

**ESTIMATING 1990 PRODUCTION
COSTS IN ARKANSAS**

EXTENSION TECHNICAL BULLETIN NO. 87

RICE

**LONG GRAIN, MIDSEASON VARIETY (NEWBONNET),
SILT LOAM SOILS, EASTERN ARKANSAS**



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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 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 quantity 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. Note the specified costs associated with each field operation.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

Ronnie S. Helms, Chairman	Ford L. Baldwin
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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 ESTIMATED COST
SEED	\$13.35	
FERTILIZER	\$32.49	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$19.98	
FUNGICIDE	\$13.30	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$26.60	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$11.18	
REPAIRS	\$22.09	
LABOR	\$9.21	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$20.33	
REPAIRS	\$2.86	
IRRIGATION LABOR	\$7.59	
CUSTOM SPREAD	\$2.50	
CUSTOM HAUL	\$20.45	
CUSTOM DRY OR GINNING	\$47.71	
MISCELLANEOUS	\$4.69	
CROP INSURANCE PREMIUM		
OTHER		
INTEREST ON OP. CAP.	\$11.36	

TOTAL SPECIFIED OPERATING COSTS \$265.70

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST
YIELD IN BUSHELS

	78.00	90.00	120.00	150.00	162.00
	\$3.10	\$2.76	\$2.21	\$1.89	\$1.79

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$7.97	
INTEREST	\$6.57	
EQUIPMENT:		
DEPRECIATION	\$5.22	
INTEREST	\$3.66	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$19.58	
INTEREST	\$7.18	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$8.16	
INTEREST	\$7.62	
TAXES & INSURANCE	\$5.69	
INTEREST	\$0.63	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$72.29

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$337.99

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

	78.00	90.00	120.00	150.00	162.00
	\$4.02	\$3.56	\$2.82	\$2.37	\$2.24

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, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9001
 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	\$32.75	\$40.94	\$49.13
FERTILIZER	\$25.99	\$32.49	\$38.98
AERIAL APPLI. (CUSTOM HIRE)	\$21.28	\$26.60	\$31.92
OWNERSHIP INTEREST	\$20.53	\$25.67	\$30.80
REPAIRS	\$19.96	\$24.95	\$29.94
HAUL (CUSTOM HIRE)	\$16.36	\$20.45	\$24.54
IRRIGATION FUEL & OIL	\$16.26	\$20.33	\$24.40
HERBICIDE	\$15.98	\$19.98	\$23.98
HIRED LABOR	\$13.45	\$16.81	\$20.17
SEED	\$10.68	\$13.35	\$16.02
FUNGICIDE	\$10.64	\$13.30	\$15.96
INTEREST ON OP. CAP.	\$9.09	\$11.36	\$13.64
MACHINERY FUEL & OIL	\$8.95	\$11.18	\$13.42
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM TAXES	\$3.64	\$4.55	\$5.46
SPREAD (CUSTOM HIRE)	\$2.00	\$2.50	\$3.00
FARM INSURANCE	\$0.91	\$1.14	\$1.37
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	\$270.39	\$337.99	\$405.59
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PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS			
	YIELD	BREAKEVEN PRICE	
-35% OF BASE YIELD	78.00	\$3.22	\$4.83
-25% OF BASE YIELD	90.00	\$2.85	\$4.28
BASE YIELD	120.00	\$2.25	\$3.38
+25% OF BASE YIELD	150.00	\$1.90	\$2.84
+35% OF BASE YIELD	162.00	\$1.79	\$2.68

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9001
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$270.39 PER ACRE

PRODUCER PRICE ESTIMATES -----	YIELD IN BUSHELS					
	78.00	90.00	120.00	150.00	162.00	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$70.00)	(\$47.69)	\$8.07	\$63.82	\$86.13
	\$2.95	(\$21.27)	\$8.53	\$83.04	\$157.54	\$187.34
BASE PRICE =	\$3.57	\$27.47	\$64.76	\$158.01	\$251.25	\$288.55
	\$4.19	\$76.20	\$120.99	\$232.98	\$344.96	\$389.76
	\$4.82	\$124.93	\$177.22	\$307.95	\$438.67	\$490.96

BASE COSTS: \$337.99 PER ACRE

PRODUCER PRICE ESTIMATES -----	YIELD IN BUSHELS					
	78.00	90.00	120.00	150.00	162.00	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$132.74)	(\$111.83)	(\$59.53)	(\$7.24)	\$13.68
	\$2.95	(\$84.01)	(\$55.60)	\$15.44	\$86.47	\$114.89
BASE PRICE =	\$3.57	(\$35.28)	\$0.63	\$90.41	\$180.19	\$216.10
	\$4.19	\$13.45	\$56.86	\$165.38	\$273.90	\$317.31
	\$4.82	\$62.18	\$113.08	\$240.35	\$367.61	\$418.52

+ 20% DEVIATION FROM BASE COSTS: \$405.59 PER ACRE

PRODUCER PRICE ESTIMATES -----	YIELD IN BUSHELS					
	78.00	90.00	120.00	150.00	162.00	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$195.49)	(\$175.96)	(\$127.13)	(\$78.30)	(\$58.77)
	\$2.95	(\$146.76)	(\$119.73)	(\$52.16)	\$15.41	\$42.44
BASE PRICE =	\$3.57	(\$98.03)	(\$63.51)	\$22.81	\$109.12	\$143.65
	\$4.19	(\$49.30)	(\$7.28)	\$97.78	\$202.84	\$244.86
	\$4.82	(\$0.57)	\$48.95	\$172.75	\$296.55	\$346.07

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9001
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

MACHINERY COST

OPER- ATION NO.	DATE	OPERATION	WIDTH (FEET)	HORSE POWER PTO	PERFORMANCE RATE (AC/HR)	TIMES OVER (NO.)	OPERATING COST			OWNERSHIP COST			TOTAL COST (M)
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)		
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.000	\$2.90	\$2.10	\$2.54	\$2.29	\$0.52	\$10.35	
4	4	CUSTOM APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	4	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
5	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.000	\$1.26	\$0.77	\$1.31	\$0.99	\$0.23	\$4.56	
6	4	BED CONDITIONER	20.0	155.0	8.727	1.000	\$1.12	\$0.77	\$1.09	\$0.87	\$0.20	\$4.05	
7	4	GRAIN DRILL	20.0	140.0	8.145	1.000	\$1.58	\$0.75	\$2.16	\$1.38	\$0.31	\$6.18	
8	4	ROLLER	27.0	140.0	16.691	1.000	\$0.45	\$0.37	\$0.73	\$0.71	\$0.16	\$2.41	
9	4	LASER SURVEY	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
10	4	DITCHER	3.0	140.0	0.436	0.010	\$0.15	\$0.14	\$0.29	\$0.20	\$0.04	\$0.83	
11	4	LEVEE DISK	9.0	155.0	4.800	0.300	\$0.48	\$0.42	\$0.54	\$0.41	\$0.09	\$1.94	
12	4	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.100	\$0.18	\$0.14	\$0.21	\$0.15	\$0.03	\$0.71	
13	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.050	\$0.16	\$0.15	\$0.16	\$0.14	\$0.03	\$0.65	
	5	LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
14	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.050	\$0.03	\$0.03	\$0.10	\$0.06	\$0.01	\$0.25	
15	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
16	5	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
17	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
18	5	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
19	6	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
20	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	HERBICIDE	0.0	0.0	0.000	0.100	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	7	IRRIGATION	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	8	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
27	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.900	\$8.40	\$2.68	\$16.32	\$5.98	\$1.36	\$34.74	

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9001
 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		\$0.43	\$4.77
2								0.00%	\$0.00		\$0.43	\$4.77
3								0.00%	\$0.00		\$1.37	\$11.72
4	CSTM AP FERT BY GRND		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
	POTASH	0-0-60	POUND	\$0.080	100.000			100.00%	\$8.00		\$0.00	\$8.00
5								0.00%	\$0.00		\$0.50	\$5.06
6								0.00%	\$0.00		\$0.57	\$4.62
7	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$12.13		\$1.17	\$19.49
8								0.00%	\$0.00		\$0.30	\$2.71
9	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
10								0.00%	\$0.00		\$0.11	\$0.94
11								0.00%	\$0.00		\$0.31	\$2.25
12	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$1.21		\$0.20	\$2.12
13	LEVEE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
14								0.00%	\$0.00		\$0.14	\$0.39
15	CSTM AP PROP. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	PROPANIL	4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
16	CSTM AP FERT. BY AIR		POUND	\$0.0400	165.000			100.00%	\$6.60		\$0.00	\$6.60
	UREA	46%	POUND	\$0.083	165.000			100.00%	\$13.70		\$0.00	\$13.70
17	CSTM AP PROP. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	PROPANIL	4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
18	FLOOD IRRIGATION		AC-IN.	\$1.009	4.000			100.00%	\$4.04	\$2.30	\$0.00	\$6.34
19	FLOOD IRRIGATION		AC-IN.	\$1.009	6.000			100.00%	\$6.06	\$3.45	\$0.00	\$9.50
20	CSTM LEVEE SPRAYER		ACRE	\$1.750	1.000			100.00%	\$1.75		\$0.00	\$1.75
	2,4-D	4LB/GAL	PINT	\$0.906	2.000			100.00%	\$0.18		\$0.00	\$0.18
21	CSTM AP FERT. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
22	CSTM AP FERT. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
23	CSTM AP FUNG. BY AIR		ACRE	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
	BENLATE	50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
24	FLOOD IRRIGATION		AC-IN.	\$1.009	12.500			100.00%	\$12.62	\$7.18	\$0.00	\$19.80
25	CSTM AP FUNG. BY AIR		ACRE	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
	BENLATE	50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
26	FLOOD IRRIGATION		AC-IN.	\$1.009	8.000			100.00%	\$8.07	\$4.60	\$0.00	\$12.67
27								0.00%	\$0.00		\$1.47	\$36.21

