

UC COOPERATIVE EXTENSION

SAMPLE COSTS TO PRODUCE RICE IN BUTTE COUNTY - 1992

by

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The detailed costs for rice production in Butte County are presented in this study. The hypothetical farm used in this report consists of 1,000 acres with 750 acre of rice production and no other crops, which is typical for this county.

Practices described are based on all of the production procedures considered typical for this crop and area, but not all of these practices are used by producers during any given year. Sample costs given for labor, materials, equipment and contract services are based on current figures. Some costs and practices detailed in this study may not be applicable to all situations. This study is only intended as a guide and can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans. A blank Your Cost column is provided to enter your actual costs on Table 1, Costs Per Acre To Produce Rice and Table 2, Details Of Cost Per Acre To Produce Rice.

This study consists of General Assumptions for Producing Rice and seven tables.

Table 1.	Costs Per Acre To Produce Rice
Table 2.	Details Of Cost Per Acre To Produce Rice
Table 3.	Monthly Cash Costs Per Acre To Produce Rice
Table 4.	Whole Farm Annual Equipment, Investment And Business Overhead
Table 5.	Hourly Equipment Costs
Table 6.	Ranging Analysis
Table 7.	Cost and Returns / Breakeven Analysis

For an explanation of calculations used for the study refer to the attached General Assumptions or call the Department of Agricultural Economics, Cooperative Extension, University of California, Davis, California, (916) 752-3589 or call the Butte County Cooperative Extension office, Oroville, (916) 538-7201.

Two companion studies entitled, "Sample Costs To Produce Organic Rice In The Sacramento Valley; Water Seeded and No-Till Drill Seeded" are available for those interested in organic rice production or a comparison of the two system.

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GENERAL ASSUMPTIONS FOR PRODUCING RICE

Butte County - 1992

U.C. Cooperative Extension

The following is a description of some general assumptions pertaining to sample costs of rice production in Butte County. The costs are based on all of the cultural practices used by growers in this region, some of which may not be used during every production year. Costs are represented on an annual, per acre basis. The use of trade names in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products.

1. LAND:

This cost of production study is based on a 1,000 acre rice operation, of which 750 acres are dedicated to growing rice only. An additional 15 non-producing acres contain roads, buildings, irrigation and drain ditches, landing strips, truck and bankout parking, etc. The remaining 235 acres is left fallow or for land forming. The number of producing acres is determined by participation in the federal farm program and administered by the local county Agricultural Stabilization and Conservation Service (ASCS). No other crops are currently grown in rotation with rice in this area.

2. RENT AGREEMENT:

The land used for rice production in this study is rented on a share-rent basis. Under this agreement the landowner receives 25% of the crop receipts from the sale of dried rice. The tenant pays all cash costs to produce the crop. All cost for land and the irrigation system is incurred by the landowner. Rent is shown as a cash overhead cost in Tables 1, 2 and 3.

3. CULTURAL PRACTICES:

This study assumes continuous rice production since most of the rice in the area is not rotated to other crops. Fallow rotation may help with straw disposal. Permanent levees are also assumed because they are common in this region. Most growers have installed permanent levee systems which require annual discing for maintenance. All fields have been laser leveled with straight levees. Maintenance laser leveling is done once in three years. Fields are smoothed annually with a triplane as part of seedbed preparation. Irrigation boxes have been set at both ends of the levees with rollover pads.

Material inputs are based on the most common choices made by growers. Alternatives are generally available. Fertilizers and herbicides are commonly used, so they are applied on 100% of the acreage in most cases. Products applied to less than 100% of the acreage are so noted, but the cost is charged over the entire acreage. For materials and rates refer to Table 2.

The pesticides and rates mentioned in this cost study are a few of those that are listed in the UC IPM Rice Pest Management Guidelines and the IPM For Rice manual. The practices and inputs used in this cost study serve only as a typical guide. Variations in cultural inputs can vary due to seasonal pest pressures, water availability and government regulations. For information and pesticide use permits contact the Butte County Agricultural Commissioner's Office. Written recommendations are required for most pesticides and are written by licensed pest control advisors. Contact the Butte County rice farm advisor for additional information sources.

