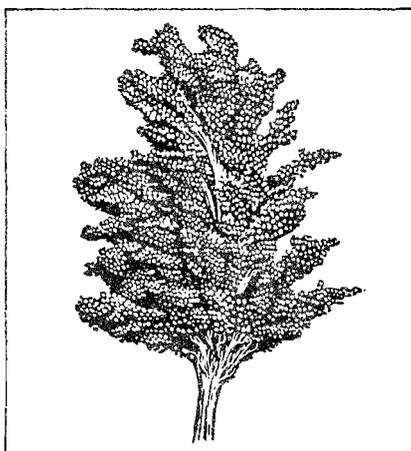


**ESTIMATING PRODUCTION COSTS  
IN ARKANSAS**

**EXTENSION TECHNICAL BULLETIN NO. 65**

**GRAIN SORGHUM**

**LOAMY SOILS**



**BY**

**CLYDE A. STUART  
BILLY E. HERRINGTON, JR.  
JERRY DON CLARK, JR.  
TONY E. WINDHAM  
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**EXTENSION ECONOMISTS - MANAGEMENT**

**UNIVERSITY OF ARKANSAS  
COOPERATIVE EXTENSION SERVICE  
AGRICULTURAL ECONOMICS SECTION**

# ESTIMATING PRODUCTION COSTS IN ARKANSAS

## INTRODUCTION

Estimating Production Costs 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 specified costs associated with producing a defined enterprise. Costs are first developed for each field operation and then aggregated by input item.

This publication has seven major parts: A written discussion, page 1; a summary of specified operating and ownership costs, page 2; a sensitivity analysis, page 3; returns above total specified costs at various yield, price, and cost combinations, page 4; a sequential listing of field operations, pages 5 and 6; and a list of all publications for estimating enterprise production costs for 1989 crops, page 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 2. The specified operating costs are derived from the sequential listing of operations presented on pages 5 and 6. 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 2. 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 quantity may vary, costs are increased and decreased by 20 percent as shown on page 3. 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 and drying.

## RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 4 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 5 and 6. These operations provide the foundation on which the economic analysis is based. Note the specified costs associated with each field operation.

## ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

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SENSITIVITY ANALYSIS:

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

ENTERPRISE: GRAIN SORGHUM  
 ENTERPRISE FILE NO.: GR8901  
 LOCATION: ARKANSAS  
 SOILS TYPE: LOAMY  
 IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 2	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$24.36	\$30.45	\$36.54
DEPRECIATION	\$14.52	\$18.15	\$21.78
DRY OR GINNING (COMMERCIAL)	\$11.48	\$14.35	\$17.22
REPAIRS	\$10.42	\$13.03	\$15.63
HAUL (CUSTOM HIRE)	\$8.79	\$10.99	\$13.19
OWNERSHIP INTEREST	\$7.69	\$9.61	\$11.53
HERBICIDE	\$6.53	\$8.17	\$9.80
MACHINERY FUEL & OIL	\$5.55	\$6.94	\$8.33
HIRED LABOR	\$4.69	\$5.86	\$7.04
SEED	\$4.10	\$5.13	\$6.16
SPREAD (CUSTOM HIRE)	\$4.00	\$5.00	\$6.00
INTEREST ON OP. CAP.	\$3.76	\$4.71	\$5.65
FARM TAXES	\$1.36	\$1.70	\$2.05
FARM INSURANCE	\$0.34	\$0.43	\$0.51
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      \$107.61                      \$134.51                      \$161.41  
 =====

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS		BREAKEVEN PRICE		
	YIELD			
-35% OF BASE YIELD	26.00	\$3.86	\$4.82	\$5.79
-25% OF BASE YIELD	30.00	\$3.41	\$4.27	\$5.12
BASE YIELD	40.00	\$2.69	\$3.36	\$4.04
+25% OF BASE YIELD	50.00	\$2.26	\$2.82	\$3.38
+35% OF BASE YIELD	54.00	\$2.13	\$2.66	\$3.19

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM  
 ENTERPRISE FILE NO.: GR8901  
 LOCATION: ARKANSAS  
 SOILS TYPE: LOAMY  
 IRRIGATION METHOD: NONE