LIST OF PUBLICATIONS FOR ESTIMATING 1990 PRODUCTION COSTS

ECONOMIC SUMMARY	ETB	<u>DESCRIPTION</u>
AG-2-10-89	ETB 71	Oats, Loamy Soils, Arkansas
AG-3-10-89	ETB 72	Wheat, Loamy Soils, Arkansas
AG-4-10-89	ETB 73	Wheat, Clay Soils, Arkansas
AG-5-10-89	ETB 75	Rapeseed (Canola), Loamy Soils, Arkansas
AG-6-10-89	ETB 76	Soybeans, Loamy Soils, Arkansas
AG-7-10-89	ETB 77	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-8-10-89	ETB 78	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-9-10-89	ETB 79	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-10-10-89	ETB 80	Soybeans, Drilled, Loamy Soils, Arkansas
AG-11-10-89	ETB 81	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-12-10-89	ETB 82	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-13-10-89	ETB 83	Soybeans, Clay Soils, Arkansas
AG-14-10-89	ETB 84	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-15-10-89	ETB 85	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-16-10-89	ETB 86	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-17-10-89	ETB 87	Rice, Long Grain, Midseason Variety (Newbonnet), Silt Loam Soils, Eastern Arkansas
AG-18-10-89	ETB 88	Rice, Long Grain, Very Short Season Variety (Tebonnet), Silt Loam Soils, Eastern Arkansas
AG-19-10-89	ETB 89	Rice, Long Grain, Semi-dwarf Variety (Lemont), Silt Loam Soils, Eastern Arkansas
AG-20-10-89	ETB 90	Rice, Medium Grain, Short Season Variety (Mars), Silt Loam Soils, Eastern Arkansas
AG-21-10-89	ETB 91	Rice, Long Grain, Midseason Variety (Newbonnet), Clay Soils, Eastern Arkansas
AG-22-10-89	ETB 92	Rice, Long Grain, Midseason Variety (Newbonnet), Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-23-10-89	ETB 93	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-24-10-89	ETB 94	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-25-10-89	ETB 95	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-26-10-89	ETB 96	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-27-10-89	ETB 97	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-28-10-89	ETB 98	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-29-10-89	ETB 99	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-30-10-89	ETB 100	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-31-10-89	ETB 101	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-32-10-89	ETB 102	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-33-10-89	ETB 103	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-34-10-89	ETB 104	Grain Sorghum, Loamy Soils, Arkansas
AG-35-10-89	ETB 105	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-36-10-89	ETB 106	Grain Sorghum, Clay Soils, Arkansas
AG-37-10-89	ETB 107	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

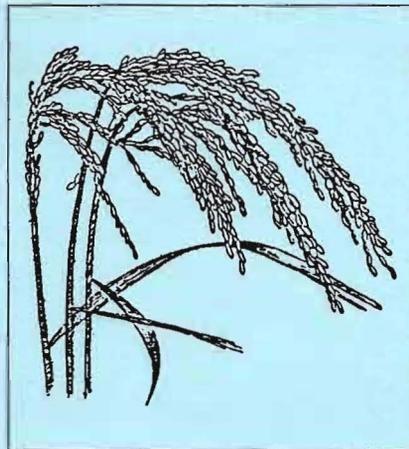
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**ESTIMATING 1990 PRODUCTION
COSTS IN ARKANSAS**

EXTENSION TECHNICAL BULLETIN NO. 88

RICE

**LONG GRAIN, VERY SHORT SEASON VARIETY
(TEBONNET), SILT LOAM SOILS, EASTERN ARKANSAS**



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COOPERATIVE EXTENSION SERVICE
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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 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 quantity 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. Note the specified costs associated with each field operation.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

Ronnie S. Helms, Chairman	Ford L. Baldwin
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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 ESTIMATED COST
SEED	\$14.62	
FERTILIZER	\$27.92	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$19.98	
FUNGICIDE	\$13.30	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$24.40	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$11.16	
REPAIRS	\$22.06	
LABOR	\$9.18	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$17.33	
REPAIRS	\$2.86	
IRRIGATION LABOR	\$6.47	
CUSTOM SPREAD	\$2.50	
CUSTOM HAUL	\$19.77	
CUSTOM DRY OR GINNING	\$46.12	
MISCELLANEOUS	\$4.69	
CROP INSURANCE PREMIUM		
OTHER		
INTEREST ON OP. CAP.	\$10.79	

TOTAL SPECIFIED OPERATING COSTS \$253.15

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST
YIELD IN BUSHELS

YIELD	75.40	87.00	116.00	145.00	156.60
PRICE	\$3.05	\$2.72	\$2.18	\$1.86	\$1.77

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$7.94	
INTEREST	\$6.55	
EQUIPMENT:		
DEPRECIATION	\$5.21	
INTEREST	\$3.66	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$19.58	
INTEREST	\$7.18	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$8.16	
INTEREST	\$7.62	
TAXES & INSURANCE	\$5.69	
INTEREST	\$0.63	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$72.23

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$325.38

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

YIELD	75.40	87.00	116.00	145.00	156.60
PRICE	\$4.00	\$3.55	\$2.81	\$2.36	\$2.23

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, LONG GRAIN, VERY SHORT SEASON VARIETY (TEBONNET)
ENTERPRISE FILE NO.: RC9002
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)	\$36.90	\$46.12	\$55.35
DEPRECIATION	\$32.73	\$40.91	\$49.09
FERTILIZER	\$22.34	\$27.92	\$33.50
OWNERSHIP INTEREST	\$20.51	\$25.64	\$30.77
REPAIRS	\$19.93	\$24.92	\$29.90
AERIAL APPLI. (CUSTOM HIRE)	\$19.52	\$24.40	\$29.28
HERBICIDE	\$15.98	\$19.98	\$23.98
HAUL (CUSTOM HIRE)	\$15.81	\$19.77	\$23.72
IRRIGATION FUEL & OIL	\$13.86	\$17.33	\$20.80
HIRED LABOR	\$12.52	\$15.65	\$18.78
SEED	\$11.69	\$14.62	\$17.54
FUNGICIDE	\$10.64	\$13.30	\$15.96
MACHINERY FUEL & OIL	\$8.93	\$11.16	\$13.39
INTEREST ON OP. CAP.	\$8.63	\$10.79	\$12.95
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM TAXES	\$3.64	\$4.55	\$5.46
SPREAD (CUSTOM HIRE)	\$2.00	\$2.50	\$3.00
FARM INSURANCE	\$0.91	\$1.14	\$1.36
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	\$260.31	\$325.38	\$390.46
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PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS			
	YIELD	BREAKEVEN PRICE	
-35% OF BASE YIELD	75.40	\$3.20	\$4.81
-25% OF BASE YIELD	87.00	\$2.84	\$4.26
BASE YIELD	116.00	\$2.24	\$3.37
+25% OF BASE YIELD	145.00	\$1.89	\$2.83
+35% OF BASE YIELD	156.60	\$1.78	\$2.67

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, LONG GRAIN, VERY SHORT SEASON VARIETY (TEBONNET)
 ENTERPRISE FILE NO.: RC9002
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$260.31 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	75.40	87.00	116.00	145.00	156.60	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$66.59)	(\$45.03)	\$8.87	\$62.77	\$84.33
	\$2.95	(\$19.48)	\$9.32	\$81.34	\$153.36	\$182.17
BASE PRICE =	\$3.57	\$27.62	\$63.68	\$153.81	\$243.95	\$280.00
	\$4.19	\$74.73	\$118.03	\$226.28	\$334.54	\$377.84
	\$4.82	\$121.84	\$172.38	\$298.76	\$425.13	\$475.67

BASE COSTS: \$325.38 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	75.40	87.00	116.00	145.00	156.60	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$126.98)	(\$106.76)	(\$56.21)	(\$5.65)	\$14.57
	\$2.95	(\$79.87)	(\$52.40)	\$16.27	\$84.93	\$112.40
BASE PRICE =	\$3.57	(\$32.76)	\$1.95	\$88.74	\$175.52	\$210.24
	\$4.19	\$14.34	\$56.30	\$161.21	\$266.11	\$308.07
	\$4.82	\$61.45	\$110.66	\$233.68	\$356.70	\$405.91

+ 20% DEVIATION FROM BASE COSTS: \$390.46 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	75.40	87.00	116.00	145.00	156.60	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$187.37)	(\$168.48)	(\$121.28)	(\$74.08)	(\$55.20)
	\$2.95	(\$140.26)	(\$114.13)	(\$48.81)	\$16.51	\$42.64
BASE PRICE =	\$3.57	(\$93.15)	(\$59.78)	\$23.66	\$107.10	\$140.47
	\$4.19	(\$46.05)	(\$5.42)	\$96.13	\$197.69	\$238.31
	\$4.82	\$1.06	\$48.93	\$168.60	\$288.27	\$336.14

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, LONG GRAIN, VERY SHORT SEASON VARIETY (TEBONNET)
 ENTERPRISE FILE NO.: RC9002
 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)	OPERATING COST			OWNERSHIP COST			TOTAL COST (M)
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)		
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
2	4	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
3	4	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.000	\$2.90	\$2.10	\$2.54	\$2.29	\$0.52	\$10.35	
4	5	CUSTOM APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
5	5	FIELD CULTIVATOR	25.5	175.0	9.891	1.000	\$1.26	\$0.77	\$1.31	\$0.99	\$0.23	\$4.56	
6	5	BED CONDITIONER	20.0	155.0	8.727	1.000	\$1.12	\$0.77	\$1.09	\$0.87	\$0.20	\$4.05	
7	5	GRAIN DRILL	20.0	140.0	8.145	1.000	\$1.58	\$0.75	\$2.16	\$1.38	\$0.31	\$6.18	
8	5	ROLLER	27.0	140.0	16.691	1.000	\$0.45	\$0.37	\$0.73	\$0.71	\$0.16	\$2.41	
9	5	LASER SURVEY	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
10	5	DITCHER	3.0	140.0	0.436	0.010	\$0.15	\$0.14	\$0.29	\$0.20	\$0.04	\$0.83	
11	5	LEVEE DISK	9.0	155.0	4.800	0.300	\$0.48	\$0.42	\$0.54	\$0.41	\$0.09	\$1.94	
12	5	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.100	\$0.18	\$0.14	\$0.21	\$0.15	\$0.03	\$0.71	
13	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.050	\$0.16	\$0.15	\$0.16	\$0.14	\$0.03	\$0.65	
	5	LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
14	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.050	\$0.03	\$0.03	\$0.10	\$0.06	\$0.01	\$0.25	
15	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
16	6	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	6	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
17	6	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	6	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
18	6	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
19	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	HERBICIDE	0.0	0.0	0.000	0.100	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
20	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	7	IRRIGATION	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	8	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.900	\$8.40	\$2.68	\$16.32	\$5.98	\$1.36	\$34.74	
	9	COMBINE, 4WD, DOWN RICE	20.0	190.0	1.697	0.100	\$1.68	\$0.54	\$3.26	\$1.20	\$0.27	\$6.95	