4. IRRIGATION:

Water is supplied by an irrigation district and costs \$2.84 per acre foot. A total of 6 acre feet of water are applied to the rice crop during the growing season. Use of well water is increasing as surface supplies for agriculture are diverted to other uses. Growers are installing tailwater return systems to conserve water and to help comply with water holding regulations to maintain quality of drainage water. The cost to return water through the tailwater recovery system assumed in this study is \$0.67 per acre. Both the irrigation and

the tailwater recovery systems are capital improvements to the land and would not be costs to the tenant grower. Fees for maintenance of the grower's roads and canals are based on water district contract rates and are charged to the grower as cash overhead costs.

5. CROP RESIDUE MANAGEMENT:

In this study, the grower will incorporate rice straw on 10% of rice acreage. Eventually (by the year 2000) most growers will be using alternatives to burning their acreage. Straw disposal will be an additional cost to the grower until a profitable use of straw is developed. Incorporation of the 75 acres is done with a tractor and disc.

A combine mounted, straw chopper is used to slash the rice straw as it is harvested in order to facilitate soil incorporation as burning crop residue is increasingly phased down. Levees will be mowed and weeds will be removed from around the irrigation boxes in preparation for burning. Burning 675 acres takes less than ten hours of actual time, but the preparation to burn, plus 3 people to actually burn the 675 acres, brings the total time to 59 hours.

Fees for burning will vary widely for each air pollution control district. For this study, a \$255 burn permit is charged to the farm and is shown as a \$0.34 per acre charge. Check with the air pollution office in your region for current burning regulations and fees.

6. HARVEST, DRYING & STORAGE:

In this cost study the grower owns all harvesting equipment, except trucks (see Transportation section), and performs all harvest operations. The equipment for harvest operations are inventoried in investment costs on Table 4, and labor, fuel, repairs, depreciation, and operating interest, are calculated as harvest costs in Table 1. If a grower contracts his harvest operation, all harvesting equipment should be removed from investment costs in Table 4, its appropriate cost should be subtracted from harvest costs in Table 1 and a contract charge would then be added.

Rice is typically harvested at 21% moisture less 1.7% dockage and dried to 13%. Rice drying is charged at \$0.63 per cwt of dry rice and is calculated from a green weight table.

Storage costs an additional \$0.55 per cwt on a dry weight basis.

7. TRANSPORTATION:

Transportation costs for rice can be considered two ways. Some driers and marketing firms pay for the expense of transportation, leaving no costs to the grower. Transportation of green and dry rice can also be treated as an expense of processing or marketing making it a cost to the grower and should be reflected in the price returned by the producer. In this study, the cost of transporting the rice is not included as a separate line item; it is deducted from the return to the grower. Transportation of green rice is based on distance from field to dryer plus a field pick up charge of \$0.055 per cwt. Typical freight would be: $(\$0.30/\text{cwt} + \$0.055/\text{cwt}) \times 93 \text{ cwt/acre} = \33.02 per acre . Dry rice freight is based on distance and weight of the rice, but there is no pickup charge. Typical costs are; $\$0.30/\text{cwt} \times 80 \text{ cwt/acre} = \24.00 per acre .

8. YIELDS & RETURNS:

The crop yield used in this study is a net 80 hundredweight (cwt =100 pounds) per acre at 13% moisture. An estimated price of a \$7.50 per cwt of grain is used. Returns will vary and the yields and prices used in this cost study are estimates based on current information. This study does not include any income that comes from voluntary participation in government programs. Federal farm programs under the 1990 Farm Bill require consideration by individual growers and landowners. Contact the Agricultural Stabilization and Conservation Service (ASCS) for information.

9. LABOR:

Basic hourly wages for workers are \$7.09 per hour for machine and \$6.04 per hour for non-machine (field workers) labor. Adding 34% for SDI, FICA, insurance and other benefits increases the labor rates shown to \$9.50 per hour for machine and \$8.10 per hour for non-machine labor. The labor hours for operations involving machinery are 10% higher than the machine hours to account for extra labor involved in equipment set up, moving, maintenance and repair.

10. MANAGEMENT:

Supervisory fees are not included in this study.

