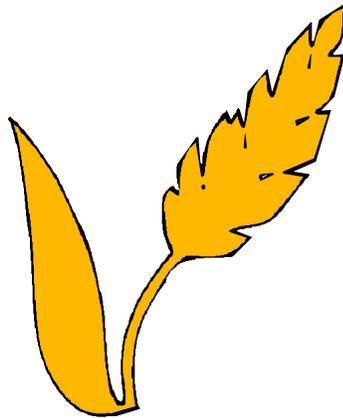

1994

U.C. COOPERATIVE EXTENSION

SAMPLE COSTS PRODUCE

~WHEAT~



Under Dryland And Conventional Tillage Conditions
IN YOLO COUNTY

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U.C. COOPERATIVE EXTENSION

GENERAL INFORMATION FOR PRODUCING WHEAT

Under Dryland And Conventional Tillage Conditions Yolo County - 1994

The detailed costs for wheat production in Yolo County are presented in this study. The hypothetical farm used in this report is based on a survey of selected grower practicing these techniques and consists of 1715 acres of which 130 acres are in conventionally tilled wheat production.

Practices described in this study are based on those production procedures used by the growers surveyed in this study and represent practices used under growing conditions in Yolo County. Sample costs given for labor, materials, equipment and contract services are based on growers' costs and current figures. Some costs and practices detailed in this study may not be applicable to your situation. 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 **Tables 2 and 3, Costs Per Acre to Produce Wheat and Costs And Returns Per Acre to Produce Wheat**, respectively.

This study consists of General Assumptions for Producing Wheat and eight tables and two charts.

Table 1.	Costs Per Acre To Produce Wheat
Table 2.	Cost And Returns Per Acre To Produce Wheat
Table 3.	Monthly Cash Costs Per Acre To Produce Wheat - Annual Rotation
Table 4.	Whole Farm Annual Equipment, Investment And Business Overhead
Table 5.	Hourly Equipment Costs
Table 6.	Ranging Analysis

A companion study entitled, "Sample Costs to Produce Wheat Under Dryland and No-till Conditions in Yolo County - 1994" is available for those interested in conventionally tilled wheat production or a comparison between the two systems. Also available are two dryland barley cost studies entitled, "Sample Costs to Produce Barley Under Dryland and Conventional Tillage Conditions in the Central Coast of California - 1994" and "Sample Costs to Produce Barley Under Dryland and No-till Conditions in the Central Coast of California - 1994". These and other cost of production studies can be obtained by calling (530) 752-1515.

This study was funded by a grant from the California Energy Commission, Energy Efficiency and Local Assistance Division. Energy analysis for this report can be found in "No-Till Wheat and Barley Production in California" and is available at selected local county Cooperative Extension offices, USDA Soil Conservation Service, California Energy Commission, or by phoning LAWR, U. C. Davis at (530) 752-2222.

For an explanation of calculations used for the study refer to the attached General Assumptions or call the Department of Agricultural and Resource Economics, Cooperative Extension, University of California, Davis, California, (530) 752-3589 or the farm advisor in the county of interest.

U.C. COOPERATIVE EXTENSION

GENERAL ASSUMPTIONS FOR PRODUCING WHEAT

Under Dryland and Conventional Tillage Conditions Yolo County- 1994

The following is a description of some general assumptions pertaining to sample costs of producing dryland wheat using non-tillage practices in Yolo County. Practices described should not be considered recommendations by the University of California, but rather represent production procedures considered typical for this crop and area. Some of these costs and practices may not be applicable to your situation nor used during every production year. Additional ones not indicated may be needed. Cultural practices for the production of wheat vary by grower and region. Variations can be significant. The practices and inputs used in this cost study serve only as a sample or guide. These 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, CLIMATE, AND ROTATION:

Land: Areas under dryland wheat production in Yolo County are located along the western foothills of the southern Sacramento Valley. This region contains the Dunnigan Hills and the foothill portions of the Capay Valley.