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, LONG GRAIN, VERY SHORT SEASON VARIETY (TEBONNET)
 ENTERPRISE FILE NO.: RC9002
 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		\$0.43	\$4.77
2								0.00%	\$0.00		\$0.43	\$4.77
3								0.00%	\$0.00		\$1.37	\$11.72
4	CSTM AP FERT BY GRND POTASH		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
		0-0-60	POUND	\$0.080	100.000			100.00%	\$8.00		\$0.00	\$8.00
5								0.00%	\$0.00		\$0.50	\$5.06
6								0.00%	\$0.00		\$0.57	\$4.62
7	RICE SEED		BUSHEL	\$6.500	2.044			100.00%	\$13.29		\$1.17	\$20.64
8								0.00%	\$0.00		\$0.30	\$2.71
9	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
10								0.00%	\$0.00		\$0.11	\$0.94
11								0.00%	\$0.00		\$0.31	\$2.25
12	RICE SEED		BUSHEL	\$6.500	2.044			100.00%	\$1.33		\$0.20	\$2.24
13								0.00%	\$0.00		\$0.62	\$1.27
	LEEVE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
14								0.00%	\$0.00		\$0.14	\$0.39
15	CSTM AP PROP. BY AIR PROPANIL		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
16	CSTM AP FERT. BY AIR UREA		POUND	\$0.0400	110.000			100.00%	\$4.40		\$0.00	\$4.40
		46%	POUND	\$0.083	110.000			100.00%	\$9.13		\$0.00	\$9.13
17	CSTM AP PROP. BY AIR PROPANIL		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
18	FLOOD IRRIGATION		AC-IN.	\$1.026	10.000			100.00%	\$10.26	\$6.74	\$0.00	\$16.99
19	CSTM LEVEE SPRAYER 2,4-D		ACRE	\$1.750	1.000			100.00%	\$1.75		\$0.00	\$1.75
		4LB/GAL	PINT	\$0.906	2.000			100.00%	\$0.18		\$0.00	\$0.18
20	CSTM AP FERT. BY AIR UREA		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
21	CSTM AP FERT. BY AIR UREA		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
22	CSTM AP FUNG. BY AIR BENLATE		ACRE	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
		50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
23	FLOOD IRRIGATION		AC-IN.	\$1.026	10.000			100.00%	\$10.26	\$6.74	\$0.00	\$16.99
24	CSTM AP FUNG. BY AIR BENLATE		ACRE	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
		50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
25	FLOOD IRRIGATION		AC-IN.	\$1.026	6.000			100.00%	\$6.15	\$4.04	\$0.00	\$10.20
26								0.00%	\$0.00		\$1.47	\$36.21
								0.00%	\$0.00		\$0.29	\$7.24

LIST OF PUBLICATIONS FOR ESTIMATING 1990 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-2-10-89	ETB 71	Oats, Loamy Soils, Arkansas
AG-3-10-89	ETB 72	Wheat, Loamy Soils, Arkansas
AG-4-10-89	ETB 73	Wheat, Clay Soils, Arkansas
AG-5-10-89	ETB 75	Rapeseed (Canola), Loamy Soils, Arkansas
AG-6-10-89	ETB 76	Soybeans, Loamy Soils, Arkansas
AG-7-10-89	ETB 77	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-8-10-89	ETB 78	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-9-10-89	ETB 79	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-10-10-89	ETB 80	Soybeans, Drilled, Loamy Soils, Arkansas
AG-11-10-89	ETB 81	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-12-10-89	ETB 82	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-13-10-89	ETB 83	Soybeans, Clay Soils, Arkansas
AG-14-10-89	ETB 84	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-15-10-89	ETB 85	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-16-10-89	ETB 86	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-17-10-89	ETB 87	Rice, Long Grain, Midseason Variety (Newbonnet), Silt Loam Soils, Eastern Arkansas
AG-18-10-89	ETB 88	Rice, Long Grain, Very Short Season Variety (Tebonnet), Silt Loam Soils, Eastern Arkansas
AG-19-10-89	ETB 89	Rice, Long Grain, Semi-dwarf Variety (Lemont), Silt Loam Soils, Eastern Arkansas
AG-20-10-89	ETB 90	Rice, Medium Grain, Short Season Variety (Mars), Silt Loam Soils, Eastern Arkansas
AG-21-10-89	ETB 91	Rice, Long Grain, Midseason Variety (Newbonnet), Clay Soils, Eastern Arkansas
AG-22-10-89	ETB 92	Rice, Long Grain, Midseason Variety (Newbonnet), Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-23-10-89	ETB 93	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-24-10-89	ETB 94	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-25-10-89	ETB 95	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-26-10-89	ETB 96	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-27-10-89	ETB 97	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-28-10-89	ETB 98	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-29-10-89	ETB 99	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-30-10-89	ETB 100	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-31-10-89	ETB 101	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-32-10-89	ETB 102	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-33-10-89	ETB 103	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-34-10-89	ETB 104	Grain Sorghum, Loamy Soils, Arkansas
AG-35-10-89	ETB 105	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-36-10-89	ETB 106	Grain Sorghum, Clay Soils, Arkansas
AG-37-10-89	ETB 107	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 1990 PRODUCTION
COSTS IN ARKANSAS**

EXTENSION TECHNICAL BULLETIN NO. 89

RICE

**LONG GRAIN, SEMI-DWARF VARIETY (LEMONT),
SILT LOAM SOILS, EASTERN ARKANSAS**



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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 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 quantity 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. Note the specified costs associated with each field operation.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

Ronnie S. Helms, Chairman	Ford L. Baldwin
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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 ESTIMATED COST
SEED	\$16.05	
FERTILIZER	\$40.37	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$19.98	
FUNGICIDE	\$13.88	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$25.20	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$10.97	
REPAIRS	\$21.38	
LABOR	\$9.12	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$20.66	
REPAIRS	\$2.86	
IRRIGATION LABOR	\$7.72	
CUSTOM SPREAD	\$2.50	
CUSTOM HAUL	\$21.04	
CUSTOM DRY OR GINNING	\$49.10	
MISCELLANEOUS	\$4.69	
CROP INSURANCE PREMIUM		
OTHER		
INTEREST ON OP. CAP.	\$11.90	

TOTAL SPECIFIED OPERATING COSTS \$277.42

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST
YIELD IN BUSHELS

80.28	92.63	123.50	154.38	166.73
\$3.14	\$2.80	\$2.25	\$1.91	\$1.81

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$7.99	
INTEREST	\$6.59	
EQUIPMENT:		
DEPRECIATION	\$5.23	
INTEREST	\$3.67	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$18.13	
INTEREST	\$6.65	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$8.16	
INTEREST	\$7.62	
TAXES & INSURANCE	\$5.58	
INTEREST	\$0.61	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$70.24

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$347.66

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

80.28	92.63	123.50	154.38	166.73
\$4.02	\$3.56	\$2.82	\$2.37	\$2.23

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, LONG GRAIN, SEMI-DWARF VARIETY (LEMONT)
 ENTERPRISE FILE NO.: RC9003
 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)	\$39.28	\$49.10	\$58.92
FERTILIZER	\$32.30	\$40.37	\$48.44
DEPRECIATION	\$31.61	\$39.52	\$47.42
AERIAL APPLI. (CUSTOM HIRE)	\$20.16	\$25.20	\$30.24
OWNERSHIP INTEREST	\$20.12	\$25.15	\$30.18
REPAIRS	\$19.39	\$24.24	\$29.08
HAUL (CUSTOM HIRE)	\$16.84	\$21.04	\$25.25
IRRIGATION FUEL & OIL	\$16.53	\$20.66	\$24.80
HERBICIDE	\$15.98	\$19.98	\$23.98
HIRED LABOR	\$13.47	\$16.83	\$20.20
SEED	\$12.84	\$16.05	\$19.26
FUNGICIDE	\$11.10	\$13.88	\$16.65
INTEREST ON OP. CAP.	\$9.52	\$11.90	\$14.28
MACHINERY FUEL & OIL	\$8.78	\$10.97	\$13.16
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM TAXES	\$3.57	\$4.46	\$5.35
SPREAD (CUSTOM HIRE)	\$2.00	\$2.50	\$3.00
FARM INSURANCE	\$0.89	\$1.12	\$1.34
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 \$278.13 \$347.66 \$417.19

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	80.28	\$3.22	\$4.02	\$4.82
-25% OF BASE YIELD	92.63	\$2.85	\$3.56	\$4.27
BASE YIELD	123.50	\$2.25	\$2.82	\$3.38
+25% OF BASE YIELD	154.38	\$1.89	\$2.37	\$2.84
+35% OF BASE YIELD	166.73	\$1.79	\$2.23	\$2.68

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, LONG GRAIN, SEMI-DWARF VARIETY (LEMONT)
 ENTERPRISE FILE NO.: RC9003
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$278.13 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHEL					
	80.28	92.63	123.50	154.38	166.73	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$71.88)	(\$48.93)	\$8.45	\$65.84	\$88.79
	\$2.95	(\$21.73)	\$8.94	\$85.61	\$162.28	\$192.95
BASE PRICE =	\$3.57	\$28.42	\$66.81	\$162.77	\$258.73	\$297.12
	\$4.19	\$78.57	\$124.67	\$239.92	\$355.18	\$401.28
	\$4.82	\$128.72	\$182.54	\$317.08	\$451.62	\$505.44

BASE COSTS: \$347.66 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHEL					
	80.28	92.63	123.50	154.38	166.73	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$136.42)	(\$114.90)	(\$61.08)	(\$7.26)	\$14.27
	\$2.95	(\$86.27)	(\$57.03)	\$16.08	\$89.19	\$118.43
BASE PRICE =	\$3.57	(\$36.12)	\$0.84	\$93.24	\$185.63	\$222.59
	\$4.19	\$14.03	\$58.71	\$170.39	\$282.08	\$326.75
	\$4.82	\$64.18	\$116.57	\$247.55	\$378.53	\$430.92

+ 20% DEVIATION FROM BASE COSTS: \$417.19 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHEL					
	80.28	92.63	123.50	154.38	166.73	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$200.96)	(\$180.86)	(\$130.61)	(\$80.36)	(\$60.25)
	\$2.95	(\$150.81)	(\$123.00)	(\$53.45)	\$16.09	\$43.91
BASE PRICE =	\$3.57	(\$100.66)	(\$65.13)	\$23.70	\$112.54	\$148.07
	\$4.19	(\$50.51)	(\$7.26)	\$100.86	\$208.98	\$252.23
	\$4.82	(\$0.36)	\$50.61	\$178.02	\$305.43	\$356.39