11. INVESTMENT:

The investments shown in Table 4 are those that are partially or completely allocated to the rice operation. Costs of investments such as tractors, harvesters, buildings, etc. can be spread over the whole farm. Costs for safe chemical and fuel storage are included in the investments. Annual investments shown in Table 1 represent depreciation and opportunity cost for each investment on an annual per acre basis.

12. OVERHEAD:

County taxes are calculated as 1.0% of the average value of equipment, buildings and improvements. Insurance is charged at 0.5% of the average value of the equipment over its useful life. Various farm and office expenses are estimated at \$30 per acre for the ranch. These expenses include office supplies, utilities, telephones, bookkeeping, accounting, legal fees and maintenance, etc. State marketing orders require mandatory assessment fees to support research and promotion. The Rice Research Board assesses growers directly at a rate of \$0.05 per cwt. California Rice Promotion Board charges marketers of California rice based on the amount of rice handled at a rate of \$0.025 per cwt, which in this study is passed onto the growers. Maintenance fees are also charged by the water districts in order to service the district's ditches and roads. Fees for ditch and road upkeep are charged at a rate of \$3.00 per acre. Annual business overhead expenses are shown on Table 4.

13. INTEREST:

Interest on operating capital is based on cash costs and is calculated monthly until harvest at a rate of 9.00% per year. Real interest rates are used in this study, so no adjustments for inflation are included. Nominal interest rates would contain a factor for inflation which might run 3% to 4% higher than the real interest rate. Interest is also charged on investment at 4.00% per year to account for income foregone that could be received from an alternative investment (opportunity cost) and is based on the average value of the buildings and equipment.

14. EQUIPMENT COSTS:

Most of the equipment inventory on typical rice farms in Butte County is used and has a reduced value. This study shows current purchase price for new equipment with an adjustment of 40% of new value to indicate a mix of new and used equipment.

In allocating the equipment costs per acre, the following calculations were made and shown in Table 4: (a) Original Cost of equipment is the cost of the new equipment plus sales tax. (b) Depreciation is straight line with a 10% salvage value. (c) Interest on investment is calculated as the average value per acre of the equipment during its useful life, multiplied by an interest rate of 4.00%. Average value equals new cost plus salvage value divided by 2 on a per acre basis. (d) The total investment costs of the depreciation and the interest reflect a mix of new and used equipment. These values are also used in Table 1. Hourly equipment costs are shown in Table 5. The equipment listed in Tables 4 and 5 indicate only that equipment which is used in the rice enterprise and does not necessarily include all of the equipment that would be found on typical farm growing rice.

15. FUEL & REPAIR:

The fuel and repair cost per acre for each operation in Table 1, is determined by multiplying the total hourly operating cost for each piece of equipment in Table 5, by the number of hours per acre for that operation. Prices for on-farm delivery of diesel and gasoline are \$0.71 and \$0.98 per gallon respectively.

Table 1.

