\$53.14)	(\$3.57)	\$45.99	\$65.82
BASE PRICE =	\$6.20	(\$44.76)	(\$20.59)	\$39.83	\$100.24	\$124.41
	\$7.29	(\$16.55)	\$11.96	\$83.23	\$154.49	\$183.00
	\$8.37	\$11.66	\$44.51	\$126.63	\$208.74	\$241.59

+ 20% DEVIATION FROM BASE COSTS: \$249.81 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$142.37)	(\$127.01)	(\$88.61)	(\$50.21)	(\$34.85)
	\$5.12	(\$114.16)	(\$94.46)	(\$45.21)	\$4.04	\$23.74
BASE PRICE =	\$6.20	(\$85.95)	(\$61.91)	(\$1.81)	\$58.29	\$82.33
	\$7.29	(\$57.74)	(\$29.36)	\$41.59	\$112.54	\$140.92
	\$8.37	(\$29.53)	\$3.19	\$84.99	\$166.79	\$199.51

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
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AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
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AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
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AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
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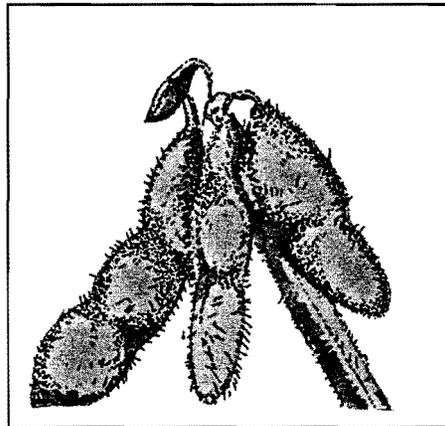
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 122

SOYBEANS

FOLLOWING WHEAT,
LOAMY SOILS, FLOOD IRRIGATION



AUTHORS

TONY E. WINDHAM
CLYDE A. STUART
BILLY E. HERRINGTON, JR.
ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

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machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION SOYBEAN COMMITTEE

Lanny O. Ashlock, Chairman	Ford L. Baldwin
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Gary Huitink	Donald R. Johnson
Edward J. Jordan	Gus M. Lorenz
M.C. McDaniel	H. J. Mascagni
Michael L. May	Roy N. Sharp
Clifford S. Snyder	Phil L. Tacker
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SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
SEED			\$6.80		
FERTILIZER			\$14.53		
LIME + APPLICATION			\$8.46		
HERBICIDE			\$13.25		
FUNGICIDE			\$1.59		
INSECTICIDE			\$0.00		
DEFOLIANT			\$0.00		
AERIAL APPLICATION			\$0.00		
MACHINERY:					
FUEL, OIL, LUBRICANTS			\$14.91		
REPAIRS			\$17.07		
LABOR			\$8.00		
IRRIGATION:					
FUEL, OIL, LUBRICANTS			\$14.15		
REPAIRS			\$2.86		
IRRIGATION LABOR			\$6.62		
CUSTOM SPREAD			\$1.42		
CUSTOM HAUL			\$5.25		
CUSTOM DRY OR GINNING			\$0.00		
MISCELLANEOUS			\$1.25		
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.			\$6.39		
TOTAL SPECIFIED OPERATING COSTS			\$122.54		
PER UNIT BRAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
	YIELD IN BUSHELS				
	22.75	26.25	35.00	43.75	47.25
	\$5.30	\$4.62	\$3.50	\$2.83	\$2.63
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
TRACTORS:					
DEPRECIATION			\$6.35		
INTEREST			\$5.24		
EQUIPMENT:					
DEPRECIATION			\$5.99		
INTEREST			\$3.17		
SPECIAL EQUIPMENT:					
DEPRECIATION			\$11.42		
INTEREST			\$4.18		
MISCELLANEOUS:					
DEPRECIATION			\$0.00		
INTEREST			\$0.00		
IRRIGATION:					
DEPRECIATION			\$8.16		
INTEREST			\$7.62		
TAXES & INSURANCE			\$4.59		
INTEREST			\$0.51		
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS			\$57.24		
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS			\$179.78		
PER UNIT BRAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
	YIELD IN BUSHELS				
	22.75	26.25	35.00	43.75	47.25
	\$7.82	\$6.80	\$5.14	\$4.14	\$3.85
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9110
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$25.54	\$31.93	\$38.31
OWNERSHIP INTEREST	\$16.57	\$20.72	\$24.86
REPAIRS	\$15.94	\$19.93	\$23.91
MACHINERY FUEL & OIL	\$11.93	\$14.91	\$17.89
HIRED LABOR	\$11.70	\$14.63	\$17.55
FERTILIZER	\$11.62	\$14.53	\$17.43
IRRIGATION FUEL & OIL	\$11.32	\$14.15	\$16.98
HERBICIDE	\$10.60	\$13.25	\$15.90
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
SEED	\$5.44	\$6.80	\$8.15
INTEREST ON OP. CAP.	\$5.11	\$6.39	\$7.67
HAUL (CUSTOM HIRE)	\$4.20	\$5.25	\$6.30
FARM TAXES	\$2.94	\$3.67	\$4.41
FUNGICIDE	\$1.27	\$1.59	\$1.90
SPREAD (CUSTOM HIRE)	\$1.13	\$1.42	\$1.70
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.73	\$0.92	\$1.10
AERIAL APPLI. (CUSTOM HIRE)			
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$143.82	\$179.78	\$215.74