The site for the farm in this study is characterized by terrain of rolling hillsides and hilltops. The soil types predominate in dryland grain fields of the growers interviewed are Corning, Balcom, and Sehorn series, though other soils may also be found. Also characteristic of these farms is the large size. The growers interviewed had farms ranging from 900 to over 8,000 acres, some of which is owned and some leased. The farm for this study consists of 1,715 acres of land of which 150 acres are in actual conventionally tilled, dryland wheat production

Climate: Along with soil and topography, rainfall is another important factor affecting which crops can be successfully grown. In the past, rainfall for this region has varied from 6 inches to 40 inches. However, typical annual rainfall usually range from 14 inches to 20 inches, almost all of which comes in the winter months. Historically temperature have ranged from 9_ to 119_ F with the extremes, again, occurring in the winter and summer. Average winter temperature is 45° and the summer months average 81°. Growers plan their cropping system around these conditions in order to take advantage of the best possible growing environment for dryland wheat.

Rotation: Annual effective rainfall and when it occurs, early flush of weeds, and cultivation timing are probably the most important agronomic factors influencing crop rotation. Dryland wheat is very dependent on the amount of rain and how well it is stored in the soil profile. Low precipitation or weed infestations that use up stored water may cause growers to use a rotation pattern different from the conventional three year rotation; grain - pasture or resident vegetation - fallow.

Depending on the number of fallow years and how the fallow is utilized, i.e. grazing, little or no income generated for one or more years than typical. Rotation can have a beneficial effect on controlling weeds and other pests. Weeds that are not controlled by herbicides are usually managed by rotating into other crops, fallowing the land, and/or cultivation. Other commodities produced and uses for the same acreage in rotation with wheat might include lentils, safflower, vetch, peas, hay, and grazing for livestock.

2. RENTAL AGREEMENT:

Growers along the western foothills of Yolo County characteristically both own and lease land for dryland wheat production. Leases are charged as a per acre cash rent or a share rent on gross returns or yields. Cash rental for wheat ground typically runs around \$20 to 30 per acre. Share rents on the other hand can be a straight percentage of the gross returns or they can be on a sliding scale with the percentage dependent on the yield. Share rents might normally range between 20 to 30%. The land in this study is leased on a share rent basis at 20% of the gross return per acre.

3. GOVERNMENT PROGRAMS:

Several Federal conservation and crop support programs are used by growers of producing dryland wheat on highly erodible land (HEL). A complete discussion of each of the programs can not be accomplished in this study; it is only meant to briefly describe certain points pertinent to the wheat enterprise described here. Contact your local Agricultural Stabilization and Conservation Service (ASCS) and the Soil Conservation Service (SCS) for further information.

Both ASCS and SCS are Federal agencies which provide expertise for managing various crop and conservation programs at the local level. All of the programs are administered by the ASCS, which handles applications and dispenses moneys. Technical and educational help for the conservation programs, such as measuring crop residue, is performed by the SCS. Management of program activities in counties are mandated to farmer-elected county committees. They provide the overall direction and guidance for planning and coordinating their district's programs. County committees are also responsible for choosing which cultural practices are allowable for growers to use in order to maintain program compliance. These practices are drawn from national list of acceptable conservation practices.

Conservation Compliance Plan: All land classified as HEL is required to have and maintain a Conservation Compliance Plan (CCP). A CCP is not a separate program, but a guide for the grower to meet individual conservation program requirements on their HEL. CCPs are designed by the grower and approved by the county committee. It is intended to discourage crop and livestock production on unprotected, HEL. Failure to institute a CCP on designated HEL results in a grower's ineligibility to participate in farm support programs.

Agricultural Conservation Program: Growers wishing to produce crops on HEL can do so under the Agricultural Conservation Program (ACP). It is intended to provide cost sharing so that growers can use conservation measures that they might not perform without financial assistance. By providing financial support on a maximum of 75% of the program acreage for three to ten years, growers can transition to a production system that conserves soil and water. The program must be renewed each year. Livestock grazing is allowed under the ACP, but at least 70% plant residue must be left on the surface once the rainy season begins. Grazing lets growers utilize some of the wheat stubble and reduce feed expenditures for livestock.