- 20% DEVIATION FROM BASE COSTS: \$107.61 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.84	(\$26.41)	(\$17.11)	\$6.15	\$29.38	\$38.68
	\$3.61	(\$6.51)	\$5.85	\$36.77	\$67.65	\$80.02
BASE PRICE =	\$4.38	\$13.39	\$28.82	\$67.39	\$105.93	\$121.35
	\$5.14	\$33.30	\$51.78	\$98.01	\$144.20	\$162.69
	\$5.91	\$53.20	\$74.75	\$128.63	\$182.48	\$204.03

BASE COSTS: \$134.51 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.84	(\$51.50)	(\$42.72)	(\$20.75)	\$1.17	\$9.95
	\$3.61	(\$31.60)	(\$19.76)	\$9.87	\$39.45	\$51.29
BASE PRICE =	\$4.38	(\$11.69)	\$3.21	\$40.49	\$77.72	\$92.63
	\$5.14	\$8.21	\$26.17	\$71.11	\$116.00	\$133.96
	\$5.91	\$28.11	\$49.14	\$101.73	\$154.27	\$175.30

+ 20% DEVIATION FROM BASE COSTS: \$161.41 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	26.00	30.00	40.00	50.00	54.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.84	(\$76.59)	(\$68.33)	(\$47.65)	(\$27.03)	(\$18.77)
	\$3.61	(\$56.69)	(\$45.36)	(\$17.03)	\$11.24	\$22.57
BASE PRICE =	\$4.38	(\$36.78)	(\$22.40)	\$13.59	\$49.52	\$63.90
	\$5.14	(\$16.88)	\$0.57	\$44.21	\$87.79	\$105.24
	\$5.91	\$3.02	\$23.53	\$74.83	\$126.07	\$146.58





**LIST OF PUBLICATIONS FOR  
ESTIMATING PRODUCTION COSTS**

- ETB 36 - Estimating Farm Machinery Costs in Arkansas, May 1988
- ETB 37 - Wheat, Loamy Soils, Arkansas
- ETB 38 - Wheat, Clay Soils, Arkansas
- ETB 39 - Oats, Loamy Soils, Arkansas
- ETB 40 - Soybeans, Loamy Soils, Arkansas
- ETB 41 - Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
- ETB 42 - Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
- ETB 43 - Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
- ETB 44 - Soybeans, Drilled, Loamy Soils, Arkansas
- ETB 45 - Soybeans, Following Wheat, Loamy Soils, Arkansas
- ETB 46 - Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
- ETB 47 - Soybeans, Clay Soils, Arkansas
- ETB 48 - Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 acres, Arkansas
- ETB 49 - Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
- ETB 50 - Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
- ETB 51 - Rice, Silt Loam Soils, Eastern Arkansas
- ETB 52 - Rice, Clay Soils, Eastern Arkansas
- ETB 53 - Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
- ETB 54 - Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
- ETB 55 - Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
- ETB 56 - Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
- ETB 57 - Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
- ETB 58 - Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
- ETB 59 - Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
- ETB 60 - Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
- ETB 61 - Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
- ETB 62 - Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
- ETB 63 - Corn, Loamy Soils, Flood Irrigation, Arkansas
- ETB 64 - Corn, Loamy Soils, Furrow Irrigation, Arkansas
- ETB 65 - Grain Sorghum, Loamy Soils, Arkansas
- ETB 66 - Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
- ETB 67 - Grain Sorghum, Clay Soils, Arkansas
- ETB 68 - 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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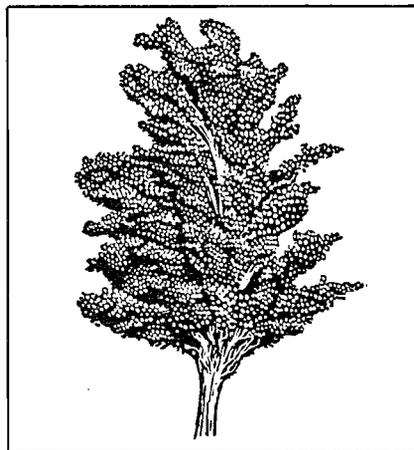
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**ESTIMATING PRODUCTION COSTS  
IN ARKANSAS**

**EXTENSION TECHNICAL BULLETIN NO. 66**

**GRAIN SORGHUM**

**LOAMY SOILS,  
FLOOD IRRIGATION**



**BY**

**CLYDE A. STUART  
BILLY E. HERRINGTON, JR.  
JERRY DON CLARK, JR.  
TONY E. WINDHAM  
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**EXTENSION ECONOMISTS - MANAGEMENT**

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This publication has seven major parts: A written discussion, page 1; a summary of specified operating and ownership costs, page 2; a sensitivity analysis, page 3; returns above total specified costs at various yield, price, and cost combinations, page 4; a sequential listing of field operations, pages 5 and 6; and a list of all publications for estimating enterprise production costs for 1989 crops, page 7.