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, LONG GRAIN, SEMI-DWARF VARIETY (LEMONT)
 ENTERPRISE FILE NO.: RC9003
 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)	OPERATING COST			OWNERSHIP COST			TOTAL COST (M)
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)		
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.000	\$2.90	\$2.10	\$2.54	\$2.29	\$0.52	\$10.35	
4	4	CUSTOM APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	4	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	4	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
5	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.000	\$1.26	\$0.77	\$1.31	\$0.99	\$0.23	\$4.56	
6	4	BED CONDITIONER	20.0	155.0	8.727	1.000	\$1.12	\$0.77	\$1.09	\$0.87	\$0.20	\$4.05	
7	4	GRAIN DRILL	20.0	140.0	8.145	1.000	\$1.58	\$0.75	\$2.16	\$1.38	\$0.31	\$6.18	
8	4	ROLLER	27.0	140.0	16.691	1.000	\$0.45	\$0.37	\$0.73	\$0.71	\$0.16	\$2.41	
9	4	LASER SURVEY	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
10	4	DITCHER	3.0	140.0	0.436	0.010	\$0.15	\$0.14	\$0.29	\$0.20	\$0.04	\$0.83	
11	4	LEVEE DISK	9.0	155.0	4.800	0.300	\$0.48	\$0.42	\$0.54	\$0.41	\$0.09	\$1.94	
12	4	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.100	\$0.18	\$0.14	\$0.21	\$0.15	\$0.03	\$0.71	
13	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.050	\$0.16	\$0.15	\$0.16	\$0.14	\$0.03	\$0.65	
	5	LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
14	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.050	\$0.03	\$0.03	\$0.10	\$0.06	\$0.01	\$0.25	
15	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
16	5	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
17	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
18	5	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
19	6	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
20	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	HERBICIDE	0.0	0.0	0.000	0.100	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	7	IRRIGATION	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	8	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, LONG GRAIN, SEMI-DWARF VARIETY (LEMONT)
 ENTERPRISE FILE NO.: RC9003
 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		\$0.43	\$4.77
2								0.00%	\$0.00		\$0.43	\$4.77
3								0.00%	\$0.00		\$1.37	\$11.72
4	CSTM AP FERT BY GRND		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
	POTASH	0-0-60	POUND	\$0.080	100.000			100.00%	\$8.00		\$0.00	\$8.00
	UREA	46%	POUND	\$0.083	130.000			100.00%	\$10.79		\$0.00	\$10.79
5								0.00%	\$0.00		\$0.50	\$5.06
6								0.00%	\$0.00		\$0.57	\$4.62
7	RICE SEED		BUSHEL	\$6.500	2.244			100.00%	\$14.59		\$1.17	\$21.94
8								0.00%	\$0.00		\$0.30	\$2.71
9	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
10								0.00%	\$0.00		\$0.11	\$0.94
11								0.00%	\$0.00		\$0.31	\$2.25
12	RICE SEED		BUSHEL	\$6.500	2.244			100.00%	\$1.46		\$0.20	\$2.37
13								0.00%	\$0.00		\$0.62	\$1.27
	LEVEE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
14								0.00%	\$0.00		\$0.14	\$0.39
15	CSTM AP PROP. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	PROPANIL	4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
16	CSTM AP FERT. BY AIR		POUND	\$0.0400	130.000			100.00%	\$5.20		\$0.00	\$5.20
	UREA	46%	POUND	\$0.083	130.000			100.00%	\$10.79		\$0.00	\$10.79
17	CSTM AP PROP. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	PROPANIL	4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
18	FLOOD IRRIGATION		AC-IN.	\$1.008	5.000			100.00%	\$5.04	\$2.83	\$0.00	\$7.87
19	FLOOD IRRIGATION		AC-IN.	\$1.008	6.000			100.00%	\$6.05	\$3.39	\$0.00	\$9.44
20	CSTM LEVEE SPRAYER		ACRE	\$1.750	1.000			100.00%	\$1.75		\$0.00	\$1.75
	2,4-D	4LB/GAL	PINT	\$0.906	2.000			100.00%	\$0.18		\$0.00	\$0.18
21	CSTM AP FERT. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
22	CSTM AP FERT. BY AIR		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
	UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
23	CSTM AP FUNG. BY AIR		ACRE	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
	TILT	3.6 EC	OUNCE	\$2.313	6.000			100.00%	\$6.94		\$0.00	\$6.94
24	FLOOD IRRIGATION		AC-IN.	\$1.008	12.000			100.00%	\$12.09	\$6.78	\$0.00	\$18.88
25	CSTM AP FUNG. BY AIR		ACRE	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
	TILT	3.6 EC	OUNCE	\$2.313	6.000			100.00%	\$6.94		\$0.00	\$6.94
26	FLOOD IRRIGATION		AC-IN.	\$1.008	8.000			100.00%	\$8.06	\$4.52	\$0.00	\$12.58

LIST OF PUBLICATIONS FOR ESTIMATING 1990 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-2-10-89	ETB 71	Oats, Loamy Soils, Arkansas
AG-3-10-89	ETB 72	Wheat, Loamy Soils, Arkansas
AG-4-10-89	ETB 73	Wheat, Clay Soils, Arkansas
AG-5-10-89	ETB 75	Rapeseed (Canola), Loamy Soils, Arkansas
AG-6-10-89	ETB 76	Soybeans, Loamy Soils, Arkansas
AG-7-10-89	ETB 77	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-8-10-89	ETB 78	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-9-10-89	ETB 79	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-10-10-89	ETB 80	Soybeans, Drilled, Loamy Soils, Arkansas
AG-11-10-89	ETB 81	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-12-10-89	ETB 82	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-13-10-89	ETB 83	Soybeans, Clay Soils, Arkansas
AG-14-10-89	ETB 84	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-15-10-89	ETB 85	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-16-10-89	ETB 86	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-17-10-89	ETB 87	Rice, Long Grain, Midseason Variety (Newbonnet), Silt Loam Soils, Eastern Arkansas
AG-18-10-89	ETB 88	Rice, Long Grain, Very Short Season Variety (Tebonnet), Silt Loam Soils, Eastern Arkansas
AG-19-10-89	ETB 89	Rice, Long Grain, Semi-dwarf Variety (Lemont), Silt Loam Soils, Eastern Arkansas
AG-20-10-89	ETB 90	Rice, Medium Grain, Short Season Variety (Mars), Silt Loam Soils, Eastern Arkansas
AG-21-10-89	ETB 91	Rice, Long Grain, Midseason Variety (Newbonnet), Clay Soils, Eastern Arkansas
AG-22-10-89	ETB 92	Rice, Long Grain, Midseason Variety (Newbonnet), Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-23-10-89	ETB 93	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-24-10-89	ETB 94	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-25-10-89	ETB 95	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-26-10-89	ETB 96	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-27-10-89	ETB 97	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-28-10-89	ETB 98	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-29-10-89	ETB 99	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-30-10-89	ETB 100	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-31-10-89	ETB 101	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-32-10-89	ETB 102	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-33-10-89	ETB 103	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-34-10-89	ETB 104	Grain Sorghum, Loamy Soils, Arkansas
AG-35-10-89	ETB 105	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-36-10-89	ETB 106	Grain Sorghum, Clay Soils, Arkansas
AG-37-10-89	ETB 107	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 1990 PRODUCTION
COSTS IN ARKANSAS**

EXTENSION TECHNICAL BULLETIN NO. 90

RICE

**MEDIUM GRAIN, SHORT SEASON VARIETY (MARS),
SILT LOAM SOILS, EASTERN ARKANSAS**



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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 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 quantity 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. Note the specified costs associated with each field operation.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

Ronnie S. Helms, Chairman	Ford L. Baldwin
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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 ESTIMATED COST
SEED	\$15.57	
FERTILIZER	\$27.92	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$19.98	
FUNGICIDE	\$0.00	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$20.40	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$11.63	
REPAIRS	\$23.34	
LABOR	\$9.54	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$21.33	
REPAIRS	\$2.86	
IRRIGATION LABOR	\$7.97	
CUSTOM SPREAD	\$2.50	
CUSTOM HAUL	\$23.00	
CUSTOM DRY OR GINNING	\$53.68	
MISCELLANEOUS	\$4.69	
CROP INSURANCE PREMIUM		
OTHER		
INTEREST ON OP. CAP.	\$10.49	

TOTAL SPECIFIED OPERATING COSTS \$254.91

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST
YIELD IN BUSHELS

87.75	101.25	135.00	168.75	182.25
\$2.59	\$2.33	\$1.89	\$1.63	\$1.55

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$8.07	
INTEREST	\$6.65	
EQUIPMENT:		
DEPRECIATION	\$5.25	
INTEREST	\$3.69	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$21.76	
INTEREST	\$7.98	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$8.16	
INTEREST	\$7.62	
TAXES & INSURANCE	\$5.90	
INTEREST	\$0.65	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$75.73

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$330.64

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

87.75	101.25	135.00	168.75	182.25
\$3.46	\$3.07	\$2.45	\$2.07	\$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: RICE, MEDIUM GRAIN, SHORT SEASON VARIETY (MARS)
 ENTERPRISE FILE NO.: RC9004
 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)	\$42.94	\$53.68	\$64.41
DEPRECIATION	\$34.59	\$43.24	\$51.89
FERTILIZER	\$22.34	\$27.92	\$33.50
OWNERSHIP INTEREST	\$21.27	\$26.59	\$31.91
REPAIRS	\$20.96	\$26.20	\$31.44
HAUL (CUSTOM HIRE)	\$18.40	\$23.00	\$27.60
IRRIGATION FUEL & OIL	\$17.06	\$21.33	\$25.60
AERIAL APPLI. (CUSTOM HIRE)	\$16.32	\$20.40	\$24.48
HERBICIDE	\$15.98	\$19.98	\$23.98
HIRED LABOR	\$14.01	\$17.51	\$21.01
SEED	\$12.46	\$15.57	\$18.69
MACHINERY FUEL & OIL	\$9.31	\$11.63	\$13.96
INTEREST ON OP. CAP.	\$8.39	\$10.49	\$12.59
FARM TAXES	\$3.77	\$4.72	\$5.66
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
SPREAD (CUSTOM HIRE)	\$2.00	\$2.50	\$3.00
FARM INSURANCE	\$0.94	\$1.18	\$1.42
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 \$264.51 \$330.64 \$396.77