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	22.75	\$6.25	\$7.82	\$9.38
-25% OF BASE YIELD	26.25	\$5.44	\$6.80	\$8.16
BASE YIELD	35.00	\$4.11	\$5.14	\$6.16
+25% OF BASE YIELD	43.75	\$3.31	\$4.14	\$4.97
+35% OF BASE YIELD	47.25	\$3.08	\$3.85	\$4.62

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9110
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$143.82 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$50.59)	(\$36.93)	(\$2.77)	\$31.38	\$45.04
	\$5.12	(\$25.91)	(\$8.45)	\$35.20	\$78.85	\$96.31
BASE PRICE =	\$6.20	(\$1.22)	\$20.03	\$73.18	\$126.32	\$147.58
	\$7.29	\$23.46	\$48.52	\$111.15	\$173.79	\$198.84
	\$8.37	\$48.14	\$77.00	\$149.13	\$221.26	\$250.11

BASE COSTS: \$179.78 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$86.16)	(\$72.61)	(\$38.73)	(\$4.85)	\$8.70
	\$5.12	(\$61.48)	(\$44.13)	(\$0.75)	\$42.62	\$59.97
BASE PRICE =	\$6.20	(\$36.79)	(\$15.65)	\$37.22	\$90.09	\$111.23
	\$7.29	(\$12.11)	\$12.84	\$75.20	\$137.55	\$162.50
	\$8.37	\$12.58	\$41.32	\$113.17	\$185.02	\$213.76

+ 20% DEVIATION FROM BASE COSTS: \$215.74 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$121.73)	(\$108.29)	(\$74.69)	(\$41.08)	(\$27.64)
	\$5.12	(\$97.04)	(\$79.81)	(\$36.71)	\$6.38	\$23.62
BASE PRICE =	\$6.20	(\$72.36)	(\$51.32)	\$1.26	\$53.85	\$74.89
	\$7.29	(\$47.68)	(\$22.84)	\$39.24	\$101.32	\$126.15
	\$8.37	(\$22.99)	\$5.64	\$77.21	\$148.79	\$177.42

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

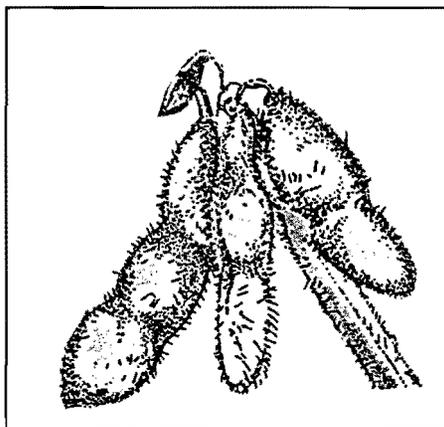
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 123

