1995/1996
UNIVERSITY OF CALIFORNIA
COOPERATIVE EXTENSION

SAMPLE COSTS TO PRODUCE

~BARLEY~

Dryland and Conventional Tillage Conditions
SAN LUIS OBISPO COUNTY

by

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U.C. COOPERATIVE EXTENSION

SAMPLE COSTS TO PRODUCE DRYLAND BARLEY
Under Conventional Tillage Practices
San Luis Obispo County - 1995/1996

INTRODUCTION

Detailed costs to produce barley in San Luis Obispo County are presented in this study. The hypothetical farm used consists of 5,000 acres which are in conventionally tilled dryland barley and wheat production.

This study consists of General Assumptions we used for producing barley along with six tables of cost analyses. The practices described are considered typical for barley production in San Luis Obispo County. They do not reflect the exact values or practices of any grower or shipper, but are rather an amalgamation of costs and practices in the region. Sample costs given for labor, materials, equipment and contract services are based on 1995/1996 prices. Some costs and practices detailed in this study may not be applicable to your situation. *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.* This study is intended as a guide, it can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans.

Costs are presented in six tables.

Table 1. **Costs Per Acre To Produce Barley**
Table 2. **Costs And Returns Per Acre To Produce Barley**
Table 3. **Monthly Cash Costs Per Acre To Produce Barley**
Table 4. **Annual Equipment, Investment And Business Overhead**
Table 5. **Hourly Equipment Costs**
Table 6. **Ranging Analysis**

A blank ***Your Costs*** column is provided to enter your actual costs on **Tables 1** and **2**, **Costs Per Acre To Produce Barley** and **Costs And Returns Per Acre To Produce Barley**.

For an explanation of calculations used for the study refer to the attached General Assumptions, call Area Farm Management Economics Advisor, Eta Takele at the University of California Cooperative Extension, Moreno Valley, California, (909) 683-6491 ext. 243 or call San Luis Obispo County Agronomy Farm Advisor, Michael Smith, (805) 237-3100.

University of California and the United States Department of Agriculture cooperating.

ASSUMPTIONS USED IN THIS STUDY

The following is a description of some of the general assumptions used in the development of the sample costs for producing dryland barley under conventional tillage conditions in San Luis Obispo County in 1995/96.

1. LAND, CLIMATE, AND ROTATION:

Areas that produce dryland barley in the Central Coast are primarily located inland from the coast, east of the Santa Lucia Mountain and the Sierra Madre Mountain ranges.

The site for the hypothetical farm is characterized by both level plains and some moderate to highly erodable hillsides and hilltops. The farm is 5,000 acres, one-half of which is planted to dryland barley and the other one-half to dry land wheat both under conventional tillage.

Land Rent: Growers in the Central Coast both own and rent land for barley production. Rents or leases are charged as a per acre cash rent or share rent based on gross returns or yields. Share rents normally range between 18% to 25%. In this study land rent is based on 20% of the gross returns payable to the owner of the land.

Climate: Annual rainfall for this region varies from 3 to 30 inches, most of which comes in the winter months. Historically temperatures have ranged from 0_ to 117_ with the extremes occurring in the winter and summer, respectively. Growers plan their cropping system around these conditions in order to take advantage of the best possible growing conditions for dryland barley.

Rotation: Rotation is recognized as having beneficial effects on dryland barley production for storing soil moisture, and control of weeds and pests. Weeds not controlled by herbicides are usually managed by fallow rotation. The major agronomic commodities produced in this region have been barley and wheat, although there is interest in hay and safflower. It is important to note that cattle grazing is a very important part of rotational practices for growers in this region.

Amount and timing of annual rainfall, and weed pressures are the most important agronomic factors influencing crop rotation. Dryland barley is very dependent on the amount of rain and how well it is stored in the soil profile. In this study we used a 2-year rotation of barley and summer fallow. Low precipitation or weed infestations that use up stored soil water may cause growers to use a rotation pattern different from the two year rotation described in this report.