Conservation Reserve Program: The Conservation Reserve Program (CRP) does not allow the designated land be used for crop production. It's purpose is to place HEL in reserve and to convert it to trees (non-crop) or other permanent vegetation in order to enhance wildlife and environmental resources. This means that growers are actually reducing productive crop acreage, though it is more likely marginally, if at all, profitable. In return the grower receives a payment for the acreage put in reserve. By removing this land from production growers are reducing their total energy requirements and cash expenditures and still receiving a return from the land. CRPs require that the land have either trees, permanent cover, or both established and maintained for 10 years. Noxious weeds must be controlled and no grazing is allowed. Early withdrawal from the program will result in severe penalties. Income from government conservation or crop support programs are not included in this study. Actual receipts from programs may vary, but growers should take into consideration additional returns in order to properly determine what their potential return might be.

4. PRODUCTION CULTURAL PRACTICES:

Cultural practices for the production of conventional tilled, dryland wheat in Yolo County vary somewhat from grower to grower. However, due to the small number of cultural operations used to produce wheat in this type of cropping system, differences between growers' practices are minor. These differences in cultural inputs can be influenced by seasonal pest pressures, soil water availability, and government regulations. The practices and inputs used in this cost study serve only as a guide and are based on actual grower practices.

Fertilization: Nitrogen is the primary nutrient needed by wheat to insure adequate yields. While wheat is responsive to nitrogen, timing the application with the proper fertilizer insures that the nitrogen will be available to the plant when needed. Ammonium phosphate (11-52-0) is drilled at 65 pounds of material per acre at planting. This is equivalent to 7.2 pounds of actual nitrogen and 33.8 pounds of P₂O₅ per acre. The nitrogen is supplemented with ammonium sulfate (21-0-0-24) application. In this study, 200 pounds per acre of 21-0-0-24 is surface applied by aircraft after planting.

Weed Control: Weed pressures vary each year, but those that currently cause problems for growers in this region consist of ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua* L.), ryegrass (*Lolium perenne* L. ssp. *perenne*), and zorro fescue. Control of weeds is extremely important under dryland conditions since competition with wheat can cause yields to be reduced. In conventionally tillage systems cultivation and herbicides are both used to manage weeds. Due to a lack of adequate herbicides and mechanical controls, ripgut brome continues to cause yield losses. However; by using discs or cultivators for this purpose soil moisture can be lost which can increase the fallow period in the rotation needed to store enough soil moisture for the next wheat crop.

From March through April plowing and disking are performed to prepare the seedbed and till under emerged weeds. The only herbicide application follows planting in January or February of the next year. A combination of Buctril- and Hoelon- for control of wild oats and various broadleaf plants is sprayed by aircraft. When ground can be reworked during winter or early spring, 2,4-D is often used to provide weed adequate control; This practice is not included in this study.

Planting: Planting is a crucial operation due to time constraints for planting dryland small grains. With usually very large acreage of wheat to plant in a limited amount of time, growers planting into tilled soil can use 75-160 horsepower tractors to pull a very wide drill. In this study a 30 foot wide drill is used to accomplish this task.

Farmers growing wheat under dryland conditions seed in the range of 90 to 110 pounds per acre. In this study a seeding rate of 100 pounds of wheat per acre is used.

The pesticides, rates, and cultural practices mentioned in this cost study are a few of those that 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 local county Agricultural Commissioner's office. Contact your local farm advisor for advice on production practices.

5. GROWER COMMENTS:

Growers interviewed expressed different views on the benefits and deficiencies of a summer fallow wheat production. The following section highlights anecdotal information that growers have observed in their experiences growing dryland wheat. One of the most emphasized points made by some of the growers was that this type of cropping system increased the amount of water that infiltrates the surface and is held in the soil profile. This has allowed a few of them to grow crops on an annual basis. The advantage to not leaving fields fallow for one to two years following a crop is that a return is realized annually. While yields are sometimes lower in an annual rotation system the fact of having income every year as opposed to every second or third year allows the growers to economically sustain their farms. In fact, farmers utilizing no-till system felt that the drought had no adverse affect on their yield. Growers that have moved to an annual rotation, alternating wheat with legumes or safflower, feel that the key to non tillage in dryland wheat is the rotation. These growers are still experimenting with different rotations that will fit their requirements for weed control and profitability.

Erosion control is another benefit of no-till wheat and is the primary reason for many government programs available to the growers. Some of the land farmed dryland in this region is classified as highly erodable by the SCS. Yet all of the farmers in this study said they had either none or very little erosion problems on this land. One grower said that most of their HEL ground was put into the CRP, so consequently has very little HEL in production.