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	87.75	\$2.77	\$3.46	\$4.15
-25% OF BASE YIELD	101.25	\$2.46	\$3.07	\$3.69
BASE YIELD	135.00	\$1.96	\$2.45	\$2.94
+25% OF BASE YIELD	168.75	\$1.66	\$2.07	\$2.49
+35% OF BASE YIELD	182.25	\$1.57	\$1.96	\$2.36

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, MEDIUM GRAIN, SHORT SEASON VARIETY (MARS)
 ENTERPRISE FILE NO.: RC9004
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: SILT LOAM
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$264.51 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	87.75	101.25	135.00	168.75	182.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.20	(\$49.90)	(\$26.48)	\$32.08	\$90.64	\$114.07
	\$2.79	\$2.00	\$33.41	\$111.93	\$190.46	\$221.87
BASE PRICE =	\$3.38	\$53.91	\$93.30	\$191.79	\$290.27	\$329.67
	\$3.97	\$105.81	\$153.19	\$271.64	\$390.09	\$437.47
	\$4.56	\$157.71	\$213.08	\$351.49	\$489.90	\$545.27

BASE COSTS: \$330.64 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	87.75	101.25	135.00	168.75	182.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.20	(\$110.57)	(\$88.71)	(\$34.05)	\$20.62	\$42.48
	\$2.79	(\$58.67)	(\$28.82)	\$45.81	\$120.43	\$150.28
BASE PRICE =	\$3.38	(\$6.77)	\$31.07	\$125.66	\$220.25	\$258.08
	\$3.97	\$45.14	\$90.96	\$205.51	\$320.06	\$365.88
	\$4.56	\$97.04	\$150.85	\$285.36	\$419.88	\$473.68

+ 20% DEVIATION FROM BASE COSTS: \$396.77 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	87.75	101.25	135.00	168.75	182.25	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.20	(\$171.25)	(\$150.94)	(\$100.17)	(\$49.41)	(\$29.10)
	\$2.79	(\$119.34)	(\$91.05)	(\$20.32)	\$50.41	\$78.70
BASE PRICE =	\$3.38	(\$67.44)	(\$31.16)	\$59.53	\$150.22	\$186.50
	\$3.97	(\$15.53)	\$28.73	\$139.38	\$250.04	\$294.30
	\$4.56	\$36.37	\$88.62	\$219.24	\$349.85	\$402.10

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, MEDIUM GRAIN, SHORT SEASON VARIETY (MARS)
 ENTERPRISE FILE NO.: RC9004
 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)	OPERATING COST			OWNERSHIP COST			TOTAL COST (M)
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)		
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.000	\$2.90	\$2.10	\$2.54	\$2.29	\$0.52	\$10.35	
4	4	CUSTOM APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	4	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
5	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.000	\$1.26	\$0.77	\$1.31	\$0.99	\$0.23	\$4.56	
6	4	BED CONDITIONER	20.0	155.0	8.727	1.000	\$1.12	\$0.77	\$1.09	\$0.87	\$0.20	\$4.05	
7	4	GRAIN DRILL	20.0	140.0	8.145	1.000	\$1.58	\$0.75	\$2.16	\$1.38	\$0.31	\$6.18	
8	4	ROLLER	27.0	140.0	16.691	1.000	\$0.45	\$0.37	\$0.73	\$0.71	\$0.16	\$2.41	
9	4	LASER SURVEY	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
10	4	DITCHER	3.0	140.0	0.436	0.010	\$0.15	\$0.14	\$0.29	\$0.20	\$0.04	\$0.83	
11	4	LEEVE DISK	9.0	155.0	4.800	0.300	\$0.48	\$0.42	\$0.54	\$0.41	\$0.09	\$1.94	
12	4	LEEVE DISK/W BOX SEEDER	9.0	155.0	4.800	0.100	\$0.18	\$0.14	\$0.21	\$0.15	\$0.03	\$0.71	
13	5	INSTALL LEEVE GATES-BLADE	8.0	105.0	1.745	0.050	\$0.16	\$0.15	\$0.16	\$0.14	\$0.03	\$0.65	
	5	LEEVE GATES (PLASTIC)	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
14	5	BUTT LEEVES-REAR BACKHOE	18.0	105.0	7.636	0.050	\$0.03	\$0.03	\$0.10	\$0.06	\$0.01	\$0.25	
15	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
16	5	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
17	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
18	5	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
19	6	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
20	7	APPLY HERBICIDE - LEEVES	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	HERBICIDE	0.0	0.0	0.000	0.100	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
22	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	7	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
24	8	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.750	\$7.00	\$2.23	\$13.60	\$4.99	\$1.13	\$28.95	
	9	COMBINE, 4WD, DOWN RICE	20.0	190.0	1.697	0.250	\$4.20	\$1.34	\$8.16	\$2.99	\$0.68	\$17.37	
26	9	GRAIN BUGGY, 350 BU.	8.3	175.0	4.024	0.438	\$1.20	\$0.83	\$1.13	\$0.94	\$0.21	\$4.31	
27	9	CUSTOM HAULING	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
28	9	CUSTOM DRYING	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
29	10	LEEVE DISK	9.0	155.0	4.800	0.200	\$0.32	\$0.28	\$0.36	\$0.27	\$0.06	\$1.29	
SPECIFIED INTEREST													
TOTAL SPECIFIED COSTS							\$23.34	\$11.63	\$35.08	\$18.32	\$4.16	\$92.54	

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, MEDIUM GRAIN, SHORT SEASON VARIETY (MARS)
 ENTERPRISE FILE NO.: RC9004
 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		\$0.43	\$4.77
2								0.00%	\$0.00		\$0.43	\$4.77
3								0.00%	\$0.00		\$1.37	\$11.72
4	CSTM AP FERT BY GRND POTASH		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
		0-0-60	POUND	\$0.080	100.000			100.00%	\$8.00		\$0.00	\$8.00
5								0.00%	\$0.00		\$0.50	\$5.06
6								0.00%	\$0.00		\$0.57	\$4.62
7	RICE SEED		BUSHEL	\$6.500	2.178			100.00%	\$14.16		\$1.17	\$21.51
8								0.00%	\$0.00		\$0.30	\$2.71
9	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
10								0.00%	\$0.00		\$0.11	\$0.94
11								0.00%	\$0.00		\$0.31	\$2.25
12	RICE SEED		BUSHEL	\$6.500	2.178			100.00%	\$1.42		\$0.20	\$2.33
13								0.00%	\$0.00		\$0.62	\$1.27
	LEVEE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
14								0.00%	\$0.00		\$0.14	\$0.39
15	CSTM AP PROP. BY AIR PROPANIL		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
16	CSTM AP FERT. BY AIR UREA		POUND	\$0.0400	110.000			100.00%	\$4.40		\$0.00	\$4.40
		46%	POUND	\$0.083	110.000			100.00%	\$9.13		\$0.00	\$9.13
17	CSTM AP PROP. BY AIR PROPANIL		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
18	FLOOD IRRIGATION		AC-IN.	\$1.005	5.000			100.00%	\$5.02	\$2.74	\$0.00	\$7.76
19	FLOOD IRRIGATION		AC-IN.	\$1.005	6.000			100.00%	\$6.03	\$3.29	\$0.00	\$9.31
20	CSTM LEVEE SPRAYER 2,4-D		ACRE	\$1.750	1.000			100.00%	\$1.75		\$0.00	\$1.75
		4LB/GAL	PINT	\$0.906	2.000			100.00%	\$0.18		\$0.00	\$0.18
21	CSTM AP FERT. BY AIR UREA		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
22	CSTM AP FERT. BY AIR UREA		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
		46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
23	FLOOD IRRIGATION		AC-IN.	\$1.005	13.000			100.00%	\$13.06	\$7.12	\$0.00	\$20.18
24	FLOOD IRRIGATION		AC-IN.	\$1.005	8.000			100.00%	\$8.04	\$4.38	\$0.00	\$12.42
25								0.00%	\$0.00		\$1.22	\$30.17
								0.00%	\$0.00		\$0.73	\$18.10
26								0.00%	\$0.00		\$1.22	\$5.53
27	CUSTOM HAULING		BUSHEL	\$0.150	153.360			100.00%	\$23.00		\$0.00	\$23.00
28	CUSTOM DRYING		BUSHEL	\$0.350	153.360			100.00%	\$53.68		\$0.00	\$53.68
29								0.00%	\$0.00		\$0.21	\$1.50

\$199.90 \$17.52 \$9.54 \$330.64

LIST OF PUBLICATIONS FOR ESTIMATING 1990 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-2-10-89	ETB 71	Oats, Loamy Soils, Arkansas
AG-3-10-89	ETB 72	Wheat, Loamy Soils, Arkansas
AG-4-10-89	ETB 73	Wheat, Clay Soils, Arkansas
AG-5-10-89	ETB 75	Rapeseed (Canola), Loamy Soils, Arkansas
AG-6-10-89	ETB 76	Soybeans, Loamy Soils, Arkansas
AG-7-10-89	ETB 77	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-8-10-89	ETB 78	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-9-10-89	ETB 79	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-10-10-89	ETB 80	Soybeans, Drilled, Loamy Soils, Arkansas
AG-11-10-89	ETB 81	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-12-10-89	ETB 82	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-13-10-89	ETB 83	Soybeans, Clay Soils, Arkansas
AG-14-10-89	ETB 84	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-15-10-89	ETB 85	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-16-10-89	ETB 86	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-17-10-89	ETB 87	Rice, Long Grain, Midseason Variety (Newbonnet), Silt Loam Soils, Eastern Arkansas
AG-18-10-89	ETB 88	Rice, Long Grain, Very Short Season Variety (Tebonnet), Silt Loam Soils, Eastern Arkansas
AG-19-10-89	ETB 89	Rice, Long Grain, Semi-dwarf Variety (Lemont), Silt Loam Soils, Eastern Arkansas
AG-20-10-89	ETB 90	Rice, Medium Grain, Short Season Variety (Mars), Silt Loam Soils, Eastern Arkansas
AG-21-10-89	ETB 91	Rice, Long Grain, Midseason Variety (Newbonnet), Clay Soils, Eastern Arkansas
AG-22-10-89	ETB 92	Rice, Long Grain, Midseason Variety (Newbonnet), Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-23-10-89	ETB 93	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-24-10-89	ETB 94	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-25-10-89	ETB 95	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-26-10-89	ETB 96	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-27-10-89	ETB 97	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-28-10-89	ETB 98	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-29-10-89	ETB 99	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-30-10-89	ETB 100	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-31-10-89	ETB 101	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-32-10-89	ETB 102	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-33-10-89	ETB 103	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-34-10-89	ETB 104	Grain Sorghum, Loamy Soils, Arkansas
AG-35-10-89	ETB 105	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-36-10-89	ETB 106	Grain Sorghum, Clay Soils, Arkansas
AG-37-10-89	ETB 107	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 1990 PRODUCTION
COSTS IN ARKANSAS**

EXTENSION TECHNICAL BULLETIN NO. 91

RICE

**LONG GRAIN, MIDSEASON VARIETY (NEWBONNET),
CLAY SOILS, EASTERN ARKANSAS**



AUTHORS

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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 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 quantity 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. Note the specified costs associated with each field operation.

