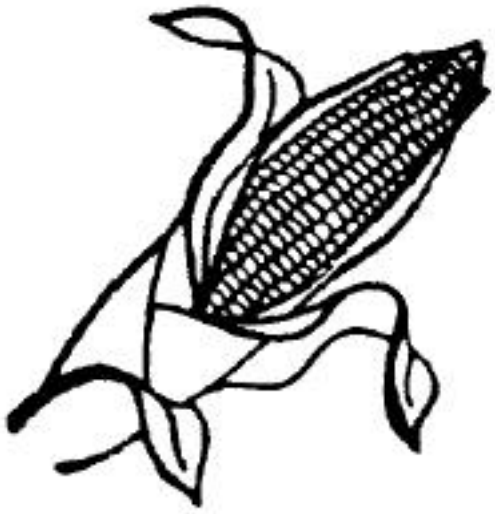
UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2000

SAMPLE COSTS TO PRODUCE

FIELD
CORN



SACRAMENTO VALLEY - YOLO COUNTY

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UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

SAMPLE COSTS TO PRODUCE FIELD CORN
Sacramento Valley - Yolo County - 2000

INTRODUCTION

The sample costs to produce field corn in the Sacramento Valley - Yolo County are presented in this study. The study is intended as a guide only, and can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans. Practices described are based on those production procedures considered typical for this crop and area. Sample costs for labor, materials, equipment and custom services are based on current figures. Some costs and practices detailed in this study may not be applicable to your situation. A blank column, "*Your Costs*", is provided to enter your actual costs on Tables 1 and 2.

The hypothetical farm operation, production practices, overhead, and calculations are described under the assumptions. For additional information or explanation of calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, California, (530) 752-3589 or the Yolo County UC Cooperative Extension office.

CONTENTS

Sample Cost of Production Studies for many commodities are available and can be requested through the Department of Agricultural Economics, UC Davis, (530) 752-1515. Current studies, those produced during the last five years, can be downloaded from the department website www.agecon.ucdavis.edu or obtained from selected county Cooperative Extension offices.

ASSUMPTIONS

The following assumptions pertain to sample costs to produce field corn in the Sacramento Valley - 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 practices listed may not be needed nor used during every production year. Additional ones not indicated may be needed. Cultural practices for the production of field corn vary by grower and region, and variations can be significant. The practices and inputs used in the cost study serve only as a sample or guide. The costs shown are 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**.

Land. This report is based on a 2,900 acre field and row crop farm. Field corn, is planted on 600 acres and the other 2,300 acres, planted in rotation with the corn, may be processing tomatoes, alfalfa hay, safflower, sunflower, dry beans and/or wheat. Typically, a grower with this amount of corn acreage will have several non-adjacent fields. A charge for equipment moving and set-up is shown in the tables under cultural costs. The land rented includes developed wells and irrigation system. All costs associated with land and the irrigation system are incurred by the landowner. The grower also owns land, a shop and an equipment yard.

Cultural Practices and Material Inputs

Land Preparation. Primary tillage which includes laser leveling, discing, rolling, subsoiling, land leveling, and listing beds is in October of the year preceding planting. All operations are done on 100% of the acres unless noted. To reduce annual expenses, only 7% of the acreage is laser leveled each year. Subsoiling to a depth of 22 to 24 inches and discing are done on 50% (300 acres) of the corn acreage. Ground is smoothed in two passes with a triplane. Beds on five-foot centers are made with a six-row lister, and shaped with a bed-shaper cultivator.

Stand Establishment. Field corn is generally planted from late March through April. In this study 34,000 seeds per acre are planted in April.

Fertilization. Nitrogen is the primary nutrient applied to corn throughout the growing season. At planting 151 pounds (15 gallons) of ammonium phosphate (10-34-0) plus one quart of chelated zinc is applied. This is equivalent to 15 pounds of actual nitrogen and 54 pounds of phosphorous (P_2O_5) per acre. Aqua Ammonia (20-0-0) is applied at a rate of 225 pounds (132 gallons) of N per acre. Potassium (K_2O) fertilizer at 40 pounds per acre, though not applied in this study, is generally recommended in the Delta area of Yolo County.