SOYBEANS

NO-TILL, FOLLOWING WHEAT,
LOAMY SOILS, FLOOD IRRIGATION



AUTHORS

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EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

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SPECIFIED OPERATING COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
SEED			\$9.06		
FERTILIZER			\$14.53		
LIME + APPLICATION			\$8.46		
HERBICIDE			\$43.66		
FUNGICIDE			\$2.11		
INSECTICIDE			\$0.00		
DEFOLIANT			\$0.00		
AERIAL APPLICATION			\$8.50		
MACHINERY:					
FUEL, OIL, LUBRICANTS			\$10.71		
REPAIRS			\$12.35		
LABOR			\$6.77		
IRRIGATION:					
FUEL, OIL, LUBRICANTS			\$14.15		
REPAIRS			\$2.86		
IRRIGATION LABOR			\$6.62		
CUSTOM SPREAD			\$1.42		
CUSTOM HAUL			\$5.25		
CUSTOM DRY OR GINNING			\$0.00		
MISCELLANEOUS			\$1.25		
CROP INSURANCE PREMIUM					
OTHER					
INTEREST ON OP. CAP.			\$8.12		
TOTAL SPECIFIED OPERATING COSTS			\$155.83		
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
	YIELD IN BUSHEL				
	22.75	26.25	35.00	43.75	47.25
	\$6.76	\$5.88	\$4.45	\$3.59	\$3.34
SPECIFIED OWNERSHIP COSTS					
RESOURCE OR INPUT	PER ACRE COST			YOUR COST	
TRACTORS:					
DEPRECIATION			\$4.03		
INTEREST			\$3.32		
EQUIPMENT:					
DEPRECIATION			\$3.05		
INTEREST			\$1.68		
SPECIAL EQUIPMENT:					
DEPRECIATION			\$11.37		
INTEREST			\$4.16		
MISCELLANEOUS:					
DEPRECIATION			\$0.00		
INTEREST			\$0.00		
IRRIGATION:					
DEPRECIATION			\$8.16		
INTEREST			\$7.62		
TAXES & INSURANCE			\$3.82		
INTEREST			\$0.42		
OVERHEAD LABOR					
OTHER OVERHEAD					
LAND & PROPERTY TAX					
MANAGEMENT					
TOTAL SPECIFIED OWNERSHIP COSTS			\$47.64		
TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS			\$203.47		
PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
	YIELD IN BUSHEL				
	22.75	26.25	35.00	43.75	47.25
	\$8.86	\$7.70	\$5.81	\$4.68	\$4.35
NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.					

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: SOYBEANS, NO-TILL, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9111
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
HERBICIDE	\$34.93	\$43.66	\$52.39
DEPRECIATION	\$21.29	\$26.61	\$31.94
OWNERSHIP INTEREST	\$13.77	\$17.21	\$20.65
REPAIRS	\$12.17	\$15.21	\$18.25
FERTILIZER	\$11.62	\$14.53	\$17.43
IRRIGATION FUEL & OIL	\$11.32	\$14.15	\$16.98
HIRED LABOR	\$10.72	\$13.39	\$16.07
MACHINERY FUEL & OIL	\$8.57	\$10.71	\$12.85
SEED	\$7.25	\$9.06	\$10.87
AERIAL APPLI. (CUSTOM HIRE)	\$6.80	\$8.50	\$10.20
LIME + APPLICATION	\$6.77	\$8.46	\$10.16
INTEREST ON OP. CAP.	\$6.50	\$8.12	\$9.75
HAUL (CUSTOM HIRE)	\$4.20	\$5.25	\$6.30
FARM TAXES	\$2.44	\$3.05	\$3.66
FUNGICIDE	\$1.69	\$2.11	\$2.53
SPREAD (CUSTOM HIRE)	\$1.13	\$1.42	\$1.70
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.61	\$0.76	\$0.92
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
INSECTICIDE			
LAND CHARGE			
LEASE PAYMENTS			
MACHINE HIRE			
MANAGEMENT			
OVERHEAD			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$162.78	\$203.47	\$244.16