ACKNOWLEDGEMENTS EXTENSION RICE COMMITTEE

Ronnie S. Helms, Chairman	Ford L. Baldwin
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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 ESTIMATED COST
SEED	\$16.05	
FERTILIZER	\$24.49	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$35.58	
FUNGICIDE	\$13.30	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$26.60	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$11.18	
REPAIRS	\$22.09	
LABOR	\$9.21	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$22.42	
REPAIRS	\$2.15	
IRRIGATION LABOR	\$9.96	
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.	\$12.00	

TOTAL SPECIFIED OPERATING COSTS \$277.88

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST YIELD IN BUSHEL

	78.00	90.00	120.00	150.00	162.00
	\$3.25	\$2.90	\$2.32	\$1.97	\$1.86

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$7.97	
INTEREST	\$6.57	
EQUIPMENT:		
DEPRECIATION	\$5.22	
INTEREST	\$3.66	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$19.58	
INTEREST	\$7.18	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$6.09	
INTEREST	\$5.62	
TAXES & INSURANCE	\$5.24	
INTEREST	\$0.58	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$67.71

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$345.59

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

	78.00	90.00	120.00	150.00	162.00
	\$4.12	\$3.65	\$2.88	\$2.42	\$2.28

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, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9005
 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
DEPRECIATION	\$31.09	\$38.86	\$46.64
HERBICIDE	\$28.46	\$35.58	\$42.70
AERIAL APPLI. (CUSTOM HIRE)	\$21.28	\$26.60	\$31.92
FERTILIZER	\$19.59	\$24.49	\$29.38
REPAIRS	\$19.39	\$24.24	\$29.09
OWNERSHIP INTEREST	\$18.89	\$23.61	\$28.33
IRRIGATION FUEL & OIL	\$17.94	\$22.42	\$26.91
HAUL (CUSTOM HIRE)	\$16.36	\$20.45	\$24.54
HIRED LABOR	\$15.34	\$19.17	\$23.01
SEED	\$12.84	\$16.05	\$19.26
FUNGICIDE	\$10.64	\$13.30	\$15.96
INTEREST ON OP. CAP.	\$9.60	\$12.00	\$14.40
MACHINERY FUEL & OIL	\$8.95	\$11.18	\$13.42
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM TAXES	\$3.35	\$4.19	\$5.03
FARM INSURANCE	\$0.84	\$1.05	\$1.26
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 \$276.47 \$345.59 \$414.71

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	78.00	\$3.30	\$4.12	\$4.94
-25% OF BASE YIELD	90.00	\$2.92	\$3.65	\$4.38
BASE YIELD	120.00	\$2.30	\$2.88	\$3.46
+25% OF BASE YIELD	150.00	\$1.94	\$2.42	\$2.90
+35% OF BASE YIELD	162.00	\$1.83	\$2.28	\$2.74

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9005
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$276.47 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$76.07)	(\$53.77)	\$1.99	\$57.75	\$80.05
	\$2.95	(\$27.34)	\$2.46	\$76.96	\$151.46	\$181.26
BASE PRICE =	\$3.57	\$21.39	\$58.69	\$151.93	\$245.17	\$282.47
	\$4.19	\$70.12	\$114.91	\$226.90	\$338.88	\$383.68
	\$4.82	\$118.85	\$171.14	\$301.87	\$432.60	\$484.89

BASE COSTS: \$345.59 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$140.34)	(\$119.42)	(\$67.13)	(\$14.84)	\$6.08
	\$2.95	(\$91.61)	(\$63.20)	\$7.84	\$78.88	\$107.29
BASE PRICE =	\$3.57	(\$42.88)	(\$6.97)	\$82.81	\$172.59	\$208.50
	\$4.19	\$5.85	\$49.26	\$157.78	\$266.30	\$309.71
	\$4.82	\$54.58	\$105.49	\$232.75	\$360.01	\$410.92

+ 20% DEVIATION FROM BASE COSTS: \$414.71 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	78.00	90.00	120.00	150.00	162.00	
	-35%	-25%	BASE YIELD	+25%	+35%	
	- - - - - RETURNS PER ACRE - - - - -					
	\$2.32	(\$204.61)	(\$185.08)	(\$136.25)	(\$87.42)	(\$67.89)
	\$2.95	(\$155.88)	(\$128.85)	(\$61.28)	\$6.29	\$33.32
BASE PRICE =	\$3.57	(\$107.15)	(\$72.62)	\$13.69	\$100.01	\$134.53
	\$4.19	(\$58.42)	(\$16.39)	\$88.66	\$193.72	\$235.74
	\$4.82	(\$9.69)	\$39.83	\$163.63	\$287.43	\$336.95

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9005
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: CLAY
 IRRIGATION METHOD: FLOOD

MACHINERY COST

OPER- ATION NO.	DATE	OPERATION	WIDTH (FEET)	HORSE POWER PTO	PERFORMANCE RATE (AC/HR)	TIMES OVER (NO.)	OPERATING COST			OWNERSHIP COST			TOTAL COST (M)
							REPAIRS & MAINTENANCE	FUEL, OIL & LUB	DEPRE- CIATION	INTEREST	TAXES & INSURANCE		
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34	
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.000	\$2.90	\$2.10	\$2.54	\$2.29	\$0.52	\$10.35	
4	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.000	\$1.26	\$0.77	\$1.31	\$0.99	\$0.23	\$4.56	
5	4	BED CONDITIONER	20.0	155.0	8.727	1.000	\$1.12	\$0.77	\$1.09	\$0.87	\$0.20	\$4.05	
6	4	GRAIN DRILL	20.0	140.0	8.145	1.000	\$1.58	\$0.75	\$2.16	\$1.38	\$0.31	\$6.18	
7	4	ROLLER	27.0	140.0	16.691	1.000	\$0.45	\$0.37	\$0.73	\$0.71	\$0.16	\$2.41	
8	4	LASER SURVEY	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
9	4	DITCHER	3.0	140.0	0.436	0.010	\$0.15	\$0.14	\$0.29	\$0.20	\$0.04	\$0.83	
10	4	LEVEE DISK	9.0	155.0	4.800	0.300	\$0.48	\$0.42	\$0.54	\$0.41	\$0.09	\$1.94	
11	4	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.100	\$0.18	\$0.14	\$0.21	\$0.15	\$0.03	\$0.71	
12	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.050	\$0.16	\$0.15	\$0.16	\$0.14	\$0.03	\$0.65	
	5	LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
13	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.050	\$0.03	\$0.03	\$0.10	\$0.06	\$0.01	\$0.25	
14	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
15	5	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
16	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
17	5	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
18	6	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
19	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	HERBICIDE	0.0	0.0	0.000	0.100	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
20	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
23	7	IRRIGATION	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	8	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
25	8	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
26	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.900	\$8.40	\$2.68	\$16.32	\$5.98	\$1.36	\$34.74	
	9	COMBINE, 4WD, DOWN RICE	20.0	190.0	1.697	0.100	\$1.68	\$0.54	\$3.26	\$1.20	\$0.27	\$6.95	
27	9	GRAIN BUGGY, 350 BU.	8.3	175.0	4.024	0.389	\$1.07	\$0.74	\$1.01	\$0.83	\$0.19	\$3.83	

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9005
 LOCATION: EASTERN ARKANSAS
 SOILS TYPE: CLAY
 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		\$0.43	\$4.77
2								0.00%	\$0.00		\$0.43	\$4.77
3								0.00%	\$0.00		\$1.37	\$11.72
4								0.00%	\$0.00		\$0.50	\$5.06
5								0.00%	\$0.00		\$0.57	\$4.62
6	RICE SEED		BUSHEL	\$6.500	2.244			100.00%	\$14.59		\$1.17	\$21.94
7								0.00%	\$0.00		\$0.30	\$2.71
8	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
9								0.00%	\$0.00		\$0.11	\$0.94
10								0.00%	\$0.00		\$0.31	\$2.25
11	RICE SEED		BUSHEL	\$6.500	2.244			100.00%	\$1.46		\$0.20	\$2.37
12								0.00%	\$0.00		\$0.62	\$1.27
	LEVEE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
13								0.00%	\$0.00		\$0.14	\$0.39
14	CSTM AP PROP. BY AIR PROPANIL	4LB/GAL	PINT	\$1.650	8.000			100.00%	\$4.00		\$0.00	\$4.00
15	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.0400	165.000			100.00%	\$6.60		\$0.00	\$6.60
16	CSTM AP ORDRAM BY AIR ORDRAM	15G	POUND	\$0.083	165.000			100.00%	\$13.70		\$0.00	\$13.70
17	FLOOD IRRIGATION		ACRE	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
18	FLOOD IRRIGATION		AC-IN.	\$0.863	25.000			100.00%	\$22.20		\$0.00	\$22.20
19	FLOOD IRRIGATION		AC-IN.	\$0.863	8.000			100.00%	\$6.91	\$2.60	\$0.00	\$9.50
20	FLOOD IRRIGATION		AC-IN.	\$0.863	10.000			100.00%	\$8.63	\$3.25	\$0.00	\$11.88
21	CSTM LEVEE SPRAYER 2,4-D	4LB/GAL	PINT	\$1.750	1.000			100.00%	\$1.75		\$0.00	\$1.75
22	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.906	2.000			100.00%	\$0.18		\$0.00	\$0.18
23	CSTM AP FERT. BY AIR UREA	46%	POUND	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
24	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
25	CSTM AP FERT. BY AIR UREA	46%	POUND	\$4.000	1.000			100.00%	\$4.00		\$0.00	\$4.00
26	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
27	CSTM AP FUNG. BY AIR BENLATE	50 WP	POUND	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
28	CSTM AP FUNG. BY AIR BENLATE	50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
29	FLOOD IRRIGATION		AC-IN.	\$0.863	12.000			100.00%	\$10.36	\$3.90	\$0.00	\$14.25
30	CSTM AP FUNG. BY AIR BENLATE	50 WP	POUND	\$4.000	1.000			100.00%	\$2.00		\$0.00	\$2.00
31	CSTM AP FUNG. BY AIR BENLATE	50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
32	FLOOD IRRIGATION		AC-IN.	\$0.863	10.000			100.00%	\$8.63	\$3.25	\$0.00	\$11.88
33								0.00%	\$0.00		\$1.47	\$36.21
34								0.00%	\$0.00		\$0.29	\$7.24
35								0.00%	\$0.00		\$1.08	\$4.91