2. CULTURAL PRACTICES AND PRODUCTION INPUTS

Cultural practices for the production of conventional tillage, dryland barley in the Carrizo Plains region vary somewhat from grower to grower. Differences in cultural inputs can be caused by seasonal pests and weed pressures, the timing and amounts of rainfall as well as government regulations. Practices and inputs used in this cost study are based on typical grower practices in the region.

Weed Control: The most common and troublesome weeds in this region are wild mustard (*Brassica nigra*), wild radish (*Paphanus sativus* L.), coast fiddleneck (*Amsinka intermedia*), shepardspurse (*Capsella bursa-pastoris* L.), field bindweed (*Convolvulus arvensis*), ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*) and Russian thistle (*Salsola iberica*). Proper weed management is essential for a profitable crop. Weed competition for water and nutrients can significantly reduce dryland barley yields. In this study, herbicides, cultivation and rotation are used for weed control.

Weed control using cultivation techniques begins in October after harvest, when a stubble disc loosens soil prior to winter rains. The following March, a single pass of a chisel plow knocks down many of the winter annual weeds. In April and then again in May, sweeps or points are used to eliminate most of the remaining weeds. In August, weeds that have escaped the prior tillage practices are pulled up with a rod-weeder. A field cultivator may be used to pre-work the soil prior to the use of the rod-weeder depending on the specific site and soil type, but always prior to the fall planting.

Weed control using herbicides is practiced by some growers in place of cultivation in fallow land. The decision whether to use cultivation or chemical methods is based on soil type, topography, the amounts and timing of rainfall as well as personal preferences. Roundup is the most common post-emergent herbicide applied to control weeds that have emerged after the initial winter rains in fallow land.

Both the choice of post-emergent herbicide(s) and timing of application are dependent on the specific site and weed type. In this study, during March, one-half of the acreage is sprayed by air with a combination of Glean and 2,4-D amine to control Russian Thistle and other broadleaves. Avenge is applied to the other half of the acreage to control wild oats and retard the growth of ripgut brome.

Pesticides, rates, and cultural practices mentioned in this cost study are listed in the *UC IPM Small Grains Pest Management Guidelines,* and *Integrated Pest Management for Small Grains*. Written recommendations are required for many pesticides and are made by licensed pest control advisors. For information and pesticide use permits, contact the Agricultural Commissioner's office in either Paso Robles or San Luis Obispo. For additional production information contact the San Luis Obispo County agronomy farm advisor.

Fertilization: Nitrogen (N) and phosphorus are the major nutrients required for dryland barley production. Aqua ammonia (20-0-0) is commonly the principle form of nitrogen used to fertilize barley, though other formulations of nitrogen provide supplemental amounts of N. Aqua ammonia is injected into the soil at the same time as the last tillage operation just prior to planting. Additional “starter” fertilizers that contain nitrogen and significant amounts of phosphorus and sulfur, such as 26-14-0-12 and 30-12-0-8, are applied during the planting operation via the grain drill. Fertilizer rates on the Carrizo Plains are relatively low compared to other regions. In this study, aqua ammonia supplies about one-half of the applied N and 26-14-0-12 the other half, totaling 40 pound of N per acre. Some growers may apply additional N by topdressing between tillering and jointing.

Planting: Planting is accomplished with grain drills. Fields are cultivated prior to planting, permitting conventional grain drills or air seeders to be used. Dryland barley is planted at rates of 70 to 90 pounds per acre. As noted in fertilizer section, additional granular 26-14-0-12 may be applied concurrently with seeding.

The most common seed variety used in San Luis Obispo County is UC 337. The cost of seed is calculated at market prices plus $25 per ton for custom cleaning and 10% to cover cleaning losses.

The optimum time to plant is considered to be mid-November through January.