U.C. COOPERATIVE EXTENSION
 COSTS PER ACRE TO PRODUCE RICE
 BUTTE COUNTY - 1992

Labor Rate: \$9.50/hr. machine labor
 \$8.10/hr. non-machine labor

Interest Rate: 9.00%
 Yield per Acre: 80.00 cwt

Operation	Operation Time (Hrs/A)	Labor Cost	Fuel & Repairs	Cash and Labor Costs per Acre Material Cost	Custom/Rent	Total Cost	Your Cost
Cultural:							
Chisel	0.16	1.87	2.60	0.00	0.00	4.47	
Maintain Roads & Airstrip	0.10	1.14	0.43	0.00	0.00	1.57	
Maintain Levees	0.03	0.29	0.54	0.00	0.00	0.82	
Disc Stubble	0.18	2.10	4.69	0.00	0.00	6.79	
Disc Harrow 2X	0.25	2.80	6.12	0.00	0.00	8.92	
Triplane Field	0.20	2.23	4.30	0.00	0.00	6.54	
Laser Level Field - 1 of 3 Years	0.00	0.00	0.00	0.00	24.75	24.75	
Roll (Final Seedbed)	0.11	1.31	0.34	0.00	0.00	1.65	
Fertilize - Prestarter 40# N/Acre	0.00	0.00	0.00	32.00	10.20	42.20	
Fertilize - Preplaced 100# N/Acre	0.20	2.28	3.17	17.00	3.00	25.45	
Flood & Irrigate - 6 Acft	0.76	6.16	0.00	20.71	0.00	26.87	
Plant Seed @ 150#/Acre	0.00	0.00	0.00	19.13	10.76	29.89	
Fertilize - 50# Zn/Acre	0.00	0.00	0.00	6.50	7.00	13.50	
Fertilize - 100# KCl/Acre 20% of Acreage	0.00	0.00	0.00	1.60	0.96	2.56	
Pest Control - Weevils 60% of Acreage	0.00	0.00	0.00	5.22	2.28	7.50	
Pest Control - Shrimp/Algae	0.00	0.00	0.00	6.60	0.25	6.85	
Pest Control - Vertebrate	0.10	0.81	0.00	5.00	0.00	5.81	
Pest Control - Grasses	0.00	0.00	0.00	30.80	6.00	36.80	
Pest Control - Broadleaves	0.00	0.00	0.00	32.12	4.95	37.07	
Fertilize - Topdress 30# N 60% of Acreage	0.00	0.00	0.00	5.04	2.58	7.62	
Pest Control - Armyworm 10% of Acreage	0.00	0.00	0.00	0.81	0.06	0.87	
Pickup Truck Use	0.76	8.66	3.87	0.00	0.00	12.54	
TOTAL CULTURAL COSTS	2.85	29.65	26.06	182.52	72.79	311.03	
Harvest:							
Drain	0.10	0.81	0.00	0.00	0.00	0.81	
Combine Rice	0.75	8.55	25.87	0.00	0.00	34.42	
Bankout Rice	0.75	8.55	12.94	0.00	0.00	21.49	
Dry Green Rice	0.00	0.00	0.00	0.00	50.40	50.40	
Store Rice	0.00	0.00	0.00	0.00	44.00	44.00	
TOTAL HARVEST COSTS	1.60	17.91	38.81	0.00	94.40	151.12	
Postharvest:							
Prepare Fields For Burning	0.01	0.41	0.03	0.00	0.00	0.44	
Burn Permit And Fees	0.00	0.00	0.00	0.34	0.00	0.34	
Burn 90% Of The Acreage	0.35	6.83	1.38	0.00	0.00	8.20	
Incorporate Straw With Disc	0.02	0.21	0.47	0.00	0.00	0.68	
TOTAL POSTHARVEST COSTS	0.38	7.44	1.88	0.34	0.00	9.66	
Interest on operating capital @ 9.00%							14.58
TOTAL OPERATING COSTS/ACRE		55.01	66.76	182.86	167.19	486.40	
TOTAL OPERATING COSTS/CWT							6.08
CASH OVERHEAD:							
Land Rent @ 25% Share							150.00
Office Expense							30.00
Check Off - Research							4.00
Check Off - Promotion							1.60
Water District Fee							3.00
Property Taxes							0.38
Equipment Insurance							1.90
Investment Repairs							0.77
TOTAL CASH OVERHEAD COSTS							191.65
TOTAL CASH COSTS/ACRE							678.05
TOTAL CASH COSTS/CWT							8.48
NON-CASH OVERHEAD:							
Investment	Per producing Acre	Depreciation	Annual Cost	Interest @ 4.00%			
Shop Building	133.33	6.00		2.93			8.93
Fuel Tanks & Pumps	10.73	0.54		0.21			0.75
Storage Building	10.00	0.50		0.20			0.70
Shop Tools	20.00	0.90		0.44			1.34
Fuel Wagon	2.00	0.18		0.04			0.22
Tool Carrier	16.27	0.73		0.36			1.09
Equipment	500.12	51.01		11.00			62.02
TOTAL NON-CASH OVERHEAD COSTS	692.45	59.86		15.19			75.05
TOTAL COSTS/ACRE							753.10
TOTAL COSTS/CWT							9.41

Table 2.

U.C. COOPERATIVE EXTENSION
 DETAILS OF COSTS PER ACRE TO PRODUCE RICE
 BUTTE COUNTY - 1992

Use of trade names does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products .