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	22.75	\$7.09	\$8.86	\$10.63
-25% OF BASE YIELD	26.25	\$6.16	\$7.70	\$9.24
BASE YIELD	35.00	\$4.65	\$5.81	\$6.98
+25% OF BASE YIELD	43.75	\$3.75	\$4.68	\$5.62
+35% OF BASE YIELD	47.25	\$3.48	\$4.35	\$5.22

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: SOYBEANS, NO-TILL, FOLLOWING WHEAT, 1991
 ENTERPRISE FILE NO.: SOY9111
 LOCATION: ARKANSAS
 SOILS TYPE: LOAMY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$162.78 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$69.54)	(\$55.88)	(\$21.73)	\$12.43	\$26.09
	\$5.12	(\$44.86)	(\$27.40)	\$16.25	\$59.90	\$77.36
BASE PRICE =	\$6.20	(\$20.17)	\$1.08	\$54.22	\$107.37	\$128.62
	\$7.29	\$4.51	\$29.56	\$92.20	\$154.84	\$179.89
	\$8.37	\$29.19	\$58.04	\$130.17	\$202.30	\$231.16

BASE COSTS: \$203.47 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$109.85)	(\$96.30)	(\$62.42)	(\$28.54)	(\$14.99)
	\$5.12	(\$85.16)	(\$67.82)	(\$24.44)	\$18.93	\$36.28
BASE PRICE =	\$6.20	(\$60.48)	(\$39.34)	\$13.53	\$66.40	\$87.54
	\$7.29	(\$35.80)	(\$10.85)	\$51.51	\$113.86	\$138.81
	\$8.37	(\$11.11)	\$17.63	\$89.48	\$161.33	\$190.07

+ 20% DEVIATION FROM BASE COSTS: \$244.16 PER ACRE
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	22.75	26.25	35.00	43.75	47.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$4.03	(\$150.15)	(\$136.71)	(\$103.11)	(\$69.51)	(\$56.07)
	\$5.12	(\$125.47)	(\$108.23)	(\$65.14)	(\$22.04)	(\$4.81)
BASE PRICE =	\$6.20	(\$100.79)	(\$79.75)	(\$27.16)	\$25.42	\$46.46
	\$7.29	(\$76.10)	(\$51.27)	\$10.81	\$72.89	\$97.73
	\$8.37	(\$51.42)	(\$22.79)	\$48.79	\$120.36	\$148.99

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

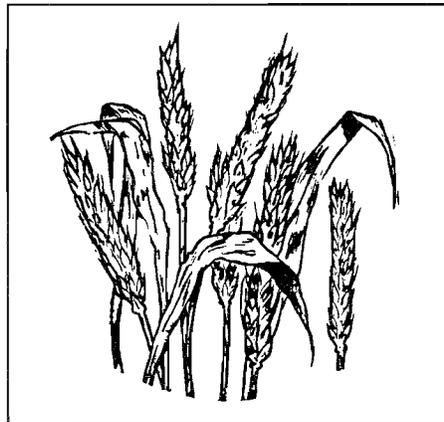
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 110

WHEAT

LOAMY SOILS



AUTHORS

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ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

ESTIMATING PRODUCTION COSTS IN ARKANSAS

INTRODUCTION

Estimating Production Costs in Arkansas is an Extension Technical Bulletin prepared by the Agricultural Economics Section within the University of Arkansas Cooperative Extension Service. The authors are Economists specializing in management and finance of the farm business.

The primary purpose of this analysis is to provide a systematic procedure for estimating the specified costs of producing a defined enterprise. Most users of this information should think of these budgets as a first approximation and then make appropriate adjustments using the "YOUR COST" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the agricultural industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

This publication has seven major parts: A written discussion, page 2; a summary of specified operating and ownership costs, page 3; a sensitivity analysis, page 4; returns above total specified costs at various yield, price, and cost combinations, page 5; a sequential listing of field operations, pages 6 and 7.