3. HARVEST AND TRANSPORTATION:

Harvest: Typically growers with this size farm will own their combines, truck-tractors, grain trailers, and support equipment. The combines are specifically designed for hillside use. This design lets the grain platform (or header) and chassis run at the same slope as the hill while the cab and grain bin remain upright. In this study, 20 foot header combines are used. Truck-tractors are used to haul empty grain trailers up and along side combines so harvested grain can be directly loaded into them. Full trailers are hauled from fields to either on farm storage facilities or to market.

Hauling: Growers own their own trucks and trailers and often haul their grain to market themselves. The other option is to have the barley hauled by a contract hauling company. Either way, the growers bear the cost of transportation. Typical hauling charges are $8 per ton from on-farm storage and $10 per ton from the field.

Harvesting is done either by the growers or on custom contract basis. In this study, the grower harvests the crop. Harvest equipment are listed in investment costs in 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, a custom charge must be used in place of all harvesting costs.

4. YIELDS & RETURNS

Yields: Crop yields for barley in San Luis Obispo County over the past seven years range from 0.62 to 1.30 tons per acre. County average yields from 1988 to 1994 are shown in **Table B**. In this study, a barley yield of 1.40 tons per acre is used.

Returns: Average barley prices have ranged from $100 to $122 per ton for San Luis Obispo County growers. Grower prices over the last seven years are shown in **Table B**. These prices do not include any income from government programs. However, federal farm programs can play an important role in dryland barley production and require consideration by growers and landowners in estimating their returns and profitability. Growers should contact their local FSA office to determine how best to use these services.

Table B. Average Yield and Price for Barley, San Luis Obispo County, 1988 - 1994 [1/]

Year	Tons Per Acre	$ Per Ton
1994	1.02	108
1993	1.12	105
1992	1.13	102
1991	0.80	100
1990	0.62	110
1989	0.85	116
1988	1.30	122

[1/] From San Luis Obispo County Crop Reports, 1988 - 1994

5. RISK

The risks associated with dryland barley production should be noted. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks which affect the profitability and economic viability of barley production.

Risk is caused by various sources of uncertainty which include production, price, and financial. Examples include insect damage, a decrease in price, and an increase in interest rates. Because of these risks, access to production information as well as market and financial information is crucial.

6. LABOR

Basic hourly wages for workers are $5.00 per hour for both machine operators and non-machine workers. Adding 34% for SDI, FICA, insurance and other benefits gives the labor rates shown of $6.70 per hour for labor. The labor for operations involving machinery are 20% higher to account for the extra labor involved in equipment set up, moving, maintenance and repair.

7. CASH OVERHEAD

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs include property taxes, interest on operating capital, office expense, liability and property insurance, and equipment repairs.

Property Taxes: In California, counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

Interest On Operating Capital: Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 7.89% per year. A nominal interest rate is the going market cost of borrowed funds during the production year.

Insurance: Insurance for farm investments vary depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.713% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs $960 for the entire farm or $0.2 per producing acre of land.

Office Expense: Office and business expenses are estimated at $5 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road maintenance, etc. Cash overhead costs are found in **Tables 1**, **2**, **3** and **4**.

8. NON-CASH OVERHEAD

Non-cash overhead is comprised of depreciation and interest charged on equipment and other investments. Purchase of used equipment is common with dryland barley growers operating on very narrow margins. In this study the current purchase price for new equipment is adjusted to 40% of new value to indicate the mix of new and used equipment. Annual equipment and investments costs are shown in **Tables 1** and **4**. They represent depreciation and opportunity costs for each investment on an annual per acre basis.

Depreciation: Depreciation is a reduction in market value of investments due to wear, obsolescence, and age, and is on a straight line basis. Annual depreciation is calculated as purchase price minus salvage value divided by years the investment is held. The purchase price and years of life are shown in **Table 4**.