Labor Rate: \$9.50/hr. machine labor Interest Rate: 9.00%
 \$8.10/hr. non-machine labor

	Quantity/Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
OPERATING COSTS					
Custom:					
Laser Leveling	0.33	acre	75.00	24.75	
Air Appl - Dry Fertilizer	5.18	cwt	2.55	13.74	
Soaking - Seed	1.50	cwt	1.20	1.80	
Delivery - Seed	1.80	cwt	0.63	1.13	
Air Application - Seed	1.80	cwt	4.35	7.83	
Air Application - Zinc	2.00	acre	3.50	7.00	
Air Application - Furadan	0.60	acre	3.80	2.28	
Air Application - Copper	0.10	cwt	2.50	0.25	
Air Application - Ordram	1.00	acre	6.00	6.00	
Air Application - Londax	1.00	acre	4.95	4.95	
Air Application - Sevin	0.25	lb	0.24	0.06	
Fertilizer:					
10-10-5	40.00	lb	0.80	32.00	
Aqua Ammonia	100.00	lb	0.17	17.00	
Zinc Sulfate 26%	50.00	lb	0.13	6.50	
Murate of Potash	20.00	lb	0.08	1.60	
Ammonium Sulfate	18.00	lb	0.28	5.04	
Rent:					
Tank Rental	1.00	acre	3.00	3.00	
Water:					
Water - District	6.00	acft	2.84	17.04	
Tailwater System:					
Energy Costs	1.00	acre	0.67	0.67	
Maintenance	1.00	acre	3.00	3.00	
Seed:					
Seed	1.50	cwt	12.75	19.13	
Insecticide:					
Furadan 5G	6.00	lb	0.87	5.22	
Sevin 80S	0.25	lb	3.23	0.81	
Herbicide:					
Copper Sulfate	10.00	lb	0.66	6.60	
Ordram 10G	40.00	lb	0.77	30.80	
Londax 60	1.66	oz	19.35	32.12	
Vertebrate Control:					
Shotgun Shells	1.00	box	5.00	5.00	
Contract:					
Drying	80.00	cwt	0.63	50.40	
Storage	80.00	cwt	0.55	44.00	
Burn Permit:					
Burn Permit	1.00	acre	0.34	0.34	

Labor (machine)	4.64	hrs	9.50	44.07	
Labor (non-machine)	1.35	hrs	8.10	10.94	
Fuel - Gas	1.52	gal	0.98	1.49	
Fuel - Diesel	38.51	gal	0.71	27.34	
Lube				4.32	
Machinery repair				33.60	
Interest on operating capital @ 9.00%				14.58	
TOTAL OPERATING COSTS/ACRE				486.40	
TOTAL OPERATING COSTS/CWT				6.08	

CASH OVERHEAD COSTS:					
Land Rent @ 25% Share				150.00	
Office Expense				30.00	
Check Off - Research				4.00	
Check Off - Promotion				1.60	
Water District Fee				3.00	
Property Taxes				0.38	
Equipment Insurance				1.90	
Investment Repairs				0.77	
TOTAL CASH OVERHEAD COSTS/ACRE				191.65	

TOTAL CASH COSTS/ACRE				678.05	
TOTAL CASH COSTS/CWT				8.48	
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U.C. COOPERATIVE EXTENSION
Table 2. continued

NON-CASH OVERHEAD COSTS (DEPRECIATION & INTEREST):	
Shop Building	8.93
Fuel Tanks & Pumps	0.75
Storage Building	0.70
Shop Tools	1.34
Fuel Wagon	0.22
Tool Carrier	1.09
Equipment	62.02

TOTAL NON-CASH OVERHEAD COSTS/ACRE	75.05

TOTAL COSTS/ACRE	753.10
TOTAL COSTS/CWT	9.41

NET RETURNS ABOVE TOTAL COSTS	-153.10
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Table 3.