SPECIFIED OPERATING AND OWNERSHIP COSTS

Specified operating and ownership costs for this particular enterprise, location, soil type, and irrigation method are located on page 3. The specified operating costs are derived from the sequential listing of operations presented on pages 6 and 7. Breakeven prices for total specified operating costs are given for a base yield and at deviations of 25 and 35 percent.

Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

machinery. Various financing arrangements and tax depreciation methods can produce costs that vary significantly from these estimates in a given year. The ability to estimate the actual cost is a complex economic procedure whereby cash accounting and economic costs may vary greatly.

SENSITIVITY ANALYSIS

A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantities may vary, costs are increased and decreased by 20 percent as shown on page 4. A per unit breakeven price is provided for a base yield and at yields of 25 and 35 percent above and below the base yield. These breakeven prices account for changes in costs due to yield differences, such as hauling and drying.

RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

SEQUENCE OF OPERATIONS

A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Nathan Mckinney, Chairman
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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$9.17	_____
FERTILIZER	\$32.90	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$0.00	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$4.25	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$8.93	_____
REPAIRS	\$12.32	_____
LABOR	\$4.94	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$0.00	_____
CUSTOM HAUL	\$6.75	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$4.36	_____
TOTAL SPECIFIED OPERATING COSTS	\$83.61	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST

YIELD IN BUSHELS

	29.25	33.75	45.00	56.25	60.75
	\$2.77	\$2.42	\$1.86	\$1.52	\$1.42

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$3.69	_____
INTEREST	\$3.04	_____
EQUIPMENT:		
DEPRECIATION	\$4.40	_____
INTEREST	\$2.72	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$9.59	_____
INTEREST	\$3.52	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$2.11	_____
INTEREST	\$0.23	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$29.31	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS

\$112.91

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST

YIELD IN BUSHELS

	29.25	33.75	45.00	56.25	60.75
	\$3.78	\$3.29	\$2.51	\$2.04	\$1.90

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: WHEAT, FOLLOWING SOYBEANS OR FALLOW
 ENTERPRISE FILE NO.: WHT9101, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$26.32	\$32.90	\$39.48
DEPRECIATION	\$14.15	\$17.69	\$21.22
REPAIRS	\$9.86	\$12.32	\$14.78
OWNERSHIP INTEREST	\$7.61	\$9.51	\$11.41
SEED	\$7.34	\$9.17	\$11.00
MACHINERY FUEL & OIL	\$7.14	\$8.93	\$10.71
HAUL (CUSTOM HIRE)	\$5.40	\$6.75	\$8.10
HIRED LABOR	\$3.95	\$4.94	\$5.92
INTEREST ON OP. CAP.	\$3.49	\$4.36	\$5.23
AERIAL APPLI. (CUSTOM HIRE)	\$3.40	\$4.25	\$5.10
FARM TAXES	\$1.35	\$1.69	\$2.02
FARM INSURANCE	\$0.34	\$0.42	\$0.51
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
HERBICIDE			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE			
MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$90.33	\$112.91	\$135.50

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	29.25	\$3.02	\$3.78	\$4.53
-25% OF BASE YIELD	33.75	\$2.63	\$3.29	\$3.95
BASE YIELD	45.00	\$2.01	\$2.51	\$3.01
+25% OF BASE YIELD	56.25	\$1.63	\$2.04	\$2.45
+35% OF BASE YIELD	60.75	\$1.52	\$1.90	\$2.28

