UNIVERSITY OF CALIFORNIA - COOPERATIVE EXTENSION

2011

SAMPLE COSTS TO PRODUCE

Sunflowers

for Seed

SACRAMENTO VALLEY

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INTRODUCTION

Sample costs to produce sunflower seed in the Sacramento Valley are presented in this study. The hypothetical farm used in this report is 1,500 acres, with 100 acres of sunflowers in production. This study is intended as a guide only and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. Practices described are based on those production procedures considered typical for this crop and area, but will not apply to every situation. Sample costs for labor, materials, equipment, and custom services are based on current figures. Some costs and practices presented in this study may not be applicable to your situation. A blank column, "*Your Costs*", is provided in Table 1 to enter your costs.

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

STUDY CONTENTS

Sample Cost of Production studies for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis. Current studies, those produced during the last five years, and archived studies can be obtained from selected county UC Cooperative Extension offices or downloaded from the department website http://coststudies.ucdavis.edu.

ASSUMPTIONS

The following assumptions pertain to sample costs to produce sunflower seed in the Sacramento Valley. Practices described are not recommendations by the University of California, but rather represent production procedures considered typical of a well managed farm for the Sacramento Valley. Costs and practices detailed in this study may not be applicable to all situations. Cultural practices and varieties for the production of sunflowers vary by grower and region, so differences in costs may occur. 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.*

CULTURAL PRACTICES AND MATERIAL INPUTS

Land and Share Rent. This report is based on a 1,500 acre field and row crop farm of which 100 acres are producing sunflower seed. Rotational crops that might be planted on the remaining acres include alfalfa hay, corn, safflower, dry beans, other seed crops, processing tomatoes, and wheat.

Land in this study is leased on a share-rent basis with the landowner receiving 17% of the gross returns from the sunflower seed crop. Based on the yield and price assumed in this study, land rent is $231.20 per acre. The land rented includes developed wells and irrigation systems. The grower owns a shop and an equipment yard to repair and store equipment.

Labor. Basic hourly wages for workers are $11.35 and $9.20 per hour for machine operators and non-machine workers (irrigators) respectively. Adding 37% for SDI, FICA, insurance and other benefits raises the total labor costs to $15.55 per hour for machine operators and $12.60 per hour for non-machine labor. The labor for operations involving machinery are 20% higher than the operation time to account for the additional time involved in equipment set up, moving, maintenance and repair. Any returns above total costs are considered returns to investment.

Land Preparation. Primary tillage begins by stubble discing in the fall to incorporate residue from the previous crop, then deep chiseling to help open soil structure. For efficient water use the field is leveled twice with a landplane. In this study, six rows of 30 inch beds are listed per pass in November. Some growers in this region may use three 60 inch beds for planting double rows on one seedbed. Fields are again cultivated in April for weed control and to incorporate an herbicide. All of these operations are done prior to planting on 100% of the acres unless otherwise noted. Spraying an herbicide for winter bed weed control is usually done in January.

Stand Establishment. Sunflower seed is planted in April at a rate of approximately 1 to 6 pounds per acre, depending on the variety, along with a starter fertilizer. Because these are hybrid varieties, 25% of the plants are male and the remaining 75% are females for cross pollination. The male plants are destroyed and will not be harvested for seed. There are usually different planting times for the male and female varieties.

Seeds are planted into moist soil and begin to emerge in five to seven days depending on soil temperature. Companies contracting sunflower plantings in the Sacramento Valley will normally specify planting rates, and also provide the seed variety to be used by the grower. Yields and prices of the different sunflower seed varieties will vary. Growers are not charged for the seed as it is part of the contract for seed production. Hybrid sunflower seeds need good pollination, so growers generally rent

and place 2 hives per acre in their fields in June depending on the variety and planting date. In this study the cost is $31 per hive.

Stand Isolation. Hybrid sunflower varieties require at least one mile isolation around each field to avoid cross-pollination with other varieties. Companies may also specify different planting dates to isolate fields in time, in order to avoid cross-pollination from other varieties. Check with contracting companies for specific requirements.