Those growers that have the right conditions to utilize an annual cropping system have found better success in controlling weeds when they are able to rotate fields to a different crop each year rather than leave them fallow and control them with herbicides exclusively. Although rotation manages many weeds, herbicides are necessary for control. Growers expressed that substituting herbicides for discing or cultivation increased speed over the fields and reduced machinery and labor costs. The biggest problem that growers saw with the switch from mechanical to chemical control was the relatively few materials that will control certain weeds. No available herbicides can provide adequate control for zorro fescue which is a problem.

All of the growers participate in several government farm programs. These include acreage set asides, ACP, and CRP. Which programs were used depend on the situation of each of the growers. See the Government Programs section for a better description or contact your local ASCS or SCS office.

With as many advantages provided by a non tillage cropping system, growers still voiced certain disadvantages. Machinery has made non tillage systems possible, specifically the no-till drill. Yet much of this type of equipment is very expensive, requiring large capital investments. Certain growers also noted that the expense of no-till drills deters them from purchasing one especially with the no-till wheat system unproved to them. An option would be to rent or lease a no-till drill, but there are none available for rental if they wished to seed under a non-tillage system. Since no-till drills are designed to make an opening in untilled soil, a great amount of weight is required to force the coulters into the ground. Seeding with a fully loaded no-till drill on hillsides slows the time in which an acre can be planted and increases the size of tractor needed to pull it. When a limited planting window is available, slower planting time can increase a growers risk for failing to plant all of their acreage. However, it was the opinion of some that the no-till system has increased the organic matter content of their soils to the point where it is easier to work and will, thereby, lower fuel consumption by reducing time in the field.

6. HARVEST AND TRANSPORTATION:

Harvest: Growers in the Yolo County own their harvest equipment. This compliment of equipment consists of combines, bankout wagons, truck-tractors, and several grain trailers. The combines are specifically designed for hillside use. This design lets the grain platform (or header) and tires run at the same slope as the hill while the cab and grain bin remain upright. To harvest the grain in a timely manner, a 24 foot header are used. Bankout wagons are employed to haul grain from the combines to empty trailers along the roadside. Full trailers are hauled from the fields to either on farm storage facilities or to market were it is sold.

Transportation: While many growers own trucks and trailers, they usually have the grain hauled to storage by commercial carriers or the cooperative's trucks. The other option is to transport the wheat with their own equipment. In either situation growers bear the cost of transportation. Typical hauling charges might be \$8 per ton hauled from on-farm storage and \$10 per ton to haul grain from the field. Transportation rate used in this study is \$8 per ton for transporting from the field to storage.

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 custom charge would then be added.

7. YIELDS & RETURNS:

Yields: The yield for wheat grown in the Yolo County that is used in this study is 2,940 pounds per acre. Yield variations will occur due to the many environmental factors that can affect dryland farming.

Returns: An estimated price of a \$112.60 per ton or \$5.63 per hundredweight (Cwt) of grain is used to calculate returns. The return price is an average based on the previous five years for feed grain and is shown in Table 2.

This study does not include any income from any of the government programs. However; the profit/loss shown in Table 6 indicates how important federal farm programs are in dryland wheat production and require consideration by individual growers and landowners. A number of programs do exist that can provide support to growers farming on highly erodable land. These include the CRP and ACP. Growers should contact local ASCS and SCS offices to determine how best to use these services. Returns, as shown in Table 6, will vary and the yields and prices used in this cost study are, at best, estimates taking into consideration current situations.

8. RISK:

Risk is caused by various sources of uncertainty which include production, price, and financial. Examples of these are insect damage, a decrease in price, and increase in interest rates. The risks associated with producing wheat in the Yolo County under non tillage, dryland conditions should not be minimized. 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 wheat production. Additionally, some of the equipment required to plant, grow, and harvest wheat can be very capital intensive. Growers should consider all of the agronomic and economic risks before committing resources to wheat production in the Yolo County.