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: WHEAT, FOLLOWING SOYBEANS OR FALLOW
 ENTERPRISE FILE NO.: WHT9101, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS: **\$90.33 PER ACRE**
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	29.25	33.75	45.00	56.25	60.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.72	(\$37.95)	(\$30.77)	(\$12.82)	\$5.14	\$12.32
	\$2.19	(\$24.39)	(\$15.12)	\$8.05	\$31.22	\$40.49
BASE PRICE =	\$2.65	(\$10.82)	\$0.53	\$28.92	\$57.31	\$68.66
	\$3.11	\$2.74	\$16.18	\$49.79	\$83.39	\$96.84
	\$3.58	\$16.30	\$31.83	\$70.66	\$109.48	\$125.01

BASE COSTS: **\$112.91 PER ACRE**
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	29.25	33.75	45.00	56.25	60.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.72	(\$60.04)	(\$53.00)	(\$35.40)	(\$17.80)	(\$10.76)
	\$2.19	(\$46.47)	(\$37.35)	(\$14.53)	\$8.28	\$17.41
BASE PRICE =	\$2.65	(\$32.91)	(\$21.70)	\$6.34	\$34.37	\$45.58
	\$3.11	(\$19.34)	(\$6.04)	\$27.20	\$60.45	\$73.75
	\$3.58	(\$5.78)	\$9.61	\$48.07	\$86.54	\$101.93

+ 20% DEVIATION FROM BASE COSTS: **\$135.50 PER ACRE**
YIELD IN BUSHELS

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	29.25	33.75	45.00	56.25	60.75	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.72	(\$82.12)	(\$75.23)	(\$57.98)	(\$40.74)	(\$33.85)
	\$2.19	(\$68.56)	(\$59.57)	(\$37.12)	(\$14.66)	(\$5.67)
BASE PRICE =	\$2.65	(\$54.99)	(\$43.92)	(\$16.25)	\$11.43	\$22.50
	\$3.11	(\$41.43)	(\$28.27)	\$4.62	\$37.52	\$50.67
	\$3.58	(\$27.86)	(\$12.62)	\$25.49	\$63.60	\$78.85

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
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AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
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AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
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AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
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ESTIMATING 1991 PRODUCTION
COSTS IN ARKANSAS

EXTENSION TECHNICAL BULLETIN NO. 111

WHEAT

CLAY SOILS



AUTHORS

TONY E. WINDHAM
CLYDE A. STUART
BILLY E. HERRINGTON, JR.
ROBERT E. COATS, JR.

EXTENSION ECONOMISTS - MANAGEMENT

UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION SERVICE,
United States Department of Agriculture, and County Governments Cooperating

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Total specified ownership costs and breakeven prices for total specified costs are also given on page 3. The depreciation and interest cost components represent an average cost allocated over the entire useful life of the

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RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 5 are estimated enterprise returns above total specified costs at various yield, price, and cost combinations. *Not included in these returns are charges for land, risk, overhead labor, other overhead, crop insurance, real estate taxes, and management.*

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A sequential listing of each operation performed for this enterprise is given on pages 6 and 7. These operations provide the foundation on which the economic analysis is based. Machinery operating and ownership costs are presented on page 6 followed by quantities and prices of materials used on page 7.

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SPECIFIED OPERATING COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
SEED	\$9.17	_____
FERTILIZER	\$24.86	_____
LIME + APPLICATION	\$0.00	_____
HERBICIDE	\$0.00	_____
FUNGICIDE	\$0.00	_____
INSECTICIDE	\$0.00	_____
DEFOLIANT	\$0.00	_____
AERIAL APPLICATION	\$4.25	_____
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$8.15	_____
REPAIRS	\$11.31	_____
LABOR	\$4.37	_____
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	_____
REPAIRS	\$0.00	_____
IRRIGATION LABOR	\$0.00	_____
CUSTOM SPREAD	\$0.00	_____
CUSTOM HAUL	\$6.00	_____
CUSTOM DRY OR GINNING	\$0.00	_____
MISCELLANEOUS	\$0.00	_____
CROP INSURANCE PREMIUM		_____
OTHER		_____
INTEREST ON OP. CAP.	\$3.75	_____
TOTAL SPECIFIED OPERATING COSTS	\$71.86	_____

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST					
YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00
	\$2.68	\$2.34	\$1.80	\$1.47	\$1.37