U.C. COOPERATIVE EXTENSION
MONTHLY CASH COSTS PER ACRE TO PRODUCE RICE
BUTTE COUNTY - 1992

Beginning Ending	MAR 92 JAN 93	FEB 92	MAR 92	APR 92	MAY 92	JUN 92	JUL 92	AUG 92	SEP 92	OCT 92	NOV 92	DEC 92	JAN 93	TOTAL
Cultural:														
Chisel				4.47										4.47
Maintain Roads & Airstrip				0.39	0.39	0.79								1.57
Maintain Levees				0.82										0.82
Disc Stubble					6.79									6.79
Disc Harrow 2X					4.46	4.46								8.92
Triplane Field						6.54								6.54
Laser Level Field							24.75							24.75
Roll (Final Seedbed)						1.65								1.65
Fertilize - Prestarter						42.20								42.20
Fertilize - Preplaced						25.45								25.45
Flood & Irrigate				4.18	7.71	6.53	5.36	3.09						26.87
Plant Seed					29.89									29.89
Fertilize - Zinc Sulfate					13.50									13.50
Fertilize - Potassium					2.56									2.56
Pest Control - Weevils					7.50									7.50
Pest Control - Shrimp/Algae					6.85									6.85
Pest Control - Vertebrate					2.90				2.90					5.81
Pest Control - Grasses						36.80								36.80
Pest Control - Broadleafs						37.07								37.07
Fertilize - Topdress								7.62						7.62
Pest Control - Armyworm									0.87					0.87
Pickup Truck Use				1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	12.54
TOTAL CULTURAL COSTS				7.08	17.21	153.40	106.55	14.37	8.25	1.39	1.39	1.39		311.03
Harvest:														
Drain									0.81					0.81
Combine Rice										17.21	17.21			34.42
Bankout Rice										10.74	10.75			21.49
Dry Green Rice										25.20	25.20			50.40
Store Rice										22.00	22.00			44.00
TOTAL HARVEST COSTS									0.81	75.15	75.16			151.12
Postharvest:														
Prepare Fields For Burning												0.44		0.44
Burn Permit And Fees												0.34		0.34
Burn 90% Of The Acreage												8.20		8.20
Incorporate Straw With Disc												0.68		0.68
TOTAL POSTHARVEST COSTS												9.66		9.66
Interest on oper. capital				0.05	0.18	1.33	2.13	2.24	2.31	2.88	3.46			14.58
TOTAL OPERATING COSTS/ACRE				7.13	17.40	154.73	108.68	16.61	11.37	79.42	80.01	11.05		486.40
TOTAL OPERATING COSTS/CWT				0.09	0.22	1.93	1.36	0.21	0.14	0.99	1.00	0.14		6.08
OVERHEAD:														
Land Rent @ 25% Share											150.00			150.00
Office Expense				3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33		30.00
Check Off - Research											5.60			5.60
Check Off - Promotion											5.60			5.60
Water District Fee	3.00													3.00
Property Taxes								0.19						0.38
Equipment Insurance								0.95						1.90
Investment Repairs				0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		0.77
TOTAL CASH OVERHEAD COSTS	3.00			3.42	3.42	3.42	3.42	4.56	3.42	3.42	159.02	3.42		191.65

Table 4.

COOPERATIVE EXTENSION
WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS
BUTTE COUNTY - 1992

ANNUAL EQUIPMENT COSTS

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Yr	Description	Price	- Non-Cash Over. - -			Cash Overhead -		Total
			Yrs Life	Depre- ciation	Interest	Insur- ance	Taxes	
92	165 HP Crawler	149800	15	8994.00	3293.80	411.73	82.35	12781.88
92	300 HP 4WD Tractor	123050	10	11074.50	2707.10	338.39	67.68	14187.67
92	40 HP 2WD Tractor	20865	10	1877.80	459.04	57.38	11.48	2405.70
92	Bankout - SP 160 Cwt	69950	8	7869.38	1538.90	192.36	38.47	9639.11
92	Bankout - SP 160 Cwt	69550	8	7824.37	1530.10	191.26	38.25	9583.98
92	Chisel Plow - 18'	9095	10	818.50	200.10	25.01	5.00	1048.61
92	Combine - 18' & Chopper	174410	7	22424.10	3837.02	479.63	95.93	26836.68
92	Combine - 18' & Chopper	174410	7	22424.10	3837.02	479.63	95.93	26836.68
92	Disc - Offset 14'	27820	15	1669.20	612.04	76.51	15.30	2373.05
92	Disc - Offset 21'	24610	15	1476.60	541.42	67.68	13.54	2099.24
92	Mower - 7'	6955	10	625.90	153.02	19.13	3.83	801.88
92	Pickup Truck	23540	7	3026.57	517.88	64.74	12.95	3622.14
92	Pickup Truck	23540	7	3026.57	517.88	64.74	12.95	3622.14
92	Rice Roller - 24'	10700	15	642.00	235.40	29.43	5.89	912.72
92	Ridger - Disc	6955	15	417.27	153.02	19.13	3.83	593.25
92	Sprayer	3745	10	337.00	82.40	10.30	2.06	431.76
92	Triplane - 14'	18725	15	1123.47	411.96	51.49	10.30	1597.22
TOTAL		937720		95651.33	20628.10	2578.54	515.74	119373.71
40% of New Cost *		375088		38260.53	8251.24	1031.42	206.30	47749.48