Interest On Investment: Interest is charged on investments to account for income foregone (opportunity cost) that could be received from an alternative investment. The investments are assumed to be owned outright. Therefore, interest on investments is a non-cash cost. Investments include buildings and equipment. Interest is calculated as the average value of the investment during its useful life, multiplied by 3.72% per year. Average value for equipment and buildings equals new cost plus salvage value divided by 2 on a per acre basis.

The interest rate used to calculate opportunity cost is estimated as a ten year average of the agricultural sector long run rate of return to production assets. It is used to reflect the long-term realized rate of return to these specialized resources that can only be used effectively in the agricultural sector.

9. EQUIPMENT CASH COSTS

Equipment costs are composed of three parts; non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of fuel, lubrication, and repairs.

In allocating the equipment costs on a per acre basis, hourly charges are calculated first and shown in **Table 5**. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the American Society of Agricultural Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO HP, and type of fuel used. The fuel and repair cost per acre for each operation in **Table 1** is determined by multiplying the total hourly operating cost in **Table 5** for each piece of equipment used for the cultural practice by the number of hours per acre for that operation. Tractor time is 10% higher than implement time for a given operation to account for setup time. Prices for on-farm delivery of diesel and gasoline are $0.95 and $1.20 per gallon, respectively.

10. ADDENDUM

1. Due to rounding, totals may be slightly different from the sum of components.

2. The per acre equipment costs in Table 1 reflect both the value and the level of use (hours and years of use) of the machinery complement. Therefore this cost could be different from the per acre value of the machinery complement in Table 4.

11. ACKNOWLEDGMENT

Appreciation is expressed to Paul Zellman, Staff Research Associate, who was involved at the initial stage of the development of this cost study and Delos Walton, Staff Research Associate, for assisting in the development of the final report. We also express our appreciation to those growers and other cooperators who provided data for the development of this cost study.

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Table 1. COSTS PER ACRE TO PRODUCE BARLEY

Labor Rate: $ 6.70/hr. machine labor $ 0.00/hr. non-machine labor Yield per Acre:1.40 Ton Interest Rate: 7.89%

Operation	Time (Hrs/A)	Labor Cost	Fuel,Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
			Cash and Labor Costs per Acre				
Cultural:							
Stubble Disc	0.14	1.11	5.20	0.00	0.00	6.31	
Chisel Plow	0.10	0.83	3.43	0.00	0.00	4.26	
Cultivate	0.15	1.21	4.89	0.00	0.00	6.10	
Rod Weeder	0.04	0.33	1.30	0.00	0.00	1.63	
Aqua Rig Injection	0.05	0.41	1.95	2.10	0.00	4.46	
Drill seed & starter fertilizer	0.06	0.46	3.04	24.57	0.00	28.08	
Aerial Post-emerg. Herbicide	0.00	0.00	0.00	4.18	3.75	7.93	
Pickup Truck Use	0.16	1.29	0.81	0.00	0.00	2.09	
TOTAL CULTURAL COSTS	0.70	5.63	20.63	30.86	3.75	60.87	
Harvest:							
Harvest	0.10	1.61	7.89	0.00	0.00	9.50	
Haul from field to storage	0.05	0.40	0.73	0.00	0.00	1.13	
TOTAL HARVEST COSTS	0.15	2.01	8.62	0.00	0.00	10.63	
Haul to LA Market	0.08	0.64	0.00	0.00	14.00	14.64	
TOTAL POSTHARVEST COSTS	0.08	0.64	0.00	0.00	14.00	14.64	
Interest on operating capital @ 7.89%						4.55	
TOTAL OPERATING COSTS/ACRE		8.29	29.25	30.86	17.75	90.70	
TOTAL OPERATING COSTS/TON						64.78	
CASH OVERHEAD:							
Liability Insurance						0.20	
Office Expense						5.00	
Share Rent						32.20	
Property Taxes						0.82	
Property Insurance						0.58	
Investment Repairs						0.61	
TOTAL CASH OVERHEAD COSTS						39.41	
TOTAL CASH COSTS/ACRE						130.10	
TOTAL CASH COSTS/TON						92.93	