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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.

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A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantity may vary, costs are increased and decreased by 20 percent as shown on page 3. 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 and drying.

## RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 4 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 5 and 6. These operations provide the foundation on which the economic analysis is based. Note the specified costs associated with each field operation.

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**SPECIFIED OPERATING COSTS**

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATED COST
SEED	\$5.13	
FERTILIZER	\$34.23	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$8.17	
FUNGICIDE	\$0.00	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$0.00	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$7.60	
REPAIRS	\$13.72	
LABOR	\$6.37	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$5.45	
REPAIRS	\$2.26	
IRRIGATION LABOR	\$3.98	
CUSTOM SPREAD	\$5.00	
CUSTOM HAUL	\$16.51	
CUSTOM DRY OR GINNING	\$21.56	
MISCELLANEOUS	\$1.25	
CROP INSURANCE PREMIUM		
OTHER		
INTEREST ON OP. CAP.	\$6.03	

TOTAL SPECIFIED OPERATING COSTS \$137.26

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST  
YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$3.17	\$2.83	\$2.29	\$1.96	\$1.86

**SPECIFIED OWNERSHIP COSTS**

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$5.05	
INTEREST	\$4.17	
EQUIPMENT:		
DEPRECIATION	\$4.51	
INTEREST	\$2.38	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$9.39	
INTEREST	\$3.44	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$6.39	
INTEREST	\$5.88	
TAXES & INSURANCE	\$3.61	
INTEREST	\$0.40	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$45.21

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$182.47

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST  
YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$4.33	\$3.84	\$3.04	\$2.56	\$2.42

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  
 ENTERPRISE FILE NO.: GR8902  
 LOCATION: ARKANSAS  
 SOILS TYPE: LOAMY  
 IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 2	+20% DEVIATION
(A)	(B)	(D)	(F)
FERTILIZER	\$27.38	\$34.23	\$41.08
DEPRECIATION	\$20.27	\$25.33	\$30.40
DRY OR GINNING (COMMERCIAL)	\$17.25	\$21.56	\$25.87
HAUL (CUSTOM HIRE)	\$13.21	\$16.51	\$19.81
OWNERSHIP INTEREST	\$13.02	\$16.27	\$19.52
REPAIRS	\$12.78	\$15.97	\$19.17
HIRED LABOR	\$8.28	\$10.35	\$12.42
HERBICIDE	\$6.53	\$8.17	\$9.80
MACHINERY FUEL & OIL	\$6.08	\$7.60	\$9.12
INTEREST ON OP. CAP.	\$4.83	\$6.03	\$7.24
IRRIGATION FUEL & OIL	\$4.36	\$5.45	\$6.54
SEED	\$4.10	\$5.13	\$6.16
SPREAD (CUSTOM HIRE)	\$4.00	\$5.00	\$6.00
FARM TAXES	\$2.31	\$2.89	\$3.46
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.58	\$0.72	\$0.87
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      \$145.97      \$182.47      \$218.96

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	39.00	\$3.46	\$4.33	\$5.19
-25% OF BASE YIELD	45.00	\$3.07	\$3.84	\$4.61
BASE YIELD	60.00	\$2.43	\$3.04	\$3.65
+25% OF BASE YIELD	75.00	\$2.05	\$2.56	\$3.07
+35% OF BASE YIELD	81.00	\$1.94	\$2.42	\$2.90

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM  
 ENTERPRISE FILE NO.: GR8902  
 LOCATION: ARKANSAS  
 SOILS TYPE: LOAMY  
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$145.97 PER ACRE

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 -					
	\$2.84	(\$24.13)	(\$10.18)	\$24.67	\$59.56	\$73.50
	\$3.61	\$5.72	\$24.26	\$70.60	\$116.97	\$135.51
BASE PRICE =	\$4.38	\$35.58	\$58.71	\$116.53	\$174.38	\$197.51
	\$5.14	\$65.43	\$93.16	\$162.46	\$231.79	\$259.52
	\$5.91	\$95.29	\$127.61	\$208.39	\$289.21	\$321.53