* Used to reflect a mix of new and used equipment.

ANNUAL INVESTMENT COSTS

=====								
Yr	Description	Price	- Non-Cash Over. - -			Cash Overhead -		Total
			Yrs Life	Depre- ciation	Interest	Insur- ance	Taxes	
INVESTMENT								
	Fuel Tanks & Pumps	8050	20	402.50	161.00	20.13	4.03	712.66
	Fuel Wagon	1500	10	135.00	33.00	4.13	0.83	222.96
	Shop Building	100000	20	4500.00	2200.00	275.00	55.00	7130.00
	Shop Tools	15000	20	675.00	330.00	41.25	8.25	1154.50
	Storage Building	7500	20	375.00	150.00	18.75	3.75	647.50
	Tool Carrier	12200	20	549.00	268.40	33.55	6.71	957.66
TOTAL INVESTMENT		144250		6636.50	3142.40	392.81	78.57	10825.28

ANNUAL BUSINESS OVERHEAD COSTS

=====				
Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Check Off - Promotion	60000.00	cwt	0.02	1200.00
Check Off - Research	60000.00	cwt	0.05	3000.00
Land Rent @ 25% Share	750.00	acre	150.00	112500.00
Office Expense	750.00	acre	30.00	22500.00
Water District Fee	750.00	acre	3.00	2250.00

Table 5.

COOPERATIVE EXTENSION
HOURLY EQUIPMENT COSTS
BUTTE COUNTY - 1992

Yr Description	COSTS PER HOUR								
	Actual Hours Used	-Non-Cash Depre- ciation	Over- Interest	- Cash Insur- Overhead	Taxes	Repairs	Operating Fuel & Lube	Total Oper.	Total Costs/Hr.
92 165 HP Crawler	300.3	11.98	4.39	0.55	0.11	4.99	7.82	12.81	29.84
92 300 HP 4WD Tractor	552.3	8.02	1.96	0.25	0.05	4.10	14.22	18.32	28.60
92 40 HP 2WD Tractor	472.3	1.59	0.39	0.05	0.01	0.84	1.60	2.44	4.47
92 Bankout - SP 160 Cwt	309.4	10.17	1.99	0.25	0.05	6.72	8.98	15.70	28.17
92 Bankout - SP 160 Cwt	309.4	10.12	1.98	0.25	0.05	6.69	8.98	15.67	28.06
92 Chisel Plow - 18'	273.0	1.20	0.29	0.04	0.01	1.74	0.00	1.74	3.28
92 Combine - 18' & Chopper	309.4	28.99	4.96	0.62	0.12	19.93	11.43	31.36	66.06
92 Combine - 18' & Chopper	309.4	28.99	4.96	0.62	0.12	19.93	11.43	31.36	66.06
92 Disc - Offset 14'	151.8	4.40	1.61	0.20	0.04	5.33	0.00	5.33	11.58
92 Disc - Offset 21'	184.5	3.20	1.17	0.15	0.03	4.71	0.00	4.71	9.26
92 Mower - 7'	80.6	3.11	0.76	0.09	0.02	1.67	0.00	1.67	5.65
92 Pickup Truck	285.0	4.25	0.73	0.09	0.02	2.85	2.25	5.10	10.18
92 Pickup Truck	285.0	4.25	0.73	0.09	0.02	2.85	2.25	5.10	10.18
92 Rice Roller - 24'	86.3	2.98	1.09	0.14	0.03	0.31	0.00	0.31	4.54
92 Ridger - Disc	18.8	8.90	3.26	0.41	0.08	1.33	0.00	1.33	13.99
92 Sprayer	262.5	0.51	0.13	0.02	0.00	1.25	0.00	1.25	1.91
92 Triplane - 14'	147.0	3.06	1.12	0.14	0.03	1.81	0.00	1.81	6.16

Table 6.