NON-CASH OVERHEAD: Investment	Per producing Acre	Annual Cost Depreciation	Annual Cost Interest @ 3.72%		
Fuel Tanks & Pumps	3.63	0.22	0.07	0.29	
Fuel Wagon	0.36	0.03	0.01	0.04	
Grain Storage	12.00	0.36	0.25	0.61	
Shop Building	11.94	0.54	0.24	0.78	
Shop Tools	2.39	0.11	0.05	0.16	
Equipment	118.61	10.03	2.43	12.46	
TOTAL NON-CASH OVERHEAD COSTS	148.93	11.28	3.05	14.33	
TOTAL COSTS/ACRE				144.44	
TOTAL COSTS/TON				103.17	

Table 2.

U.C. COOPERATIVE EXTENSION
COSTS AND RETURNS PER ACRE TO PRODUCE BARLEY
SAN LUIS OBISPO COUNTY - 1995/96

Labor Rate:$ 6.70/hr. machine labor $ 0.00/hr. non-machine labor Interest Rate: 7.89%

	Quantity/Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
		GROSS RETURNS			
Barley	1.40	Ton	115.00	161.00	
TOTAL GROSS RETURNS FOR BARLEY				161.00	
		OPERATING COSTS			
Fertilizer:					
Aqua Ammonia	50.00	Lb	0.042	2.10	
26-14-0-12	154.00	Lb	0.118	18.17	
Seed: Barley Seed	80.00	Lb	0.080	6.40	
Custom:					
Aerial Application	1.00	Acre	3.75	3.75	
Haul to LA	1.40	Ton	10.00	14.00	
Herbicide:					
2,4-D Amine	0.33	Gal	12.68	4.18	
Labor (machine)	1.24	hrs	6.70	8.29	
Labor (non-machine)	0.00	hrs	0.00	0.00	
Fuel - Gas	0.40	gal	1.20	0.48	
Fuel - Diesel	13.29	gal	1.15	15.28	
Lube				2.36	
Machinery repair				11.12	
Interest on operating capital @	7.89%			4.55	
TOTAL OPERATING COSTS/ACRE				90.70	
TOTAL OPERATING COSTS/TON				64.78	
NET RETURNS ABOVE OPERATING COSTS				70.30	
		CASH OVERHEAD COSTS:			
Liability Insurance				0.20	
Office Expense				5.00	
Share Rent				32.20	
Property Taxes				0.82	
Property Insurance				0.58	
Investment Repairs				0.61	
TOTAL CASH OVERHEAD COSTS/ACRE				39.41	
TOTAL CASH COSTS/ACRE				130.10	
TOTAL CASH COSTS/TON				92.93	

Table 2. Continued

U.C. COOPERATIVE EXTENSION	
NON-CASH OVERHEAD COSTS (DEPRECIATION & INTEREST):	
Fuel Tanks & Pumps	0.29
Fuel Wagon	0.04
Grain Storage	0.61
Shop Building	0.78
Shop Tools	0.16
Equipment	12.46
TOTAL NON-CASH OVERHEAD COSTS/ACRE	14.33
TOTAL COSTS/ACRE	144.44
TOTAL COSTS/TON	103.17
NET RETURNS ABOVE TOTAL COSTS	16.56

Table 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE BARLEY
SAN LUIS OBISPO COUNTY - 1995/96