Irrigation. In this study, water is calculated to cost $18.83 per acre foot and is a combination of 1/2 well water and 1/2 canal delivered surface water. The irrigation costs shown in Tables 1, 2, and 3 include water, pumping, and labor charges. A total of 3 acre-feet (36 acre inch) is applied to the crop in this study. Six irrigations are applied bi-weekly during May, June, and July.

Pest Management. The pesticides and rates mentioned in this cost study are listed in *UC Integrated Pest Management Guidelines, Corn.* For more information on pest identification, monitoring, and management visit the UC IPM website at www.ipm.ucdavis.edu. 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.

Weeds. A mix of materials and cultural practices are used to manage weeds in corn. Beginning in February a contact herbicide, Roundup–, is applied by aircraft to the fallow beds to control early season weeds. Weedar 64â Herbicide to control broadleaf weeds is applied in May on one-half of the corn acreage by the grower using a tractor mounted sprayer. Mechanical cultivation using a rolling cultivator is done twice, once in March and once in May.

Insects and Diseases. Corn has many insect and mite pests that can cause economic damage during any given season. In this study cutworms (*Agrotis spp., Feltia spp.,* and *Peridroma spp*.) are assumed to be above the treatment threshold on 20% of the acreage. Sevin– bait is applied to control cutworms on the infested acres. A tractor mounted applicator is used to apply the bait in May. Mites (*Tetranychus spp*.) can be a problem late in the season, and may be controlled with an application of Comite– in June. Mite treatment is not included in this study.

Harvest. It is assumed that the grower owns a harvest combine and bankout wagon. The combine attaches to a 30-inch row, eight-row header. The corn is dumped from the combine directly into the bankout wagon which transports the grain to semi-truck bulk grain trailers for transport to the buyer. Transportation from the field to the warehouse is paid by the buyer.

Equipment for harvest operations are shown in investment costs on Table 4, and labor, fuel, repairs, depreciation, and operating interest, are calculated as harvest costs in Tables 1 and 3. If a grower contracts his harvest operation, all harvesting equipment should be subtracted from investment costs in Table 4. Related costs should be subtracted from harvest costs in Tables 1 and 3 and a custom charge added.

Growers may choose to own harvesting equipment, purchased either new or used, or hire a custom harvester to perform the harvest. Many factors are important in deciding which harvesting option a grower uses. These considerations and appropriate method of analysis are discussed in *"Acquiring Alfalfa Hay Harvest Equipment: A Financial Analysis of Alternatives"*.

Yields. The range of yields for Yolo County over the previous ten years is 4.49 to 5.21 tons of corn per acre; the average corn yield over that same period is 4.72. The average yield used in this study is for the last five years adjusted upward to 4.85 ton per acre to reflect best management practices.

Returns. Average prices ranged from $85.79 to $128.10 per ton over the last 10 years. Return prices to growers over the last 10 years are shown in Table A. The average return of $108.21 for the last five years is used in this study.

Table A. Average Yield and Price for Field Corn, Yolo County, 1990 - 1999 [1/]

Year	Tons Per Acre	$ Per Ton
1999	5.12	85.79
1998	4.99	93.48
1997	5.07	107.18
1996	4.49	126.49
1995	4.52	128.10
1994	5.21	97.60
1993	5.21	93.91
1992	4.90	100.60
1991	4.59	109.50
1990	4.87	102.00

[1/] Source: Agricultural Commissioner, Yolo County Crop Reports, 1990 - 1999

Labor. Basic hourly wages for workers are $8.50 and $6.25 per hour for machine operators and non-machine (irrigators and manual laborers) workers, respectively. Adding 34% for the employer's share of federal and state payroll taxes, insurance and other benefits raises the total labor costs to $11.39 per hour for machine operators and $8.38 per hour for non-machine labor. The labor for operations involving machinery is 20% higher than the operation time to account for the additional time involved in equipment set up, moving, maintenance and repair.

Risk. Risks associated with field corn production are not assigned a production cost. While this study makes an 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 corn production. Because of the risk involved, growers should consider all of the agronomic and economic risks before committing resources to corn production in Yolo County.

Overhead Costs

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, share rent, supervisor salaries, and investment 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 10.71% per year. A nominal interest rate is the typical 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 0.723% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs $1,049 for the entire farm or $0.36 per acre.

Office Expense: Office and business expenses are estimated at $15 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.