BASE COSTS: \$182.47 PER ACRE

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 -					
	\$2.84	(\$57.89)	(\$44.72)	(\$11.83)	\$21.12	\$34.29
	\$3.61	(\$28.04)	(\$10.28)	\$34.10	\$78.53	\$96.29
BASE PRICE =	\$4.38	\$1.82	\$24.17	\$80.03	\$135.95	\$158.30
	\$5.14	\$31.67	\$58.62	\$125.96	\$193.36	\$220.31
	\$5.91	\$61.53	\$93.07	\$171.89	\$250.77	\$282.31

+ 20% DEVIATION FROM BASE COSTS: \$218.96 PER ACRE

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 -					
	\$2.84	(\$91.65)	(\$79.26)	(\$48.32)	(\$17.32)	(\$4.93)
	\$3.61	(\$61.80)	(\$44.82)	(\$2.39)	\$40.10	\$57.08
BASE PRICE =	\$4.38	(\$31.95)	(\$10.37)	\$43.54	\$97.51	\$119.08
	\$5.14	(\$2.09)	\$24.08	\$89.47	\$154.92	\$181.09
	\$5.91	\$27.76	\$58.53	\$135.40	\$212.33	\$243.10





**LIST OF PUBLICATIONS FOR  
ESTIMATING PRODUCTION COSTS**

- ETB 36 - Estimating Farm Machinery Costs in Arkansas, May 1988
- ETB 37 - Wheat, Loamy Soils, Arkansas
- ETB 38 - Wheat, Clay Soils, Arkansas
- ETB 39 - Oats, Loamy Soils, Arkansas
- ETB 40 - Soybeans, Loamy Soils, Arkansas
- ETB 41 - Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
- ETB 42 - Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
- ETB 43 - Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
- ETB 44 - Soybeans, Drilled, Loamy Soils, Arkansas
- ETB 45 - Soybeans, Following Wheat, Loamy Soils, Arkansas
- ETB 46 - Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
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- ETB 48 - Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 acres, Arkansas
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- ETB 59 - Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
- ETB 60 - Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
- ETB 61 - Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
- ETB 62 - Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
- ETB 63 - Corn, Loamy Soils, Flood Irrigation, Arkansas
- ETB 64 - Corn, Loamy Soils, Furrow Irrigation, Arkansas
- ETB 65 - Grain Sorghum, Loamy Soils, Arkansas
- ETB 66 - Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
- ETB 67 - Grain Sorghum, Clay Soils, Arkansas
- ETB 68 - Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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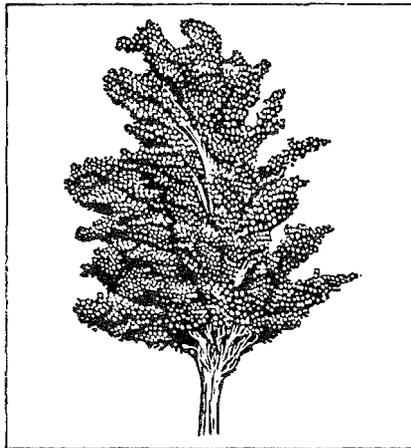
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**ESTIMATING PRODUCTION COSTS  
IN ARKANSAS**

**EXTENSION TECHNICAL BULLETIN NO. 67**

**GRAIN SORGHUM**

**CLAY SOILS**



**BY**

**CLYDE A. STUART  
BILLY E. HERRINGTON, JR.  
JERRY DON CLARK, JR.  
TONY E. WINDHAM  
ROBERT E. COATS, JR.**

**EXTENSION ECONOMISTS - MANAGEMENT**

**UNIVERSITY OF ARKANSAS  
COOPERATIVE EXTENSION SERVICE  
AGRICULTURAL ECONOMICS SECTION**

# ESTIMATING PRODUCTION COSTS IN ARKANSAS

## INTRODUCTION

Estimating Production Costs 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 specified costs associated with producing a defined enterprise. Costs are first developed for each field operation and then aggregated by input item.

This publication has seven major parts: A written discussion, page 1; a summary of specified operating and ownership costs, page 2; a sensitivity analysis, page 3; returns above total specified costs at various yield, price, and cost combinations, page 4; a sequential listing of field operations, pages 5 and 6; and a list of all publications for estimating enterprise production costs for 1989 crops, page 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 2. The specified operating costs are derived from the sequential listing of operations presented on pages 5 and 6. 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 2. 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 quantity may vary, costs are increased and decreased by 20 percent as shown on page 3. 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 and drying.

## RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 4 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 5 and 6. These operations provide the foundation on which the economic analysis is based. Note the specified costs associated with each field operation.

## ACKNOWLEDGEMENTS EXTENSION FEED GRAIN COMMITTEE

Donald Adams, Chairman	Ford L. Baldwin
Raymond C. Benz	Claude M. Bonner
Stanley L. Chapman	Dennis R. Garbissier
Marc C. Hirrel	Donald R. Johnson
Terry L. Kirkpatrick	H. J. Mascagni
Michael L. May	John H. Muir
Robert A. Pierce	Roy N. Sharr
J. Ples Spradley	Phil L. Tacker
Timothy Tripp	

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 ESTIMATED COST
SEED	\$5.13	
FERTILIZER	\$18.48	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$9.24	
FUNGICIDE	\$0.00	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$0.00	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$7.67	
REPAIRS	\$14.05	
LABOR	\$6.37	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$0.00	
REPAIRS	\$0.00	
IRRIGATION LABOR	\$0.00	
CUSTOM SPREAD	\$5.00	
CUSTOM HAUL	\$10.99	
CUSTOM DRY OR GINNING	\$14.35	
MISCELLANEOUS	\$0.00	
CROP INSURANCE PREMIUM		
OTHER		
INTEREST ON OP. CAP.	\$4.23	
<b>TOTAL SPECIFIED OPERATING COSTS</b>	<b>\$95.50</b>	

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST  
YIELD IN CWT.

	26.00	30.00	40.00	50.00	54.00
	\$3.32	\$2.97	\$2.39	\$2.04	\$1.94

**SPECIFIED OWNERSHIP COSTS**

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$5.09	
INTEREST	\$4.20	
EQUIPMENT:		
DEPRECIATION	\$4.77	
INTEREST	\$2.56	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$9.39	
INTEREST	\$3.44	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
TAXES & INSURANCE	\$2.32	
INTEREST	\$0.25	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		
<b>TOTAL SPECIFIED OWNERSHIP COSTS</b>	<b>\$32.02</b>	

**TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS**      **\$127.52**

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST  
YIELD IN CWT.

	26.00	30.00	40.00	50.00	54.00
	\$4.56	\$4.04	\$3.19	\$2.68	\$2.53

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  
ENTERPRISE FILE NO.: GR8903  
LOCATION: ARKANSAS  
SOILS TYPE: CLAY  
IRRIGATION METHOD: NONE

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 2	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$15.40	\$19.25	\$23.09
FERTILIZER	\$14.78	\$18.48	\$22.18
DRY OR GINNING (COMMERCIAL)	\$11.48	\$14.35	\$17.22
REPAIRS	\$11.24	\$14.05	\$16.86
HAUL (CUSTOM HIRE)	\$8.79	\$10.99	\$13.19
OWNERSHIP INTEREST	\$8.36	\$10.45	\$12.54
HERBICIDE	\$7.39	\$9.24	\$11.09
MACHINERY FUEL & OIL	\$6.13	\$7.67	\$9.20
HIRED LABOR	\$5.09	\$6.37	\$7.64
SEED	\$4.10	\$5.13	\$6.16
SPREAD (CUSTOM HIRE)	\$4.00	\$5.00	\$6.00
INTEREST ON OP. CAP.	\$3.38	\$4.23	\$5.08
FARM TAXES	\$1.48	\$1.85	\$2.22
FARM INSURANCE	\$0.37	\$0.46	\$0.56
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      \$102.02                      \$127.52                      \$153.02

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	26.00	\$3.64	\$4.56	\$5.47
-25% OF BASE YIELD	30.00	\$3.23	\$4.04	\$4.84
BASE YIELD	40.00	\$2.55	\$3.19	\$3.83
+25% OF BASE YIELD	50.00	\$2.14	\$2.68	\$3.22
+35% OF BASE YIELD	54.00	\$2.02	\$2.53	\$3.04

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM  
 ENTERPRISE FILE NO.: GR8903  
 LOCATION: ARKANSAS  
 SOILS TYPE: CLAY  
 IRRIGATION METHOD: NONE

=====

- 20% DEVIATION FROM BASE COSTS: \$102.02 PER ACRE

YIELD IN CWT.