9. LABOR:

Hourly wages for workers is \$6.50 per hour for both machine and non-machine workers. This is based on wages paid by the growers in this study. Adding 34% for Workers Compensation, Social Security, Medicare, insurance, and other possible benefits gives the labor rates shown of \$8.71 per hour for both machine labor and non-machine labor. Some of the labor supplied to the farms may be from family members, but they are still paid the same rate in this study. Labor for operations involving machinery are 20% higher than the operation time given in Table 1 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and repair. Wages for management is not included as a cash cost. Any return above total costs is considered a return to management and risk.

10. 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: 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.

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 \$0.56 per acre.

Office Expense: Office and business expenses are estimated at \$20 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.

11. NON-CASH OVERHEAD:

Non-cash overhead is comprised of depreciation and interest charged on equipment and other investments. Although farm equipment on typical farm in the Yolo County is often purchased used, this study shows the current purchase price for new equipment adjusted to 50% of new value to indicate a mix of new and used equipment. Annual equipment and investments costs are shown in Tables 1, 2, and 4. They represent depreciation and opportunity cost 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 land, 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.

Average Value: The average value for land is equal to the purchase price because land does not depreciate. The interest rate used to calculate opportunity cost is estimated as a ten year average of the agricultural sector longrun rate of return to production assets from current income. 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.

12. 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, the following hourly charges are calculated first and shown in Table 8. 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 Tables 1 and 4 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 \$0.85 and \$1.17 per gallon, respectively.

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Table 1.

U.C. COOPERATIVE EXTENSION
 COSTS PER ACRE TO PRODUCE WHEAT
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY - 1994

Labor Rate: \$8.71/hr. machine labor
 \$8.71/hr. non-machine labor

Interest Rate: 7.89%
 Yield per Acre: 18.91 Cwt

Operation	Operation Time (Hrs/A)	Labor Cost	Fuel, Lube & Repairs	Material Cost	Cash and Labor Costs per Acre Custom/ Rent	Total Cost	Your Cost
Cultural:							
Plow Fallow Ground	0.40	4.18	9.41	0.00	0.00	13.59	
Disc Field - 2X	0.40	4.18	9.51	0.00	0.00	13.69	
Plant	0.09	0.94	3.18	20.71	0.00	24.83	
Apply Fertilizer	0.00	0.00	0.00	13.80	7.70	21.50	
Apply Herbicide	0.00	0.00	0.00	22.90	7.50	30.40	
Pickup Truck Use	0.17	1.74	1.23	0.00	0.00	2.97	
TOTAL CULTURAL COSTS	1.06	11.04	23.32	57.42	15.20	106.98	
Harvest:							
Combine Grain	0.29	2.99	5.03	0.00	0.00	8.02	
Haul To Market	0.00	0.00	0.00	0.00	11.76	11.76	
TOTAL HARVEST COSTS	0.29	2.99	5.03	0.00	11.76	19.78	
Interest on operating capital @ 7.89%							6.62
TOTAL OPERATING COSTS/ACRE		14.03	28.35	57.42	26.96	133.37	
TOTAL OPERATING COSTS/CWT							4.54
CASH OVERHEAD:							
Share Rent @ 20% Of Gross Returns							32.93
Office Expense							20.00
Liability Insurance							0.56
Property Taxes							2.05
Property Insurance							1.46
Investment Repairs							6.17
TOTAL CASH OVERHEAD COSTS							63.16
TOTAL CASH COSTS/ACRE							196.53
TOTAL CASH COSTS/CWT							6.68

U.C. COOPERATIVE EXTENSION
 COSTS PER ACRE TO PRODUCE WHEAT
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY - 1994
 Table 1. Continued

 NON-CASH OVERHEAD:

	Per producing Acre	----- Depreciation -----	Annual Cost ----- Interest @ 3.72%	
Investment				
-----	-----	-----	-----	
Shop Buildings	42.58	2.13	0.79	2.92
Shop Tools	6.41	0.58	0.13	0.71
Fuel Tanks	21.31	1.07	0.40	1.46
Truck Tractor	46.65	8.40	0.95	9.35
Trailers - 2 Each	23.32	4.20	0.48	4.68
Trailer - Lowbed	5.83	0.35	0.12	0.47
Storage Shed	14.38	0.65	0.29	0.94
Seed Truck	10.01	0.60	0.20	0.81
Equipment Shed	9.07	0.41	0.19	0.59
Fuel Wagon	2.46	0.11	0.05	0.16
Carryall	8.07	0.48	0.17	0.65
Equipment	185.97	14.39	3.84	18.24
	-----	-----	-----	-----
TOTAL NON-CASH OVERHEAD COSTS	376.07	33.36	7.61	40.97

TOTAL COSTS/ACRE				237.51
TOTAL COSTS/CWT				8.08
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Table 2.