Share Rent. Leasing practices and rental rates for agricultural property are continually being adjusted due to changing production and market economics, land values, and relative bargaining positions of the landlord and tenant. Land used for corn production in Yolo County is commonly rented on a tenant-landowner basis with the landowner receiving between 18-25% of the gross income. In this study the landowner receives 18% of the gross crop receipts from the sale of 4.85 tons of corn less a 2% dockage. The share rent calculated using a $108.21 per ton return price provides the landowner $92.58 per acre. The tenant pays all cash costs to produce the crop except for the landowner's share of grain drying costs if required.

Salary. Supervisor salaries, including benefits, are $100,000 per year for two supervisors and are allocated amongst the farm's other crops on a gross returns basis. In this study it is assumed that field corn provides 14% of the farm's gross returns. Any returns above total costs are considered returns to investment.

Non-cash Overhead. Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments. Although farm equipment used for field corn may be purchased new or used, this study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Annual ownership costs (Equipment and Investments) are shown in Tables 1, 2, 3, and 5. They represent the capital recovery cost for investments on an annual per acre basis.

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). Put another way, it is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account. The calculation for the annual capital recovery costs is as follows:

$$\left(\begin{array}{c}\text{Purchase}\\ \text{Price}\end{array} - \begin{array}{c}\text{Salvage}\\ \text{Value}\end{array}\right) \times \left(\begin{array}{c}\text{Capital}\\ \text{Recovery}\\ \text{Factor}\end{array}\right) + \left(\begin{array}{c}\text{Salvage}\\ \text{Value}\end{array} \times \begin{array}{c}\text{Interest}\\ \text{Rate}\end{array}\right)$$

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (e.g., tractors and implements) the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wearout life, as given by ASAE by the annual hours of use in this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is equal to the purchase price because land

does not depreciate. The purchase price and salvage value for certain equipment and investments are shown in Table 5.

Capital Recovery Factor. Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. It is the function of the interest rate and years of life of the equipment.

Interest Rate. The interest rate of 7.08% used to calculate capital recovery cost is the United States Department of Agriculture-Economic Reporting Service's (USDA-ERS) ten year average of California's agricultural sector long run 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. In other words, the next best alternative use for these resources is in another agricultural enterprise.

Equipment 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 repairs, fuel, and lubrication. The fuel, lube, 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 selected operation by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel and down time.

Repairs, Fuel and Lube. 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 fuel type. Prices for on-farm delivery of diesel and gasoline are $1.26 and $1.49 per gallon, respectively.

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

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Table 1. UC COOPERATIVE EXTENSION
COSTS PER ACRE TO PRODUCE FIELD CORN
SACRAMENTO VALLEY - YOLO COUNTY 2000

	Operation	Cash and Labor Costs per acre					
Operation	Time (Hrs/A)	Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:							
Disc Field - 50% acres	0.04	1	2	0	0	3	
Subsoil - 50% acreage	0.10	1	5	0	0	7	
Land Plane Field - 2X	0.28	4	7	0	0	11	
List Beds	0.15	2	3	0	0	5	
Apply Fallow Herbicide	0.00	0	0	8	5	13	
Cultivate Beds	0.20	3	2	0	0	5	
Plant Corn & Apply Fertilizer	0.16	2	2	62	0	67	
Break Crust - 10% acres	0.02	0	0	0	0	0	
Open Ditch - 2X	0.10	1	2	0	0	4	
Irrigate - 6X	7.50	63	0	57	0	119	
Close Ditch - 2X	0.10	1	1	0	0	2	
Apply Insecticide - Cutworms 20% acres	0.03	0	0	1	0	2	
Furrow Out & Sidedress Fertilizer	0.29	4	5	53	3	64	
Apply Herbicide - 50% acres	0.08	1	1	2	0	4	
Pickup Truck Use	0.13	4	1	0	0	5	
ATV Use	0.10	1	0	0	0	2	
Equipment Moving & Set Up	1.52	13	0	0	0	13	
TOTAL CULTURAL COSTS	10.81	102	33	183	8	325	
Harvest:							
Combine	0.22	3	8	0	0	11	
Bankout	0.22	3	2	0	0	5	
TOTAL HARVEST COSTS	0.44	6	10	0	0	16	
Postharvest:							
Disc Stubble	0.22	3	10	0	0	13	
Chop Stubble	0.25	3	5	0	0	9	
TOTAL POSTHARVEST COSTS	0.47	6	15	0	0	22	
Interest on operating capital @ 10.71%						17	
TOTAL OPERATING COSTS/ACRE		114	59	183	8	380	
CASH OVERHEAD:							
Liability Insurance						0	
Office Expense						15	
Share Rent @ 18% gross income						93	
Field Sanitation						1	
Supervisors Salary						23	
Property Taxes						3	
Property Insurance						2	
Investment Repairs						2	
TOTAL CASH OVERHEAD COSTS						139	
TOTAL CASH COSTS/ACRE						519	