Beginning OCT 94 Ending SEP 96	OCT 94	NOV 94	DEC 94	JAN 95	FEB 95	MAR 95	APR 95	MAY 95	JUN 95	JUL 95	AUG 95	SEP 95	
Cultural:													
Stubble Disc	6.31												
Chisel Plow						4.26							
Cultivate							3.05						
Rod Weeder											1.63		
Aqua Rig Injection													
Drill seed & starter fertilizer													
Aerial Post-emerg. Herbicide													
Pickup Truck Use	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
TOTAL CULTURAL COSTS	6.48	0.17	0.17	0.17	0.17	4.44	3.22	0.17	0.17	0.17	1.81	0.17	
Harvest:													
Haul from field to storage													
TOTAL HARVEST COSTS													
Postharvest:													
Haul to LA Market													
TOTAL POSTHARVEST COSTS													
Interest on oper. capital	0.04	0.04	0.04	0.05	0.05	0.08	0.10	0.10	0.10	0.10	0.11	0.11	
TOTAL OPERATING COSTS/ACRE	6.53	0.22	0.22	0.22	0.22	4.51	3.32	0.27	0.27	0.28	1.92	0.29	
TOTAL OPERATING COSTS/TON	4.66	0.16	0.16	0.16	0.16	3.22	2.37	0.20	0.20	0.20	1.37	0.21	
OVERHEAD:													
Liability Insurance													
Office Expense	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	
Share Rent													
Property Taxes				0.41						0.41			
Property Insurance				0.29						0.29			
Investment Repairs	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
TOTAL CASH OVERHEAD COSTS	0.26	0.26	0.26	0.96	0.26	0.26	0.26	0.26	0.26	0.96	0.26	0.26	
TOTAL CASH COSTS/ACRE	6.78	0.48	0.48	1.18	0.48	4.77	3.58	0.53	0.53	1.24	2.18	0.55	
TOTAL CASH COSTS/TON	4.85	0.34	0.34	0.84	0.34	3.41	2.56	0.38	0.38	0.88	1.56	0.39	

Cultural:													
Stubble Disc													6.31
Chisel Plow													4.26
Cultivate	3.05												6.10
Rod Weeder													1.63
Aqua Rig Injection		4.46											4.46
Drill seed & starter fertilizer		28.08											28.08
Aerial Post-emerg. Herbicide						7.93							7.93
Pickup Truck Use													2.09
TOTAL CULTURAL COSTS	3.05	32.54				7.93							60.87

Table 3. Continued

U.C. COOPERATIVE EXTENSION
MONTHLY CASH COSTS PER ACRE TO PRODUCE BARLEY
SAN LUIS OBISPO COUNTY - 1995/96

Beginning OCT 94 Ending SEP 96	OCT 95	NOV 95	DEC 95	JAN 96	FEB 96	MAR 96	APR 96	MAY 96	JUN 96	JUL 96	AUG 96	SEP 96	TOTAL
Harvest:													
Harvest										9.50			9.50
Haul from field to storage										1.13			1.13
TOTAL HARVEST COSTS										10.63			10.63
Postharvest:													
Haul to LA Market												14.64	14.64
TOTAL POSTHARVEST COSTS												14.64	14.64
Interest on oper. capital	0.13	0.35	0.35	0.35	0.35	0.40	0.40	0.40	0.40	0.47			4.52
TOTAL OPERATING COSTS/ACRE	3.18	32.89	0.35	0.35	0.35	8.33	0.40	0.40	0.40	11.10		14.64	90.67
TOTAL OPERATING COSTS/TON	2.27	23.49	0.25	0.25	0.25	5.95	0.29	0.29	0.29	7.93		10.46	64.76
OVERHEAD:													
Liability Insurance				0.20									0.20
Office Expense	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	5.00
Share Rent										32.20			32.20
Property Taxes													0.82
Property Insurance													0.58
Investment Repairs													0.61
TOTAL CASH OVERHEAD COSTS	0.21	0.21	0.21	0.41	0.21	0.21	0.21	0.21	0.21	32.41	0.21	0.21	39.41
TOTAL CASH COSTS/ACRE	3.39	33.10	0.56	0.76	0.56	8.54	0.61	0.61	0.61	43.51	0.21	14.85	130.08
TOTAL CASH COSTS/TON	2.42	23.64	0.40	0.54	0.40	6.10	0.43	0.43	0.43	31.08	0.15	10.61	92.91