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	26.00	30.00	40.00	50.00	54.00	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.84	(\$20.82)	(\$11.52)	\$11.74	\$34.97	\$44.27
	\$3.61	(\$0.92)	\$11.44	\$42.36	\$73.25	\$85.61
BASE PRICE =	\$4.38	\$18.99	\$34.41	\$72.98	\$111.52	\$126.94
	\$5.14	\$38.89	\$57.37	\$103.60	\$149.80	\$168.28
	\$5.91	\$58.79	\$80.34	\$134.22	\$188.07	\$209.62

BASE COSTS: \$127.52 PER ACRE

YIELD IN CWT.

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	26.00	30.00	40.00	50.00	54.00	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.84	(\$44.51)	(\$35.73)	(\$13.76)	\$8.16	\$16.94
	\$3.61	(\$24.61)	(\$12.77)	\$16.86	\$46.44	\$58.28
BASE PRICE =	\$4.38	(\$4.71)	\$10.20	\$47.48	\$84.71	\$99.62
	\$5.14	\$15.20	\$33.16	\$78.10	\$122.99	\$140.95
	\$5.91	\$35.10	\$56.13	\$108.72	\$161.26	\$182.29

+ 20% DEVIATION FROM BASE COSTS: \$153.02 PER ACRE

YIELD IN CWT.

PRODUCER PRICE ESTIMATES	YIELD IN CWT.					
	26.00	30.00	40.00	50.00	54.00	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.84	(\$68.20)	(\$59.94)	(\$39.26)	(\$18.64)	(\$10.38)
	\$3.61	(\$48.30)	(\$36.98)	(\$8.64)	\$19.63	\$30.95
BASE PRICE =	\$4.38	(\$28.40)	(\$14.01)	\$21.98	\$57.91	\$72.29
	\$5.14	(\$8.49)	\$8.95	\$52.60	\$96.18	\$113.63
	\$5.91	\$11.41	\$31.92	\$83.22	\$134.46	\$154.96

=====





**LIST OF PUBLICATIONS FOR  
ESTIMATING PRODUCTION COSTS**

- ETB 36 - Estimating Farm Machinery Costs in Arkansas, May 1988
- ETB 37 - Wheat, Loamy Soils, Arkansas
- ETB 38 - Wheat, Clay Soils, Arkansas
- ETB 39 - Oats, Loamy Soils, Arkansas
- ETB 40 - Soybeans, Loamy Soils, Arkansas
- ETB 41 - Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
- ETB 42 - Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
- ETB 43 - Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
- ETB 44 - Soybeans, Drilled, Loamy Soils, Arkansas
- ETB 45 - Soybeans, Following Wheat, Loamy Soils, Arkansas
- ETB 46 - Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
- ETB 47 - Soybeans, Clay Soils, Arkansas
- ETB 48 - Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 acres, Arkansas
- ETB 49 - Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
- ETB 50 - Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
- ETB 51 - Rice, Silt Loam Soils, Eastern Arkansas
- ETB 52 - Rice, Clay Soils, Eastern Arkansas
- ETB 53 - Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
- ETB 54 - Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
- ETB 55 - Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
- ETB 56 - Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
- ETB 57 - Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
- ETB 58 - Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
- ETB 59 - Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
- ETB 60 - Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
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- ETB 65 - Grain Sorghum, Loamy Soils, Arkansas
- ETB 66 - Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
- ETB 67 - Grain Sorghum, Clay Soils, Arkansas
- ETB 68 - Grain Sorghum, Clay Soils, Flood Irrigation, Arkansas

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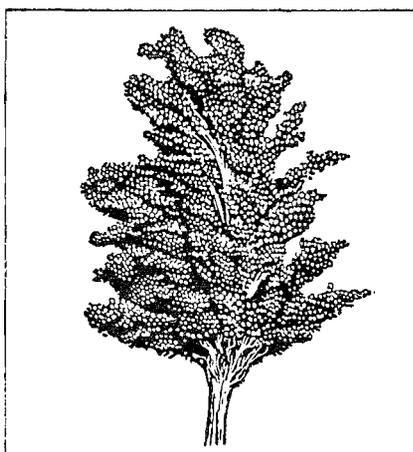
T367-2850-10-88