NON-CASH OVERHEAD Investment	Per producing Acre	Annual Cost Capital Recovery	
Fuel Tanks & Pumps	7	1	1
Fuel Wagon	1	0	0
Truck Tractor	15	2	2
Trailer - Lowbed	3	0	0
Trailer - Pipe	1	0	0
Shop Building	22	2	2
Shop Tools	5	0	0
Storage Building	9	1	1
Closed Mix System	1	0	0
Pipe - Main Line	20	3	3
Siphon Tubes	3	0	0
Tool Carrier	5	1	1
Portable Pump	7	1	1
Forklift - 4 Ton	3	0	0
Equipment	398	49	49
TOTAL NON-CASH OVERHEAD COSTS	500	60	60
TOTAL COSTS/ACRE			579

Table 2 UC COOPERATIVE EXTENSION
COSTS AND RETURNS PER ACRE TO PRODUCE FIELD CORN
SACRAMENTO VALLEY - YOLO COUNTY 2000

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Corn	4.85	ton	108.21	525	
OPERATING COSTS					
Herbicide:					
Roundupâ Ultra	0.19	gal	43.18	8	
Weedarâ 64	1.00	pint	1.81	2	
Custom:					
Air App Spray 5gal	1.00	acre	5.00	5	
Seed:					
Seed Corn	34.00	thou	1.21	41	
Fertilizer:					
10-34-0	151.00	lb	0.14	21	
Zinc Chelate 6%	2.00	pint	0.07	0	
20-0-0 (Aqua)	225.00	lb N	0.24	53	
Irrigation:					
Water	36.00	acin	1.57	57	
Insecticide:					
Sevinâ 5 Pellets	2.00	lb	0.70	1	
Rent:					
Rig to Inject Aqua	1.00	acre	2.50	3	
Labor (machine)	3.40	hrs	11.39	39	
Labor (non-machine)	9.02	hrs	8.38	76	
Fuel - Gas	0.77	gal	1.49	1	
Fuel - Diesel	26.20	gal	1.26	33	
Lube				5	
Machinery repair				19	
Interest on operating capital @ 10.71%				17	
TOTAL OPERATING COSTS/ACRE				380	
NET RETURNS ABOVE OPERATING COSTS				145	
CASH OVERHEAD COSTS:					
Liability Insurance				0	
Office Expense				15	
Share Rent @ 18% gross income				93	
Field Sanitation				1	
Supervisors Salary				23	
Property Taxes				3	
Property Insurance				2	
Investment Repairs				2	
TOTAL CASH OVERHEAD COSTS/ACRE				139	
TOTAL CASH COSTS/ACRE				519	

NON-CASH OVERHEAD COSTS (Capital Recovery)	
Fuel Tanks & Pumps	1
Fuel Wagon	0
Truck Tractor	2
Trailer - Lowbed	0
Trailer - Pipe	0
Shop Building	2
Shop Tools	0
Storage Building	1
Closed Mix System	0
Pipe - Main Line	3
Siphon Tubes	0
Tool Carrier	1
Portable Pump	1
Forklift - 4 Ton	0
Equipment	49
TOTAL NON-CASH OVERHEAD COSTS/ACRE	60
TOTAL COSTS/ACRE	579
NET RETURNS ABOVE TOTAL COSTS	-54