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Table 4. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS TO PRODUCE BARLEY

SAN LUIS OBISPO COUNTY - 1995/96

ANNUAL EQUIPMENT COSTS

			Yrs	- Non-Cash Over. - Depre-		- Cash Overhead - Insur-		
Yr	Description	Price	Life	ciation	Interest	ance	Taxes	Total
96	300 HP 4WD Tractor	120000	12	9000.00	2455.20	470.58	660.00	12585.78
96	300 HP 4WD Tractor #2	120000	12	9000.00	2455.20	470.58	660.00	12585.78
96	Aqua Rig-40' 800ga	20000	10	1800.00	409.20	78.43	110.00	2397.63
96	Chisel Plow - 40'	17000	15	1020.00	347.82	66.67	93.50	1527.99
96	Chisel Plow - 40' #2	17000	15	1020.00	347.82	66.67	93.50	1527.99
96	Combine-20' Header	160000	10	14400.00	3273.60	627.44	880.00	19181.04
96	Combine-20' Header #2	160000	10	14400.00	3273.60	627.44	880.00	19181.04
96	Cultivator - 55'	15000	10	1350.00	306.90	58.82	82.50	1798.22
96	Cultivator - 55' #2	15000	10	1350.00	306.90	58.82	82.50	1798.22
96	Disc - Stubble 30’	37500	15	2250.00	767.25	147.06	206.25	3370.56
96	Disc - Stubble 30' #2	37500	15	2250.00	767.25	147.06	206.25	3370.56
96	Grain Drill - 36'	35000	10	3150.00	716.10	137.25	192.50	4195.85
96	Grain Drill - 36' #2	35000	10	3150.00	716.10	137.25	192.50	4195.85
96	Pickup 1/2 Ton	13125	7	1687.43	268.55	51.47	72.19	2079.64
96	Pickup 1/2 Ton #2	13125	7	1687.43	268.55	51.47	72.19	2079.64
96	Rod Weeder 50'	15000	10	1350.00	306.90	58.82	82.50	1798.22
96	Truck & Grain Trailer	60000	10	5400.00	1227.60	235.29	330.00	7192.89
TOTAL		890250		74264.86	18214.54	3491.12	4896.38	100866.90
40% of New Cost *		356100		29705.94	7285.82	1396.45	1958.55	40346.76

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

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	------ Cash Overhead ------ Insur- ance	Taxes	Repairs	Total
INVESTMENT								
Fuel Tanks & Pumps	18152	15	1089.13	371.39	71.18	99.84	363.00	1994.54
Fuel Wagon	1808	10	162.70	37.00	7.09	9.94	36.16	252.89
Grain Storage	60000	30	1800.00	1227.60	235.29	330.00	1200.00	4792.89
Shop Building	59682	20	2685.70	1221.09	234.04	328.25	1193.00	5662.08
Shop Tools	11936	20	537.10	244.22	46.81	65.65	238.70	1132.48
TOTAL INVESTMENT	151578		6274.63	3101.30	594.41	833.68	3030.86	13834.88

U.C. COOPERATIVE EXTENSION

Table 4. Continued

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	5000.00	Acre	0.20	1000.00
Office Expense	5000.00	Acre	5.00	25000.00
Share Rent	2500.00	Acre	32.20	80500.00