**ESTIMATING PRODUCTION COSTS  
IN ARKANSAS**

**EXTENSION TECHNICAL BULLETIN NO. 68**

**GRAIN SORGHUM**

**CLAY SOILS,  
FLOOD IRRIGATION**



**BY**

**CLYDE A. STUART  
BILLY E. HERRINGTON, JR.  
JERRY DON CLARK, JR.  
TONY E. WINDHAM  
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**EXTENSION ECONOMISTS - MANAGEMENT**

**UNIVERSITY OF ARKANSAS  
COOPERATIVE EXTENSION SERVICE  
AGRICULTURAL ECONOMICS SECTION**

# ESTIMATING PRODUCTION COSTS IN ARKANSAS

## INTRODUCTION

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The primary purpose of this analysis is to provide a systematic procedure for estimating specified costs associated with producing a defined enterprise. Costs are first developed for each field operation and then aggregated by input item.

This publication has seven major parts: A written discussion, page 1; a summary of specified operating and ownership costs, page 2; a sensitivity analysis, page 3; returns above total specified costs at various yield, price, and cost combinations, page 4; a sequential listing of field operations, pages 5 and 6; and a list of all publications for estimating enterprise production costs for 1989 crops, page 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 2. The specified operating costs are derived from the sequential listing of operations presented on pages 5 and 6. 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 2. 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.

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A sensitivity analysis is presented to provide a broader perspective from which an individual may analyze the specific situation budgeted. Since input prices and quantity may vary, costs are increased and decreased by 20 percent as shown on page 3. 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 and drying.

## RETURNS ABOVE TOTAL SPECIFIED COSTS

Presented on page 4 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 5 and 6. These operations provide the foundation on which the economic analysis is based. Note the specified costs associated with each field operation.

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**SPECIFIED OPERATING COSTS**

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATED COST
SEED	\$5.13	
FERTILIZER	\$22.26	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$9.24	
FUNGICIDE	\$0.00	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$0.00	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$8.33	
REPAIRS	\$14.74	
LABOR	\$6.87	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$5.45	
REPAIRS	\$2.26	
IRRIGATION LABOR	\$3.98	
CUSTOM SPREAD	\$5.00	
CUSTOM HAUL	\$16.51	
CUSTOM DRY OR GINNING	\$21.56	
MISCELLANEOUS	\$1.25	
CROP INSURANCE PREMIUM		
OTHER		
INTEREST ON OP. CAP.	\$5.56	

TOTAL SPECIFIED OPERATING COSTS \$128.14

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$2.94	\$2.63	\$2.14	\$1.84	\$1.75

**SPECIFIED OWNERSHIP COSTS**

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$5.66	
INTEREST	\$4.67	
EQUIPMENT:		
DEPRECIATION	\$5.00	
INTEREST	\$2.70	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$9.39	
INTEREST	\$3.44	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$6.39	
INTEREST	\$5.88	
TAXES & INSURANCE	\$3.79	
INTEREST	\$0.42	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$47.34

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$175.48

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OWNERSHIP & OPERATING COST YIELD IN CWT.

	39.00	45.00	60.00	75.00	81.00
	\$4.15	\$3.68	\$2.92	\$2.47	\$2.33

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: GRAIN SORGHUM  
ENTERPRISE FILE NO.: GR8904  
LOCATION: ARKANSAS  
SOILS TYPE: CLAY  
IRRIGATION METHOD: FLOOD

RESOURCE OR INPUT	-20% DEVIATION	BASE COST PAGE 2	+20% DEVIATION
(A)	(B)	(D)	(F)
DEPRECIATION	\$21.14	\$26.43	\$31.71
FERTILIZER	\$17.81	\$22.26	\$26.71
DRY OR GINNING (COMMERCIAL)	\$17.25	\$21.56	\$25.87
OWNERSHIP INTEREST	\$13.69	\$17.11	\$20.53
REPAIRS	\$13.60	\$17.00	\$20.40
HAUL (CUSTOM HIRE)	\$13.21	\$16.51	\$19.81
HIRED LABOR	\$8.69	\$10.86	\$13.03
HERBICIDE	\$7.39	\$9.24	\$11.09
MACHINERY FUEL & OIL	\$6.66	\$8.33	\$9.99
INTEREST ON OP. CAP.	\$4.45	\$5.56	\$6.67
IRRIGATION FUEL & OIL	\$4.36	\$5.45	\$6.54
SEED	\$4.10	\$5.13	\$6.16
SPREAD (CUSTOM HIRE)	\$4.00	\$5.00	\$6.00
FARM TAXES	\$2.43	\$3.04	\$3.64
MISCELLANEOUS	\$1.00	\$1.25	\$1.50
FARM INSURANCE	\$0.61	\$0.76	\$0.91
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      \$140.38                      \$175.48                      \$210.57