Fertilization. A starter fertilizer of 8-24-6 is applied during planting at the rate of 15 gallons per acre. Later in the season UN-32 is sidedressed (injected) at 80 pounds of nitrogen per acre during the final cultivation.

Irrigation. Sunflowers are furrow irrigated with up to six irrigations during the growing season, depending on soil type. A total of 29 acre-inches of water is applied. Some growers may use an additional post-harvest irrigation to germinate sunflower seed so they can be destroyed by cultivation or use of an herbicide. This operation is not done in this study.

Weed Management. Both chemical and cultural practices are used for weed control in this study. During the winter, a fallow herbicide (usually Roundup) is used for weed control. Weeds are again controlled at preplant by mechanically mixing the herbicide Treflan in the soil with a cultivator. Two mechanical cultivations are used during the year to manage weeds. The first cultivation is done when applying an herbicide prior to planting and the second when applying liquid fertilizer post-plant.

Insect Management. The main pest of sunflower, the sunflower head moth, is generally controlled with Warrior (pyrethroid) in July, by air on 75% of the acreage, as this pest does not necessarily require treatment every year.

Written recommendations are required for use of most pesticides and are made by licensed pest control advisors. For information and pesticide use permits, contact the local county Agricultural Commissioner's office.

Harvest. Male sunflower rows are destroyed in August with a tractor and chopper to avoid weed seed contamination in the field. At maturity the female plants are sprayed with sodium chlorate to dry them down in preparation for harvest. Only the female plant rows are harvested. Harvesting is done by the grower using their own combine with a header. The seeds are hauled to the warehouse at a cost of $0.37 per hundredweight (cwt) where further cleaning, also referred to as scalping, is performed by the contracting seed company at no charge. Any additional seed cleaning is paid by the grower

Yields. The net crop yield used in this study is 1,360 pounds per acre. The gross yield before cleaning is 1,600 pounds per acre. Approximately 15% of the gross yield is lost when the seeds are cleaned in the scalping process. Five counties reported growing sunflowers for certified seed in the Sacramento Valley. The harvested acreages of certified seed by county from 2005 through 2009 are shown in Table A. Yields will vary considerably by variety planted.

Table A. Seed Yields by County*

Year	Colusa	Glenn	Solano	Sutter	Yolo
	lbs/acre				
2005	1,100	745	920	795	NA
2006	1,000	736	960	646	1,020
2007	1,610	1,101	1,400	1,015	1,540
2008	1,320	894	1,040	718	NA
2009	NA	1,139	1,180	1,041	NA
Avg	1,258	923	1,100	843	1,280

*Data from Ag Commissioner Crop Reports. NA = Not Available

Returns. Due to the different hybrid sunflower seeds grown in the Sacramento Valley, prices will vary. A selling price of $1,363 per acre or $1.00 per pound for dry, scalped seed is used to estimate income from the sale of these seeds in this study. Prices vary considerably on a per pound basis as most contracts are made in dollars per acre. Depending on yield, per pound prices can differ significantly. The average prices for sunflower seed for the past five years are shown in Table B for four five in the Sacramento Valley. Tehama County did not state prices received or yields in their annual crop report.

Table B. Average Seed Prices*

Year	Colusa	Glenn	Solano	Sutter	Yolo
			$/lb		
2005	1.13	0.65	1.31	0.79	NA
2006	0.85	1.26	0.87	0.90	0.39
2007	0.95	0.93	0.73	0.90	0.53
2008	1.12	1.61	0.87	1.04	NA
2009	NA	1.19	0.71	1.22	NA
Avg	1.01	1.13	0.90	0.97	0.46

*Data from Ag Commissioner Crop Reports. NA = Not Available

Risk. Risks associated with sunflower seed 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 sunflower seed production. Though, not used in this study, crop insurance is a risk management tool available to growers.

CASH 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, and investment repairs.

Equipment Cash Costs. Equipment costs are composed of three parts; capital recovery, cash overhead, and operating costs. The operating costs consist of fuel, lubrication, and repairs.