U.C. COOPERATIVE EXTENSION

Table 5. HOURLY EQUIPMENT COSTS TO PRODUCE BARLEY
SAN LUIS OBISPO COUNTY - 1995/96

		COSTS PER HOUR							
		-Non-Cash Over.-		- Cash Overhead -			-------- Operating --------		
Yr Description	Actual Hours Used	Depre-ciation	Interest	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
96 300 HP 4WD Tractor	1000.3	3.60	0.98	0.19	0.26	4.00	23.03	27.03	32.06
96 300 HP 4WD Tractor #2	999.6	3.60	0.98	0.19	0.26	4.00	23.03	27.03	32.07
96 Aqua Rig-40' 800ga	128.9	5.58	1.27	0.24	0.34	8.04	0.00	8.04	15.48
96 Chisel Plow - 40'	224.9	1.81	0.62	0.12	0.17	3.57	0.00	3.57	6.29
96 Chisel Plow - 40' #2	224.9	1.81	0.62	0.12	0.17	3.57	0.00	3.57	6.29
96 Combine-20' Header	275.0	20.95	4.76	0.91	1.28	19.38	16.50	35.88	63.78
96 Combnie-20' Header #2	275.0	20.95	4.76	0.91	1.28	19.38	16.50	35.88	63.78
96 Cultivator - 55'	249.5	2.16	0.49	0.09	0.13	2.88	0.00	2.88	5.76
96 Cultivator - 55' #2	249.5	2.16	0.49	0.09	0.13	2.88	0.00	2.88	5.76
96 Disc - Stubble 30'	249.8	3.60	1.23	0.24	0.33	8.12	0.00	8.12	13.52
96 Disc - Stubble 30' #2	249.8	3.60	1.23	0.24	0.33	8.12	0.00	8.12	13.52
96 Grain Drill - 36'	143.3	8.80	2.00	0.38	0.54	11.70	0.00	11.70	23.42
96 Grain Drill - 36' #2	143.3	8.80	2.00	0.38	0.54	11.70	0.00	11.70	23.42
96 Pickup 1/2 Ton	285.0	2.37	0.38	0.07	0.10	1.59	3.45	5.04	7.96
96 Pickup 1/2 Ton #2	285.0	2.37	0.38	0.07	0.10	1.59	3.45	5.04	7.96
96 Rod Weeder 50'	199.1	2.71	0.62	0.12	0.17	1.82	0.00	1.82	5.43
96 Truck & Grain Trailer	200.0	10.80	2.46	0.47	0.66	9.62	4.96	14.58	28.96

Table 6.

U.C. COOPERATIVE EXTENSION
RANGING ANALYSIS TO PRODUCE BARLEY
SAN LUIS OBISPO COUNTY - 1995/96

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE BARLEY

	YIELD (TON/ACRE)				
	1.00	1.20	1.40	1.60	1.80
	OPERATING COSTS/ACRE:				
Cultural Cost	61	61	61	61	61
Harvest Cost	6	8	11	13	16
Postharvest Cost	15	15	15	15	15
Interest on operating capital	5	5	5	5	5
TOTAL OPERATING COSTS/ACRE	86	88	91	93	96
CASH OVERHEAD COSTS/ACRE	40	39	39	39	39
TOTAL CASH COSTS/ACRE	125	128	130	133	135
NON-CASH OVERHEAD COSTS/ACRE	16	14	14	14	15
TOTAL COSTS/ACRE	142	141	144	147	150

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR BARLEY

PRICE	YIELD (TON/ACRE)				
(DOLLARS PER TON)	1.00	1.20	1.40	1.60	1.80
105.00	19	38	56	75	93
110.00	24	44	63	83	102
115.00	29	50	70	91	111
120.00	34	56	77	99	120
125.00	39	62	84	107	129

Table 6. Continued

NET RETURNS PER ACRE ABOVE CASH COSTS FOR BARLEY

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE) 1.00	1.20	1.40	1.60	1.80
105.00	-20	-2	17	35	54
110.00	-15	4	24	43	63
115.00	-10	10	31	51	72
120.00	-5	16	38	59	81
125.00	-0	22	45	67	90

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR BARLEY

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE) 1.00	1.20	1.40	1.60	1.80
105.00	-37	-15	3	21	39
110.00	-32	-9	10	29	48
115.00	-27	-3	17	37	57
120.00	-22	3	24	45	66
125.00	-17	9	31	53	75