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	39.00	\$3.32	\$4.15	\$4.98
-25% OF BASE YIELD	45.00	\$2.95	\$3.68	\$4.42
BASE YIELD	60.00	\$2.34	\$2.92	\$3.51
+25% OF BASE YIELD	75.00	\$1.98	\$2.47	\$2.96
+35% OF BASE YIELD	81.00	\$1.87	\$2.33	\$2.80

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: GRAIN SORGHUM  
 ENTERPRISE FILE NO.: GR8904  
 LOCATION: ARKANSAS  
 SOILS TYPE: CLAY  
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$140.38 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 - - - - -					
	\$2.84	(\$18.54)	(\$4.59)	\$30.26	\$65.15	\$79.09
	\$3.61	\$11.31	\$29.86	\$76.19	\$122.56	\$141.10
BASE PRICE =	\$4.38	\$41.17	\$64.30	\$122.12	\$179.97	\$203.11
	\$5.14	\$71.02	\$98.75	\$168.05	\$237.38	\$265.11
	\$5.91	\$100.88	\$133.20	\$213.98	\$294.80	\$327.12

BASE COSTS: \$175.48 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 - - - - -					
	\$2.84	(\$50.90)	(\$37.74)	(\$4.84)	\$28.11	\$41.28
	\$3.61	(\$21.05)	(\$3.29)	\$41.09	\$85.52	\$103.28
BASE PRICE =	\$4.38	\$8.80	\$31.16	\$87.02	\$142.93	\$165.29
	\$5.14	\$38.66	\$65.61	\$132.95	\$200.35	\$227.29
	\$5.91	\$68.51	\$100.05	\$178.88	\$257.76	\$289.30

+ 20% DEVIATION FROM BASE COSTS: \$210.57 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 - - - - -					
	\$2.84	(\$83.27)	(\$70.88)	(\$39.93)	(\$8.93)	\$3.46
	\$3.61	(\$53.41)	(\$36.43)	\$6.00	\$48.48	\$65.47
BASE PRICE =	\$4.38	(\$23.56)	(\$1.98)	\$51.93	\$105.90	\$127.47
	\$5.14	\$6.30	\$32.46	\$97.86	\$163.31	\$189.48
	\$5.91	\$36.15	\$66.91	\$143.79	\$220.72	\$251.48





**LIST OF PUBLICATIONS FOR  
ESTIMATING PRODUCTION COSTS**

- ETB 36 - Estimating Farm Machinery Costs in Arkansas, May 1988
- ETB 37 - Wheat, Loamy Soils, Arkansas
- ETB 38 - Wheat, Clay Soils, Arkansas
- ETB 39 - Oats, Loamy Soils, Arkansas
- ETB 40 - Soybeans, Loamy Soils, Arkansas
- ETB 41 - Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
- ETB 42 - Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
- ETB 43 - Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
- ETB 44 - Soybeans, Drilled, Loamy Soils, Arkansas
- ETB 45 - Soybeans, Following Wheat, Loamy Soils, Arkansas
- ETB 46 - Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
- ETB 47 - Soybeans, Clay Soils, Arkansas
- ETB 48 - Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 acres, Arkansas
- ETB 49 - Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
- ETB 50 - Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
- ETB 51 - Rice, Silt Loam Soils, Eastern Arkansas
- ETB 52 - Rice, Clay Soils, Eastern Arkansas
- ETB 53 - Rice, Grand Prairie Soils, Grand Prairie Region, Arkansas
- ETB 54 - Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
- ETB 55 - Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
- ETB 56 - Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
- ETB 57 - Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
- ETB 58 - Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
- ETB 59 - Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
- ETB 60 - Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
- ETB 61 - Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
- ETB 62 - Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
- ETB 63 - Corn, Loamy Soils, Flood Irrigation, Arkansas
- ETB 64 - Corn, Loamy Soils, Furrow Irrigation, Arkansas
- ETB 65 - Grain Sorghum, Loamy Soils, Arkansas
- ETB 66 - Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
- ETB 67 - Grain Sorghum, Clay Soils, Arkansas
- ETB 68 - 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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TB68-2700-10-88