U.C. COOPERATIVE EXTENSION
 COSTS AND RETURNS PER ACRE TO PRODUCE WHEAT
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY -1994

	Quantity/Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Wheat	29.40	Cwt	5.60	164.64	
TOTAL GROSS RETURNS FOR WHEAT CONV				164.64	
OPERATING COSTS					
Seed:					
Wheat Seed - Serra	100.00	Lb	0.12	12.00	
Fertilizer:					
11-52-0	65.00	Lb	0.134	8.71	
21-0-0-24	200.00	Lb	0.069	13.80	
Custom:					
Air Application - Fert.	2.00	Cwt	3.85	7.70	
Air Application - Herb.	1.00	Acre	7.50	7.50	
Market Hauling	1.47	Ton	8.00	11.76	
Herbicide:					
Buctril	1.25	Pint	9.74	12.18	
Hoelon 3 EC	1.00	Pint	10.73	10.73	
Labor (machine)	1.61	hrs	8.71	14.03	
Labor (non-machine)	0.00	hrs	0.00	0.00	
Fuel - Gas	0.62	gal	1.17	0.73	
Fuel - Diesel	13.28	gal	0.85	11.29	
Lube				1.80	
Machinery repair				14.53	
Interest on operating capital @	7.89%			6.62	
TOTAL OPERATING COSTS/ACRE				133.37	
TOTAL OPERATING COSTS/CWT				4.54	
NET RETURNS ABOVE OPERATING COSTS				31.27	
CASH OVERHEAD COSTS:					
Share Rent @ 20% Of Gross Returns				32.93	
Office Expense				20.00	
Liability Insurance				0.56	
Property Taxes				2.05	
Property Insurance				1.46	
Investment Repairs				6.17	
TOTAL CASH OVERHEAD COSTS/ACRE				63.16	
TOTAL CASH COSTS/ACRE				196.53	
TOTAL CASH COSTS/CWT				6.68	

Table 3

U.C. COOPERATIVE EXTENSION
 MONTHLY CASH COSTS PER ACRE TO PRODUCE WHEAT
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY - 1994

Beginning MAR 93	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	TOTAL	
Ending JUL 94	93	93	93	93	93	93	93	93	93	93	94	94	94	94	94	94	94		
Cultural:																			
Plow Fallow Ground	13.59																	13.59	
Disc Field - 2X			13.69															13.69	
Plant									24.83									24.83	
Apply Fertilizer									21.50									21.50	
Apply Herbicide											30.41							30.41	
Pickup Truck Use	<u>0.19</u>	<u>2.97</u>																	
TOTAL CULTURAL COSTS	13.77	0.19	13.87	0.19	0.19	0.19	0.19	0.19	46.51	0.19	30.59	0.19	0.19	0.19	0.19	0.19	0.19	106.98	
Harvest:																			
Combine Grain																	8.02	8.02	
Haul To Market																	<u>11.76</u>	<u>11.76</u>	
TOTAL HARVEST COSTS																	19.78	19.78	
Interest on oper. capital	0.09	0.09	0.18	0.18	0.19	0.19	0.19	0.19	0.49	0.50	0.70	0.70	0.70	0.70	0.70	0.83		6.62	
TOTAL OPERATING COSTS/ACRE	13.86	0.28	14.06	0.37	0.37	0.37	0.37	0.37	47.01	0.68	31.29	0.88	0.89	0.89	0.89	20.80		133.37	
TOTAL OPERATING COSTS/CWT	0.47	0.01	0.48	0.01	0.01	0.01	0.01	0.01	1.60	0.02	1.06	0.03	0.03	0.03	0.03	0.71		4.54	
OVERHEAD:																			
Share Rent @ 20%Of Gross Returns																		32.93	32.93
Office Expense	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	20.00	
Liability Insurance											0.56							0.56	
Property Taxes											2.05							2.05	
Property Insurance					0.73						0.73							1.46	
Investment Repairs	<u>0.51</u>	<u>6.17</u>																	
TOTAL CASH OVERHEAD COSTS	1.76	1.76	1.76	1.76	2.49	1.76	1.76	1.76	1.76	1.76	5.10	1.76	1.25	1.25	1.25	1.25	32.93	63.16	
TOTAL CASH COSTS/ACRE	15.63	2.04	15.82	2.13	2.86	2.14	2.14	2.14	48.77	2.45	36.39	2.65	2.14	2.14	2.14	22.05	32.93	196.53	
TOTAL CASH COSTS/CWT	0.53	0.07	0.54	0.07	0.10	0.07	0.07	0.07	1.66	0.08	1.24	0.09	0.07	0.07	0.07	0.75	1.12	6.68	