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR COST
TRACTORS:		
DEPRECIATION	\$3.26	_____
INTEREST	\$2.69	_____
EQUIPMENT:		
DEPRECIATION	\$3.97	_____
INTEREST	\$2.43	_____
SPECIAL EQUIPMENT:		
DEPRECIATION	\$9.59	_____
INTEREST	\$3.52	_____
MISCELLANEOUS:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
IRRIGATION:		
DEPRECIATION	\$0.00	_____
INTEREST	\$0.00	_____
TAXES & INSURANCE	\$1.96	_____
INTEREST	\$0.22	_____
OVERHEAD LABOR		_____
OTHER OVERHEAD		_____
LAND & PROPERTY TAX		_____
MANAGEMENT		_____
TOTAL SPECIFIED OWNERSHIP COSTS	\$27.64	_____

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS	\$99.49	_____
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PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST					
YIELD IN BUSHELS					
	26.00	30.00	40.00	50.00	54.00
	\$3.74	\$3.26	\$2.49	\$2.02	\$1.88

NOT INCLUDED IN THIS REPORT ARE CHARGES FOR LAND, RISK, OVERHEAD LABOR, OTHER OVERHEAD, CROP INSURANCE, REAL ESTATE TAXES, AND MGT.

SENSITIVITY ANALYSIS:

EFFECTS OF A 20% VARIATION IN SPECIFIED INPUT COSTS ON
PER UNIT BREAKEVEN PRICES.

ENTERPRISE: WHEAT, FOLLOWING SOYBEANS OR FALLOW
 ENTERPRISE FILE NO.: WHT9102, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 3	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$19.89	\$24.86	\$29.83
DEPRECIATION	\$13.46	\$16.82	\$20.19
REPAIRS	\$9.04	\$11.31	\$13.57
SEED	\$7.34	\$9.17	\$11.00
OWNERSHIP INTEREST	\$7.08	\$8.85	\$10.62
MACHINERY FUEL & OIL	\$6.52	\$8.15	\$9.78
HAUL (CUSTOM HIRE)	\$4.80	\$6.00	\$7.20
HIRED LABOR	\$3.50	\$4.37	\$5.25
AERIAL APPLI. (CUSTOM HIRE)	\$3.40	\$4.25	\$5.10
INTEREST ON OP. CAP.	\$3.00	\$3.75	\$4.50
FARM TAXES	\$1.26	\$1.57	\$1.88
FARM INSURANCE	\$0.31	\$0.39	\$0.47
CROP INSURANCE PREM.			
CROP MKT. & COM. STORAGE			
DEFOLIANT			
DRY OR GINNING (COMMERCIAL)			
DRYING FUEL			
FINANCIAL SERVICES			
FUNGICIDE			
HERBICIDE			
INSECTICIDE			
IRRIGATION FUEL & OIL			
LAND CHARGE			
LEASE PAYMENTS			
LIME + APPLICATION			
MACHINE HIRE MANAGEMENT			
MISCELLANEOUS			
OVERHEAD			
SPREAD (CUSTOM HIRE)			
UTILITIES			
TOTAL SPECIFIED COST/ACRE	\$79.59	\$99.49	\$119.39

PER UNIT BREAKEVEN PRICE—TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	26.00	\$2.99	\$3.74	\$4.49
-25% OF BASE YIELD	30.00	\$2.61	\$3.26	\$3.92
BASE YIELD	40.00	\$1.99	\$2.49	\$2.98
+25% OF BASE YIELD	50.00	\$1.62	\$2.02	\$2.43
+35% OF BASE YIELD	54.00	\$1.51	\$1.88	\$2.26

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: WHEAT, FOLLOWING SOYBEANS OR FALLOW
 ENTERPRISE FILE NO.: WHT9102, 1990-91
 LOCATION: ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS: \$79.59 PER ACRE

YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.72	(\$33.04)	(\$26.65)	(\$10.69)	\$5.27	\$11.65
	\$2.19	(\$20.98)	(\$12.74)	\$7.86	\$28.45	\$36.69
BASE PRICE =	\$2.65	(\$8.92)	\$1.17	\$26.41	\$51.64	\$61.73
	\$3.11	\$3.14	\$15.09	\$44.96	\$74.83	\$86.78
	\$3.58	\$15.19	\$29.00	\$63.51	\$98.02	\$111.82

BASE COSTS: \$99.49 PER ACRE

YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.72	(\$52.49)	(\$46.23)	(\$30.59)	(\$14.95)	(\$8.69)
	\$2.19	(\$40.43)	(\$32.32)	(\$12.04)	\$8.24	\$16.35
BASE PRICE =	\$2.65	(\$28.38)	(\$18.41)	\$6.51	\$31.43	\$41.39
	\$3.11	(\$16.32)	(\$4.50)	\$25.06	\$54.61	\$66.44
	\$3.58	(\$4.26)	\$9.42	\$43.61	\$77.80	\$91.48

+ 20% DEVIATION FROM BASE COSTS: \$119.39 PER ACRE

YIELD IN BUSHEL

PRODUCER PRICE ESTIMATES	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	RETURNS PER ACRE					
	\$1.72	(\$71.95)	(\$65.82)	(\$50.49)	(\$35.16)	(\$29.03)
	\$2.19	(\$59.89)	(\$51.90)	(\$31.94)	(\$11.98)	(\$3.99)
BASE PRICE =	\$2.65	(\$47.83)	(\$37.99)	(\$13.39)	\$11.21	\$21.05
	\$3.11	(\$35.77)	(\$24.08)	\$5.16	\$34.40	\$46.09
	\$3.58	(\$23.72)	(\$10.17)	\$23.71	\$57.59	\$71.14

LIST OF PUBLICATIONS FOR ESTIMATING 1991 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-52-11-90	ETB 109	Oats, Loamy Soils, Arkansas
AG-53-11-90	ETB 110	Wheat, Loamy Soils, Arkansas
AG-54-11-90	ETB 111	Wheat, Clay Soils, Arkansas
AG-55-11-90	ETB 112	Rapeseed (Canola), Loamy Soils, Arkansas
AG-56-11-90	ETB 113	Soybeans, Loamy Soils, Arkansas
AG-57-11-90	ETB 114	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-58-11-90	ETB 115	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-59-11-90	ETB 116	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-60-11-90	ETB 117	Soybeans, Drilled, Loamy Soils, Arkansas
AG-61-11-90	ETB 118	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-62-11-90	ETB 119	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-63-11-90	ETB 120	Soybeans, Clay Soils, Arkansas
AG-64-11-90	ETB 121	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-65-11-90	ETB 122	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-66-11-90	ETB 123	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-67-11-90	ETB 124	Rice, Silt Loam Soils, Eastern Arkansas
AG-68-11-90	ETB 125	Rice, Clay Soils, Eastern Arkansas
AG-69-11-90	ETB 126	Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-70-11-90	ETB 127	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-71-11-90	ETB 128	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-72-11-90	ETB 129	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-73-11-90	ETB 130	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-74-11-90	ETB 131	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-75-11-90	ETB 132	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-76-11-90	ETB 133	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-77-11-90	ETB 134	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-78-11-90	ETB 135	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-79-11-90	ETB 136	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-80-11-90	ETB 137	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-81-11-90	ETB 138	Corn, Loamy Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-82-11-90	ETB 139	Grain Sorghum, Loamy Soils, Arkansas
AG-83-11-90	ETB 140	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-84-11-90	ETB 141	Grain Sorghum, Clay Soils, Arkansas
AG-85-11-90	ETB 142	Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

INFORMATION PRESENTED IN THIS DOCUMENT IS PREPARED SOLELY AS A GENERAL GUIDE AND IS NOT INTENDED TO RECOGNIZE OR PREDICT THE COSTS AND RETURNS FROM ANY ONE PARTICULAR FARM OR RANCH OPERATION

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