Table 3

U.C. COOPERATIVE EXTENSION
MONTHLY CASH COSTS
SACRAMENTO VALLEY – YOLO COUNTY 2000

Beginning OCT 99 Ending SEP 00	OCT 99	NOV 99	DEC 99	JAN 00	FEB 00	MAR 00	APR 00	MAY 00	JUN 00	JUL 00	AUG 00	SEP 00	TOTAL
Cultural:													
Disc Field - 50% acres	3												3
Subsoil - 50% of Acreage	7												7
Land Plane Field - 2X	11												11
List Beds	5												5
Apply Fallow Herbicide					13								13
Cultivate Beds						5							5
Plant Corn & Apply Fertilizer							67						67
Break Crust - 10% acre							0						0
Open Ditch - 2X								4					4
Irrigate - 6X								40	40	40			119
Close Ditch - 2X								1			1		2
Apply Insecticide - Cutworms								2					2
Furrow & Sidedress Fertilizer								64					64
Apply Herbicide - 50% acres								4					4
Pickup Truck Use	0	0	0	0	0	0	0	0	0	0	0	0	5
ATV Use	0	0	0	0	0	0	0	0	0	0	0	0	2
Equipment Moving & Set Up	1	1	1	1	1	1	1	1	1	1	1	1	13
TOTAL CULTURAL COSTS	27	2	2	2	15	7	69	116	41	41	3	2	325
Harvest:													
Combine												11	11
Bankout												5	5
TOTAL HARVEST COSTS												16	16
Postharvest:													
Chop Stubble												9	9
Disc Stubble												13	13
TOTAL POSTHARVEST COSTS												22	22
Interest on operating capital	0	0	0	0	0	0	1	2	3	3	3	3	17
TOTAL OPERATING COSTS/ACRE	27	2	2	2	15	7	70	119	44	44	6	43	380
OVERHEAD:													
Liability Insurance				0									0
Office Expense	1	1	1	1	1	1	1	1	1	1	1	1	15
Share Rent @ 18% gross												93	93
Field Sanitation	0	0	0	0	0	0	0	0	0	0	0	0	1
Supervisor Salary	2	2	2	2	2	2	2	2	2	2	2	2	23
Property Taxes				1						1			3
Property Insurance				1						1			2
Investment Repairs	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL CASH OVERHEAD COSTS	3	3	3	6	3	3	3	3	3	6	3	96	139
TOTAL CASH COSTS/ACRE	30	5	5	8	19	10	73	122	47	50	9	139	519

Table 4 UC COOOPERATIVE EXTENSION

WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS

SACRAMENTO VALLEY - YOLO COUNTY 2000

ANNUAL EQUIPMENT COSTS

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
00	135 HP 2WD Tractor	68,688	10	6,869	9,321	273	378	9,971
00	165 HP 2WD Tractor	91,677	10	9,168	12,440	365	504	13,309
00	200 HP Crawler	156,000	10	46,080	18,970	731	1,010	20,711
00	340HP 75E Track	171,600	10	50,688	20,867	804	1,111	22,783
00	425Hp 9400T Track	199,889	10	59,044	24,308	936	1,295	26,538
00	90 HP 2WD Tractor	45,953	10	4,595	6,236	183	253	6,671
00	ATV	3,861	5	1,730	643	20	28	692
00	Bait Applicator	2,235	12	310	265	9	13	287
00	Bankout Wagon 30 T	11,127	15	1,113	1,184	44	61	1,289
00	Combine-No Header	157,336	15	16,112	16,725	627	867	18,219
00	Corn Header, 8 Row	35,640	10	6,723	4,608	153	212	4,973
00	Cult - Rolling #1	6,734	15	673	716	27	37	780
00	Cultivator - 6 Row	8,580	12	1,188	1,019	35	49	1,103
00	Disc - Stubble 18'	45,045	10	7,966	5,863	192	265	6,319
00	Disc Finish 25'	40,433	12	5,600	4,801	166	230	5,197
00	Ditcher - V	7,800	12	1,080	926	32	44	1,003
00	Lister - 6 Row	1,565	12	217	186	6	9	201
00	Mower - Flail 15'	12,749	10	2,255	1,659	54	75	1,789
00	Pickup Truck 1/2 T	13,887	5	1,389	3,153	55	76	3,285
00	Pickup Truck 3/4 T	17,240	5	1,724	3,914	69	95	4,078
00	Planter - 6 Row	15,015	10	2,655	1,954	64	88	2,107
00	Ringroller - 32'	7,132	12	988	847	29	41	917
00	Saddle Tank 300Gal	2,145	10	379	279	9	13	301
00	Saddle Tank300G #2	2,145	10	379	279	9	13	301
00	Scraper - Drag 10'	2,581	18	172	253	10	14	277
00	Sprayer System	3,630	10	642	472	15	21	509
00	Subsoiler16'9shank	32,175	10	5,690	4,188	137	189	4,514
00	Triplane - 16'	20,109	12	2,785	2,388	83	114	2,585
TOTAL		1,182,971		238,214	148,465	5,138	7,106	160,709
60% of New Cost*		709,783		142,928	89,079	3,083	4,264	96,425