LIST OF PUBLICATIONS FOR ESTIMATING 1990 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-2-10-89	ETB 71	Oats, Loamy Soils, Arkansas
AG-3-10-89	ETB 72	Wheat, Loamy Soils, Arkansas
AG-4-10-89	ETB 73	Wheat, Clay Soils, Arkansas
AG-5-10-89	ETB 75	Rapeseed (Canola), Loamy Soils, Arkansas
AG-6-10-89	ETB 76	Soybeans, Loamy Soils, Arkansas
AG-7-10-89	ETB 77	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-8-10-89	ETB 78	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-9-10-89	ETB 79	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-10-10-89	ETB 80	Soybeans, Drilled, Loamy Soils, Arkansas
AG-11-10-89	ETB 81	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-12-10-89	ETB 82	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-13-10-89	ETB 83	Soybeans, Clay Soils, Arkansas
AG-14-10-89	ETB 84	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-15-10-89	ETB 85	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-16-10-89	ETB 86	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-17-10-89	ETB 87	Rice, Long Grain, Midseason Variety (Newbonnet), Silt Loam Soils, Eastern Arkansas
AG-18-10-89	ETB 88	Rice, Long Grain, Very Short Season Variety (Tebonnet), Silt Loam Soils, Eastern Arkansas
AG-19-10-89	ETB 89	Rice, Long Grain, Semi-dwarf Variety (Lemont), Silt Loam Soils, Eastern Arkansas
AG-20-10-89	ETB 90	Rice, Medium Grain, Short Season Variety (Mars), Silt Loam Soils, Eastern Arkansas
AG-21-10-89	ETB 91	Rice, Long Grain, Midseason Variety (Newbonnet), Clay Soils, Eastern Arkansas
AG-22-10-89	ETB 92	Rice, Long Grain, Midseason Variety (Newbonnet), Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-23-10-89	ETB 93	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-24-10-89	ETB 94	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-25-10-89	ETB 95	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-26-10-89	ETB 96	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-27-10-89	ETB 97	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-28-10-89	ETB 98	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-29-10-89	ETB 99	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-30-10-89	ETB 100	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-31-10-89	ETB 101	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-32-10-89	ETB 102	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-33-10-89	ETB 103	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-34-10-89	ETB 104	Grain Sorghum, Loamy Soils, Arkansas
AG-35-10-89	ETB 105	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-36-10-89	ETB 106	Grain Sorghum, Clay Soils, Arkansas
AG-37-10-89	ETB 107	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 1990 PRODUCTION
COSTS IN ARKANSAS**

EXTENSION TECHNICAL BULLETIN NO. 92

RICE

**LONG GRAIN, MIDSEASON VARIETY (NEWBONNET),
GRAND PRAIRIE SOILS, GRAND PRAIRIE REGION**



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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 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 quantity 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. Note the specified costs associated with each field operation.

ACKNOWLEDGEMENTS EXTENSION RICE 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 ESTIMATED COST
SEED	\$13.35	
FERTILIZER	\$24.49	
LIME + APPLICATION	\$0.00	
HERBICIDE	\$19.98	
FUNGICIDE	\$13.30	
INSECTICIDE	\$0.00	
DEFOLIANT	\$0.00	
AERIAL APPLICATION	\$26.60	
MACHINERY:		
FUEL, OIL, LUBRICANTS	\$11.23	
REPAIRS	\$22.15	
LABOR	\$9.28	
IRRIGATION:		
FUEL, OIL, LUBRICANTS	\$32.46	
REPAIRS	\$6.51	
IRRIGATION LABOR	\$6.23	
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.	\$11.65	

TOTAL SPECIFIED OPERATING COSTS \$274.05

PER UNIT BREAKEVEN PRICE, TOTAL SPECIFIED OPERATING COST
YIELD IN BUSHEL

82.55	95.25	127.00	158.75	171.45
\$3.01	\$2.68	\$2.16	\$1.84	\$1.75

SPECIFIED OWNERSHIP COSTS

RESOURCE OR INPUT	PER ACRE COST	YOUR ESTIMATE
TRACTORS:		
DEPRECIATION	\$8.01	
INTEREST	\$6.61	
EQUIPMENT:		
DEPRECIATION	\$5.23	
INTEREST	\$3.67	
SPECIAL EQUIPMENT:		
DEPRECIATION	\$19.58	
INTEREST	\$7.18	
MISCELLANEOUS:		
DEPRECIATION	\$0.00	
INTEREST	\$0.00	
IRRIGATION:		
DEPRECIATION	\$20.08	
INTEREST	\$18.17	
TAXES & INSURANCE	\$8.10	
INTEREST	\$0.89	
OVERHEAD LABOR		
OTHER OVERHEAD		
LAND & PROPERTY TAX		
MANAGEMENT		

TOTAL SPECIFIED OWNERSHIP COSTS \$97.55

TOTAL SPECIFIED OPERATING AND OWNERSHIP COSTS \$371.59

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

82.55	95.25	127.00	158.75	171.45
\$4.19	\$3.71	\$2.93	\$2.46	\$2.32

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, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9006
 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)
DEPRECIATION	\$42.33	\$52.92	\$63.50
DRY OR GINNING (COMMERCIAL)	\$40.40	\$50.50	\$60.59
OWNERSHIP INTEREST	\$29.22	\$36.53	\$43.84
IRRIGATION FUEL & OIL	\$25.97	\$32.46	\$38.96
REPAIRS	\$22.93	\$28.66	\$34.39
AERIAL APPLI. (CUSTOM HIRE)	\$21.28	\$26.60	\$31.92
FERTILIZER	\$19.59	\$24.49	\$29.38
HAUL (CUSTOM HIRE)	\$17.31	\$21.64	\$25.97
HERBICIDE	\$15.98	\$19.98	\$23.98
HIRED LABOR	\$12.40	\$15.50	\$18.60
SEED	\$10.68	\$13.35	\$16.02
FUNGICIDE	\$10.64	\$13.30	\$15.96
INTEREST ON OP. CAP.	\$9.32	\$11.65	\$13.99
MACHINERY FUEL & OIL	\$8.98	\$11.23	\$13.47
FARM TAXES	\$5.18	\$6.48	\$7.78
MISCELLANEOUS	\$3.75	\$4.69	\$5.63
FARM INSURANCE	\$1.30	\$1.62	\$1.94
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 \$297.28 \$371.59 \$445.91

PER UNIT BREAKEVEN PRICE--TOTAL SPECIFIED COSTS

	YIELD	BREAKEVEN PRICE		
-35% OF BASE YIELD	82.55	\$3.35	\$4.19	\$5.03
-25% OF BASE YIELD	95.25	\$2.97	\$3.71	\$4.45
BASE YIELD	127.00	\$2.34	\$2.93	\$3.51
+25% OF BASE YIELD	158.75	\$1.96	\$2.46	\$2.95
+35% OF BASE YIELD	171.45	\$1.85	\$2.32	\$2.78

ESTIMATED ENTERPRISE RETURNS ABOVE TOTAL SPECIFIED COSTS

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9006
 LOCATION: GRAND PRAIRIE REGION
 SOILS TYPE: GRAND PRAIRIE SOILS
 IRRIGATION METHOD: FLOOD

- 20% DEVIATION FROM BASE COSTS: \$297.28 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	82.55	95.25	127.00	158.75	171.45	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	----- RETURNS PER ACRE -----					
	\$2.32	(\$85.19)	(\$61.58)	(\$2.57)	\$56.44	\$80.04
	\$2.95	(\$33.61)	(\$2.08)	\$76.77	\$155.62	\$187.16
BASE PRICE =	\$3.57	\$17.96	\$57.43	\$156.11	\$254.80	\$294.27
	\$4.19	\$69.53	\$116.94	\$235.46	\$353.98	\$401.38
	\$4.82	\$121.11	\$176.45	\$314.80	\$453.15	\$508.50

BASE COSTS: \$371.59 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	82.55	95.25	127.00	158.75	171.45	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	----- RETURNS PER ACRE -----					
	\$2.32	(\$154.37)	(\$132.24)	(\$76.89)	(\$21.55)	\$0.59
	\$2.95	(\$102.80)	(\$72.73)	\$2.45	\$77.63	\$107.70
BASE PRICE =	\$3.57	(\$51.23)	(\$13.22)	\$81.80	\$176.81	\$214.82
	\$4.19	\$0.35	\$46.29	\$161.14	\$275.99	\$321.93
	\$4.82	\$51.92	\$105.79	\$240.48	\$375.17	\$429.04

+ 20% DEVIATION FROM BASE COSTS: \$445.91 PER ACRE

PRODUCER PRICE ESTIMATES	YIELD IN BUSHELS					
	82.55	95.25	127.00	158.75	171.45	
-----	-35%	-25%	BASE YIELD	+25%	+35%	
	----- RETURNS PER ACRE -----					
	\$2.32	(\$223.56)	(\$202.89)	(\$151.21)	(\$99.53)	(\$78.86)
	\$2.95	(\$171.99)	(\$143.38)	(\$71.87)	(\$0.35)	\$28.25
BASE PRICE =	\$3.57	(\$120.41)	(\$83.87)	\$7.48	\$98.83	\$135.37
	\$4.19	(\$68.84)	(\$24.37)	\$86.82	\$198.01	\$242.48
	\$4.82	(\$17.27)	\$35.14	\$166.16	\$297.18	\$349.59