Table 4.

U.C. COOPERATIVE EXTENSION
 WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY - 1994

ANNUAL EQUIPMENT COSTS

=====								
Yr	Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Total

94	205 HP Crawler	149906	12	11242.90	3067.08	587.86	824.49	15722.33
94	Bankout Wagon - SP ¹	63523	10	5717.10	1299.68	249.10	349.38	7615.26
94	Combine W/24' Head	117975	10	10017.70	2525.38	484.03	678.87	13705.98
94	Disc - Offset 21'	16988	15	1019.27	347.58	66.62	93.44	1526.91
94	Drill - 39'	43440	10	3909.60	888.78	170.35	238.92	5207.65
94	Pickup Truck - 1/2 Ton	17240	7	2216.57	352.73	67.61	94.82	2731.73
94	Plow - 8 Bottom	15812	15	948.73	323.51	62.01	86.97	1421.22
94	Ringroller - 21'	5262	15	315.73	107.66	20.63	28.94	472.96

TOTAL		430146		35387.60	8912.40	1708.21	2395.83	48404.04
=====								
45% of New Cost *		193566		15924.42	4010.58	768.69	1078.12	21781.82

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

¹ SP = self propelled

ANNUAL INVESTMENT COSTS

=====									
Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Repairs	Total	

INVESTMENT									
Carryall	13835	15	830.07	283.07	54.26	76.09	461.00	1704.49	
Equipment Shed	15551	20	699.80	318.17	60.98	85.53	311.00	1475.48	
Fuel Tanks	36545	20	1827.25	679.74	130.28	182.72	50.00	2869.99	
Fuel Wagon	4226	20	190.15	86.47	16.57	23.24	158.00	474.43	
Seed Truck	17160	15	1029.60	351.09	67.29	94.38	858.00	2400.36	
Shop Buildings	73032	20	3651.60	1358.40	260.36	365.16	75.00	5710.52	
Shop Tools	11000	10	990.00	225.06	43.14	60.50	100.00	1418.70	
Storage Shed	24668	20	1109.95	504.75	96.74	135.69	493.00	2340.13	
Trailer - Lowbed	10000	15	600.00	204.60	39.21	55.00	67.00	965.81	
Trailers - 2 Each	40000	5	7200.00	818.40	156.86	220.00	0.00	8395.26	
Truck Tractor	80000	5	14400.00	1636.80	313.72	440.00	8000.00	24790.52	

TOTAL INVESTMENT	326017		32528.42	6466.55	1239.41	1738.31	10573.00	52545.69	
=====									

U.C. COOPERATIVE EXTENSION
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY - 1994
 Table 4. Continued

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insuranc	1715.00	Acre	0.56	960.40
Office Expense	1715.00	Acre	20.00	34300.00
Share Rent @ 20% Of Gross Returns	150.00	Acre	32.93	4939.50

Table 5.