COOPERATIVE EXTENSION
RANGING ANALYSIS
BUTTE COUNTY - 1992

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE RICE

	YIELD (CWT/ACRE)						
	50	60	70	80	90	100	110
OPERATING COSTS/ACRE:							
Cultural Cost	311	311	311	311	311	311	311
Harvest Cost	116	128	139	151	163	175	187
Postharvest Cost	10	10	10	10	10	10	10
Interest on operating capital	14	14	14	15	15	15	15
TOTAL OPERATING COSTS/ACRE	451	463	474	486	498	510	522
TOTAL OPERATING COSTS/CWT	9.01	7.71	6.78	6.08	5.54	5.10	4.75
CASH OVERHEAD COSTS/ACRE							
	192	192	192	192	192	192	192
TOTAL CASH COSTS/ACRE	642	654	666	678	690	702	714
TOTAL CASH COSTS/CWT	12.85	10.90	9.52	8.48	7.67	7.02	6.49
NON-CASH OVERHEAD COSTS/ACRE							
	75	75	75	75	75	75	75
TOTAL COSTS/ACRE	717	729	741	753	765	777	789
TOTAL COSTS/CWT	14.35	12.15	10.59	9.41	8.50	7.77	7.17

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR RICE

PRICE (DOLLARS PER CWT)	YIELD (CWT/ACRE)						
	50	60	70	80	90	100	110
6.00	-151	-103	-54	-6	42	90	138
6.50	-126	-73	-19	34	87	140	193
7.00	-101	-43	16	74	132	190	248
7.50	-76	-13	51	114	177	240	303
8.00	-51	17	86	154	222	290	358
8.50	-26	47	121	194	267	340	413
9.00	-1	77	156	234	312	390	468

NET RETURNS PER ACRE ABOVE CASH COSTS FOR RICE

PRICE (DOLLARS PER CWT)	YIELD (CWT/ACRE)						
	50	60	70	80	90	100	110
6.00	-342	-294	-246	-198	-150	-102	-54
6.50	-317	-264	-211	-158	-105	-52	1
7.00	-292	-234	-176	-118	-60	-2	56
7.50	-267	-204	-141	-78	-15	48	111
8.00	-242	-174	-106	-38	30	98	166
8.50	-217	-144	-71	2	75	148	221
9.00	-192	-114	-36	42	120	198	276

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR RICE

PRICE (DOLLARS PER CWT)	YIELD (CWT/ACRE)						
	50	60	70	80	90	100	110
6.00	-417	-369	-321	-273	-225	-177	-129
6.50	-392	-339	-286	-233	-180	-127	-74
7.00	-367	-309	-251	-193	-135	-77	-19
7.50	-342	-279	-216	-153	-90	-27	36
8.00	-317	-249	-181	-113	-45	23	91
8.50	-292	-219	-146	-73	-0	73	146
9.00	-267	-189	-111	-33	45	123	201

Table 7.

COOPERATIVE EXTENSION
 COSTS AND RETURNS / BREAKEVEN ANALYSIS
 BUTTE COUNTY - 1992

COSTS AND RETURNS - PER ACRE BASIS

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Rice	600	486	114	678	-78	753	-153

COSTS AND RETURNS - TOTAL ACREAGE

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Rice	450000	364803	85197	508537	-58537	564828	-114828

BREAKEVEN PRICES PER YIELD UNIT

CROP	Base Yield (Units/Acre)	Yield Units	Breakeven Price To Cover		
			Operating Costs	Cash Costs	Total Costs
Rice	80.0	cwt	6.08	8.48	9.41

BREAKEVEN YIELDS PER ACRE

CROP	Yield Units	Base Price (\$/Unit)	Breakeven Yield To Cover		
			Operating Costs	Cash Costs	Total Costs
Rice	cwt	7.50	64.9	90.4	100.4