*Used to reflect a mix of new and used equipment

UC COOPERATIVE EXTENSION
Table 4 continued

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead Insur-ance	Taxes	Repairs	Total
INVESTMENT								
Closed Mix System	3,987	10	399	541	16	22	200	779
Forklift - 4 Ton	9,116	10	912	1,237	36	50	456	1,779
Fuel Tanks & Pumps	19,835	20	1,984	1,836	79	109	397	2,421
Fuel Wagon	1,808	10	181	245	7	10	52	314
Pipe - Main Line	57,024	10	5,700	7,738	227	314	358	8,636
Portable Pump	19,554	10	1,955	2,653	78	108	978	3,817
Shop Building	65,216	25	6,522	5,535	259	359	652	6,805
Shop Tools	13,072	20	1,307	1,210	52	72	131	1,465
Siphon Tubes	10,000	15	250	1,094	37	51	283	1,465
Storage Building	26,308	20	2,631	2,435	105	145	526	3,210
Tool Carrier	15,118	15	1,512	1,608	60	83	756	2,508
Trailer - Lowbed	7,695	15	769	819	31	42	103	995
Trailer - Pipe	1,935	7	194	338	8	11	39	395
Truck Tractor	44,704	15	4,470	4,756	178	246	309	5,489
TOTAL INVESTMENT	295,372		28,786	32,045	1,172	1,621	5,240	40,077

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Field Sanitation	2,900	acre	0.65	1885
Liability Insurance	2,900	acre	0.36	870
Office Expense	2,900	acre	15.00	43.500
Share Rent @ 18%	600	acre	92.58	55,548
Supervisor Salary	600	acre	23.33	13,998

Table 5

UC COOPERATIVE EXTENSION
HOURLY EQUIPMENT COSTS
SACRAMENTO VALLEY – YOLO COUNTY 2000

			COSTS PER HOUR						
		Actual		Cash Overhead		Operating			
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
00	135 HP 2WD Tractor	895.70	6.24	0.18	0.25	3.07	11.35	14.42	21.10
00	165 HP 2WD Tractor	1,200.00	6.22	0.18	0.25	4.10	13.88	17.98	24.64
00	200 HP Crawler	803.20	14.17	0.55	0.75	3.99	16.82	20.81	36.28
00	340HP 75E Track	445.20	28.12	1.08	1.50	4.39	28.59	32.98	63.68
00	425Hp 9400T Track	759.40	19.21	0.74	1.02	5.11	35.74	40.85	61.82
00	90 HP 2WD Tractor	1,093.90	3.42	0.10	0.14	2.06	6.40	8.46	12.12
00	ATV	240.00	1.61	0.05	0.07	0.25	1.71	1.96	3.69
00	Bait Applicator	100.00	1.59	0.06	0.08	0.85	0.00	0.85	2.57
00	Bankout Wagon 30 T	339.00	2.10	0.08	0.11	1.91	0.00	1.91	4.20
00	Combine-No Header	259.20	38.71	1.45	2.01	10.40	18.08	28.48	70.65
00	Corn Header, 8 Row	132.00	20.95	0.70	0.96	6.40	0.00	6.40	29.01
00	Cult - Rolling #1	120.00	3.58	0.13	0.19	2.08	0.00	2.08	5.98
00	Cultivator - 6 Row	192.00	3.18	0.11	0.15	1.70	0.00	1.70	5.14
00	Disc - Stubble 18'	308.00	11.42	0.37	0.52	7.21	0.00	7.21	19.52
00	Disc Finish 25'	141.80	20.31	0.70	0.97	6.33	0.00	6.33	28.32
00	Ditcher - V	195.00	2.85	0.10	0.14	2.08	0.00	2.08	5.17
00	Lister - 6 Row	210.00	0.53	0.02	0.03	0.31	0.00	0.31	0.89
00	Mower - Flail 15'	200.00	4.98	0.16	0.23	5.21	0.00	5.21	10.58
00	Pickup Truck 1/22	260.00	7.28	0.13	0.18	1.03	4.28	5.31	12.89
00	Pickup Truck 3/4 T	270.00	8.70	0.15	0.21	1.27	4.28	5.55	14.61
00	Planter - 6 Row	120.00	9.77	0.32	0.44	3.97	0.00	3.97	14.50
00	Ringroller - 32'	128.00	3.97	0.14	0.19	0.80	0.00	0.80	5.10
00	Saddle Tank 300G #1	99.00	1.69	0.06	0.08	0.57	0.00	0.57	2.39
00	Saddle Tank300G #2	99.00	1.69	0.06	0.08	0.57	0.00	0.57	2.39
00	Scraper - Drag 10'	60.00	2.53	0.10	0.14	0.38	0.00	0.38	3.15
00	Sprayer System	48.00	5.91	0.19	0.27	0.97	0.00	0.97	7.33
00	Subsoiler16'9shank	242.00	10.38	0.34	0.47	7.21	0.00	7.21	18.40
00	Triplane - 16'	383.60	3.73	0.13	0.18	3.02	0.00	3.02	7.06