U.C. COOPERATIVE EXTENSION
 HOURLY EQUIPMENT COSTS
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY - 1994

Yr Description	Actual Hours Used	COSTS PER HOUR							Total Oper.	Total Costs/Hr.
		-Non-Cash Over- depre- ciation	Over- Interest	- Cash Overhead - Insur- ance	Taxes	Repairs	Operating Fuel & Lube			
94 205 HP Crawler	999.8	5.06	1.38	0.26	0.37	5.62	11.63	17.25	24.33	
94 Bankout Wagon - SP ¹	199.4	12.90	2.93	0.56	0.79	6.34	1.83	8.17	25.35	
94 Combine W/24' Header	199.6	22.59	5.69	1.09	1.53	16.08	8.51	24.59	55.49	
94 Disc - Offset 21'	166.0	2.76	0.94	0.18	0.25	3.66	0.00	3.66	7.80	
94 Drill - 39'	119.5	14.72	3.35	0.64	0.90	16.34	0.00	16.34	35.95	
94 Pickup Truck - 1/2 Ton	284.9	3.50	0.56	0.11	0.15	2.35	5.05	7.40	11.71	
94 Plow - 8 Bottom	166.0	2.57	0.88	0.17	0.24	3.41	0.00	3.41	7.26	
94 Ringroller - 21'	166.0	0.86	0.29	0.06	0.08	1.13	0.00	1.13	2.42	

¹ SP = self propelled

Table 6.

U.C. COOPERATIVE EXTENSION
RANGING ANALYSIS
DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
YOLO COUNTY - 1994

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE CONVENTIONALLY TILLED WHEAT

	YIELD (CWT/ACRE)						
	10	15	20	25	30	35	40

OPERATING COSTS/ACRE:							
Cultural Cost	107	107	107	107	107	107	107
Harvest Cost	7	10	13	17	20	24	27
Interest on operating capital	7	7	7	7	7	7	7
TOTAL OPERATING COSTS/ACRE	120	124	127	130	134	137	141
TOTAL OPERATING COSTS/CWT	12.02	8.24	6.35	5.22	4.46	3.92	3.51
CASH OVERHEAD COSTS/ACRE	63	63	63	63	63	63	63
TOTAL CASH COSTS/ACRE	183	187	190	193	197	200	204
TOTAL CASH COSTS/CWT	18.30	12.43	9.50	7.74	6.57	5.73	5.10
NON-CASH OVERHEAD COSTS/ACRE	37	38	39	40	41	42	43
TOTAL COSTS/ACRE	220	225	229	234	238	242	247
TOTAL COSTS/CWT	22.00	14.97	11.45	9.34	7.93	6.93	6.17

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR CONVENTIONALLY TILLED WHEAT

PRICE (DOLLARS PER CWT)	YIELD (CWT/ACRE)						
	10	15	20	25	30	35	40
3.50	-85	-71	-57	-43	-29	-15	-1
4.00	-80	-64	-47	-30	-14	3	19
4.50	-75	-56	-37	-18	1	20	39
5.00	-70	-49	-27	-5	16	38	59
5.50	-65	-41	-17	7	31	55	79
6.00	-60	-34	-7	20	46	73	99
6.50	-55	-26	3	32	61	90	119

U.C. COOPERATIVE EXTENSION
 DRYLAND & CONVENTIONAL TILLAGE CONDITIONS
 YOLO COUNTY - 1994
 Table 6. Continued

NET RETURNS PER ACRE ABOVE CASH COSTS FOR CONVENTIONALLY TILLED WHEAT

PRICE (DOLLARS PER CWT)	YIELD (CWT/ACRE)						
	10	15	20	25	30	35	40
3.50	-148	-134	-120	-106	-92	-78	-64
4.00	-143	-127	-110	-93	-77	-60	-44
4.50	-138	-119	-100	-81	-62	-43	-24
5.00	-133	-112	-90	-68	-47	-25	-4
5.50	-128	-104	-80	-56	-32	-8	16
6.00	-123	-97	-70	-43	-17	10	36
6.50	-118	-89	-60	-31	-2	27	56

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR CONVENTIONALLY TILLED WHEAT

PRICE (DOLLARS PER CWT)	YIELD (CWT/ACRE)						
	10	15	20	25	30	35	40
3.50	-185	-172	-159	-146	-133	-120	-107
4.00	-180	-165	-149	-134	-118	-102	-87
4.50	-175	-157	-139	-121	-103	-85	-67
5.00	-170	-150	-129	-109	-88	-67	-47
5.50	-165	-142	-119	-96	-73	-50	-27
6.00	-160	-135	-109	-84	-58	-32	-7
6.50	-155	-127	-99	-71	-43	-15	13