SEQUENCE OF OPERATIONS

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9006
 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)	OPERATING COST		OWNERSHIP COST			TOTAL COST (M)
							REPAIRS & MAINTENANCE (H)	FUEL, OIL & LUB (I)	DEPRE- CIATION (J)	INTEREST (K)	TAXES & INSURANCE (L)	
1	11	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34
2	3	DISK, MC 9.0" SPACING	26.7	175.0	11.638	1.000	\$1.16	\$0.66	\$1.34	\$0.97	\$0.22	\$4.34
3	3	LAND FLOAT 16' X 56'	16.0	175.0	7.273	2.000	\$2.90	\$2.10	\$2.54	\$2.29	\$0.52	\$10.35
4	4	FIELD CULTIVATOR	25.5	175.0	9.891	1.000	\$1.26	\$0.77	\$1.31	\$0.99	\$0.23	\$4.56
5	4	BED CONDITIONER	20.0	155.0	8.727	1.000	\$1.12	\$0.77	\$1.09	\$0.87	\$0.20	\$4.05
6	4	GRAIN DRILL	20.0	140.0	8.145	1.000	\$1.58	\$0.75	\$2.16	\$1.38	\$0.31	\$6.18
7	4	ROLLER	27.0	140.0	16.691	1.000	\$0.45	\$0.37	\$0.73	\$0.71	\$0.16	\$2.41
8	4	LASER SURVEY	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	4	DITCHER	3.0	140.0	0.436	0.010	\$0.15	\$0.14	\$0.29	\$0.20	\$0.04	\$0.83
10	4	LEVEE DISK	9.0	155.0	4.800	0.300	\$0.48	\$0.42	\$0.54	\$0.41	\$0.09	\$1.94
11	4	LEVEE DISK/W BOX SEEDER	9.0	155.0	4.800	0.100	\$0.18	\$0.14	\$0.21	\$0.15	\$0.03	\$0.71
12	5	INSTALL LEVEE GATES-BLADE	8.0	105.0	1.745	0.050	\$0.16	\$0.15	\$0.16	\$0.14	\$0.03	\$0.65
	5	LEVEE GATES (PLASTIC)	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	5	BUTT LEVEES-REAR BACKHOE	18.0	105.0	7.636	0.050	\$0.03	\$0.03	\$0.10	\$0.06	\$0.01	\$0.25
14	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	5	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	5	APPLY HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	5	HERBICIDE	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	5	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	6	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	7	APPLY HERBICIDE - LEVEES	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	HERBICIDE	0.0	0.0	0.000	0.100	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	7	APPLY FERTILIZER	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FERTILIZER	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	7	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	7	IRRIGATION	0.0	0.0	0.000	1.000	\$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	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	8	FUNGICIDE	0.0	0.0	0.000	0.500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	8	IRRIGATION	0.0	0.0	0.000	1.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	9	COMBINE, 4WD, RICE	20.0	190.0	3.055	0.900	\$8.40	\$2.68	\$16.32	\$5.98	\$1.36	\$34.74
	9	COMBINE, 4WD, DOWN RICE	20.0	190.0	1.697	0.100	\$1.68	\$0.54	\$3.26	\$1.20	\$0.27	\$6.95
27	9	GRAIN BUGGY, 350 BU.	8.3	175.0	4.024	0.412	\$1.13	\$0.78	\$1.07	\$0.88	\$0.20	\$4.06

SEQUENCE OF OPERATIONS (CONTINUED)

ENTERPRISE: RICE, LONG GRAIN, MIDSEASON VARIETY (NEWBONNET)
 ENTERPRISE FILE NO.: RC9006
 LOCATION: GRAND PRAIRIE REGION
 SOILS TYPE: GRAND PRAIRIE SOILS
 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		\$0.43	\$4.77
2								0.00%	\$0.00		\$0.43	\$4.77
3								0.00%	\$0.00		\$1.37	\$11.72
4								0.00%	\$0.00		\$0.50	\$5.06
5								0.00%	\$0.00		\$0.57	\$4.62
6	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$12.13		\$1.17	\$19.49
7								0.00%	\$0.00		\$0.30	\$2.71
8	CSTM LASER SURVEY		ACRE	\$2.500	1.000			100.00%	\$2.50		\$0.00	\$2.50
9								0.00%	\$0.00		\$0.11	\$0.94
10								0.00%	\$0.00		\$0.31	\$2.25
11	RICE SEED		BUSHEL	\$6.500	1.867			100.00%	\$1.21		\$0.20	\$2.12
12								0.00%	\$0.00		\$0.62	\$1.27
	LEVEE GATES (PLASTIC)		ACRE	\$0.440	1.000			100.00%	\$0.44		\$0.00	\$0.44
13								0.00%	\$0.00		\$0.14	\$0.39
14	CSTM AP PROP. BY AIR PROPANIL	4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
15	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.083	165.000			100.00%	\$13.70		\$0.00	\$13.70
16	CSTM AP PROP. BY AIR PROPANIL	4LB/GAL	PINT	\$1.650	6.000			100.00%	\$9.90		\$0.00	\$9.90
17	FLOOD IRRIGATION		AC-IN.	\$1.808	3.500			100.00%	\$6.33	\$5.93	\$0.00	\$12.26
18	FLOOD IRRIGATION		AC-IN.	\$1.808	5.000			100.00%	\$9.04	\$8.48	\$0.00	\$17.52
19	CSTM LEVEE SPRAYER 2,4-D	4LB/GAL	PINT	\$0.906	2.000			100.00%	\$0.18		\$0.00	\$0.18
20	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
21	CSTM AP FERT. BY AIR UREA	46%	POUND	\$0.083	65.000			100.00%	\$5.40		\$0.00	\$5.40
22	CSTM AP FUNG. BY AIR BENLATE	50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
23	FLOOD IRRIGATION		AC-IN.	\$1.808	10.500			100.00%	\$18.98	\$17.80	\$0.00	\$36.79
24	CSTM AP FUNG. BY AIR BENLATE	50 WP	POUND	\$13.300	1.000			100.00%	\$6.65		\$0.00	\$6.65
25	FLOOD IRRIGATION		AC-IN.	\$1.808	6.000			100.00%	\$10.85	\$10.17	\$0.00	\$21.02
26								0.00%	\$0.00		\$1.47	\$36.21
								0.00%	\$0.00		\$0.29	\$7.24
27								0.00%	\$0.00		\$1.15	\$5.20

LIST OF PUBLICATIONS FOR ESTIMATING 1990 PRODUCTION COSTS

<u>ECONOMIC SUMMARY</u>	<u>ETB</u>	<u>DESCRIPTION</u>
AG-2-10-89	ETB 71	Oats, Loamy Soils, Arkansas
AG-3-10-89	ETB 72	Wheat, Loamy Soils, Arkansas
AG-4-10-89	ETB 73	Wheat, Clay Soils, Arkansas
AG-5-10-89	ETB 75	Rapeseed (Canola), Loamy Soils, Arkansas
AG-6-10-89	ETB 76	Soybeans, Loamy Soils, Arkansas
AG-7-10-89	ETB 77	Soybeans, Loamy Soils, Furrow Irrigation, Arkansas
AG-8-10-89	ETB 78	Soybeans, In Rice Rotation, Loamy Soils, Flood Irrigation, Arkansas
AG-9-10-89	ETB 79	Soybeans, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-10-10-89	ETB 80	Soybeans, Drilled, Loamy Soils, Arkansas
AG-11-10-89	ETB 81	Soybeans, Following Wheat, Loamy Soils, Arkansas
AG-12-10-89	ETB 82	Soybeans, Following Wheat, Loamy Soils, Center Pivot Irrigation, Towable, 260 Acres, Arkansas
AG-13-10-89	ETB 83	Soybeans, Clay Soils, Arkansas
AG-14-10-89	ETB 84	Soybeans, Clay Soils, Center Pivot Irrigation, Non-Towable, 130 Acres, Arkansas
AG-15-10-89	ETB 85	Soybeans, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-16-10-89	ETB 86	Soybeans, No-Till, Following Wheat, Loamy Soils, Flood Irrigation, Arkansas
AG-17-10-89	ETB 87	Rice, Long Grain, Midseason Variety (Newbonnet), Silt Loam Soils, Eastern Arkansas
AG-18-10-89	ETB 88	Rice, Long Grain, Very Short Season Variety (Tebonnet), Silt Loam Soils, Eastern Arkansas
AG-19-10-89	ETB 89	Rice, Long Grain, Semi-dwarf Variety (Lemont), Silt Loam Soils, Eastern Arkansas
AG-20-10-89	ETB 90	Rice, Medium Grain, Short Season Variety (Mars), Silt Loam Soils, Eastern Arkansas
AG-21-10-89	ETB 91	Rice, Long Grain, Midseason Variety (Newbonnet), Clay Soils, Eastern Arkansas
AG-22-10-89	ETB 92	Rice, Long Grain, Midseason Variety (Newbonnet), Grand Prairie Soils, Grand Prairie Region, Arkansas
AG-23-10-89	ETB 93	Cotton, Loamy Soils, Solid Planted, South of I-40, Eastern Arkansas
AG-24-10-89	ETB 94	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-25-10-89	ETB 95	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-26-10-89	ETB 96	Cotton, Loamy Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-27-10-89	ETB 97	Cotton, Clay Soils, Solid Planted, North of I-40, Eastern Arkansas
AG-28-10-89	ETB 98	Cotton, Loamy Soils, Solid Planted, Furrow Irrigation, North of I-40, Eastern Arkansas
AG-29-10-89	ETB 99	Cotton, Loamy Soils, Solid Planted, Center Pivot Irrigation, 130 Acres, North of I-40, Eastern Arkansas
AG-30-10-89	ETB 100	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Furrow Irrigation, South of I-40, Eastern Arkansas
AG-31-10-89	ETB 101	Cotton, Loamy Soils, Narrow 2x1 Skip Row, Center Pivot Irrigation, 130 Acres, South of I-40, Eastern Arkansas
AG-32-10-89	ETB 102	Corn, Loamy Soils, Flood Irrigation, Arkansas
AG-33-10-89	ETB 103	Corn, Loamy Soils, Furrow Irrigation, Arkansas
AG-34-10-89	ETB 104	Grain Sorghum, Loamy Soils, Arkansas
AG-35-10-89	ETB 105	Grain Sorghum, Loamy Soils, Flood Irrigation, Arkansas
AG-36-10-89	ETB 106	Grain Sorghum, Clay Soils, Arkansas
AG-37-10-89	ETB 107	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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