Table 6

UC COOPERATIVE EXTENSION
RANGING ANALYSIS
SACRAMENTO VALLEY - YOLO COUNTY

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE CORN

	YIELD (ton/acre)						
	3.39	3.88	4.36	4.85	5.33	5.82	6.30
OPERATING COSTS/ACRE:							
Cultural Cost	325	325	325	325	325	325	325
Harvest Cost	18	21	23	25	28	30	32
postharvest Cost	13	13	13	13	13	13	13
Interest on operating capital	17	17	17	17	17	17	17
TOTAL OPERATING COSTS/ACRE	373	375	378	380	382	385	387
TOTAL OPERATING COSTS/TON	110	97	87	78	72	66	61
CASH OVERHEAD COSTS/ACRE	112	122	131	140	150	159	169
TOTAL CASH COSTS/ACRE	485	497	509	520	532	544	556
TOTAL CASH COSTS/TON	143	128	117	107	100	94	88
NON-CASH OVERHEAD COSTS/ACRE	58	59	60	60	61	62	62
TOTAL COSTS/ACRE	543	556	569	580	593	606	618
TOTAL COSTS/TON	160	143	130	120	111	104	98

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR CORN

PRICE	YIELD (ton/acre)						
$/TON	3.39	3.88	4.36	4.85	5.33	5.82	6.30
75.75	-116	-88	-54	-19	15	49	83
86.57	-86	-46	-7	33	72	112	152
97.39	-50	-4	40	86	130	175	220
108.21	-13	38	87	138	188	238	288
119.03	24	80	135	191	245	301	356
129.85	61	122	182	243	303	364	424
140.67	97	164	229	295	361	427	492

NET RETURN PER ACRE ABOVE CASH COST FOR CORN

PRICE	YIELD (ton/acre)						
$/TON	3.39	3.88	4.36	4.85	5.33	5.82	6.30
75.75	-228	-203	-179	-153	-128	-103	-78
86.57	-192	-161	-131	-101	-70	-41	-10
97.39	-155	-119	-84	-48	-13	22	58
108.21	-118	-77	-37	4	45	85	126
119.03	-82	-35	10	57	103	148	194
129.85	-45	7	57	109	160	211	262
140.67	-8	49	104	162	218	274	331

NET RETURNS PER ACRE ABOVE TOTAL COST FOR CORN

PRICE	YIELD (ton/acre)						
$/TON	3.39	3.88	4.36	4.85	5.33	5.82	6.30
75.75	-286	-262	-239	-213	-189	-165	-140
86.57	-250	-220	-191	-161	-131	-103	-72
97.39	-213	-178	-144	-108	-74	-40	-4
108.21	-176	-136	-97	-56	-16	23	64
119.03	-140	-94	-50	-3	42	86	132
129.85	-103	-52	-3	49	99	149	200
140.67	-66	-10	44	102	157	212	269