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 horsepower (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 $2.04 and $2.67 per gallon, respectively.

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 5.75% 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 0.676% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs $1,827 for the entire farm or $0.63 per acre.

Office Expense: Office and business expenses are estimated at $18.00 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.

NON-CASH OVERHEAD COSTS

Capital Recovery Costs. Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments. Although farm equipment on farms in the Sacramento Valley might 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 1-3, 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 (Boehlje and Eidman). The calculation for the annual capital recovery costs is as follows: ((Purchase Price – Salvage Value) x (Capital Recovery Factor)) + (Salvage Value x Interest Rate).

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its 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 life in years is estimated by dividing the wear-out life, as given by ASAE by the annual use in hours. Salvage value is calculated as New Price x % Remaining Value.

Salvage value for other investments including irrigation systems, buildings, and miscellaneous equipment is zero. The salvage value for land is equal to the purchase price because land does not depreciate. Salvage value for investments can vary. The purchase price and salvage value for certain equipment and investments are shown in Table 4.

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 or investment.

Interest Rate. The interest rate of 4.75% is used to calculate capital recovery cost is the effective long term interest rate in January 2011. The interest rate is provided by a local farm lending agency and will vary according to risk and amount of loan.

Acknowledgment. Appreciation is expressed to cooperators who provided support and information for this study.

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For information concerning the above or other University of California publications, contact UC DANR Communications Services at 1-800-994-8849, online at www.ucop.edu, or your local county UC Cooperative Extension office.

Table 1

U.C. COOPERATIVE EXTENSION
COSTS PER ACRE TO PRODUCE SUNFLOWER SEED
SACRAMENTO VALLEY – 2011

Labor Rate: $15.55/hr. machine labor
$12.60/hr. non-machine labor

Interest Rate: 5.75%
Yield per Acre: 1,360 Pounds

Operation	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	0.25	5	9	0	0	14	
Chisel	0.16	3	6	0	0	9	
Landplane Fields - 2X	0.30	6	12	0	0	17	
Laser Level (1 In 10 Years)	0.00	0	0	0	10	10	
List Beds	0.20	4	7	0	0	11	
Weed Control - Fallow Herbicide	0.20	4	3	20	0	27	
Weed Control - Preplant Herbicide	0.20	4	3	7	0	14	
Plant & Starter Fertilizer	0.33	6	7	37	0	50	
Make Ditches - 2X	0.02	0	1	0	0	1	
Irrigate - 6X	1.20	15	0	64	0	80	
Close Ditches - 2X	0.02	0	0	0	0	1	
Cultivate & Apply 80 Lbs N	0.20	4	3	41	0	48	
Pollinate Sunflowers	0.00	0	0	62	0	62	
Insect Control - Moths 75% of Acres	0.00	0	0	12	7	18	
Knock Down Males - 25% of Acres	0.10	2	2	0	0	3	
Defoliate - 75% of Acres	0.00	0	0	8	9	17	
Pickup Use	0.18	7	4	0	0	10	
ATV Use	0.18	3	1	0	0	4	
TOTAL CULTURAL COSTS	3.54	62	58	251	25	397	
Harvest:							
Harvest	0.33	6	18	0	0	25	
Haul	0.00	0	0	0	5	5	
TOTAL HARVEST COSTS	0.33	6	18	0	5	30	
Postharvest:							
Stubble Disc	0.20	4	8	0	0	11	
TOTAL POSTHARVEST COSTS	0.20	4	8	0	0	11	
Interest on Operating Capital @ 5.75%	0.06					9	
TOTAL OPERATING COSTS/ACRE		72	84	251	30	447	
CASH OVERHEAD:							
Liability Insurance						1	
Office Expense						18	
Share Rent @ 17% of Gross Returns						231	
Field Sanitation						1	
Field Supervisors' Salary						30	
Property Taxes						3	
Property Insurance						3	
Investment Repairs						2	
TOTAL CASH OVERHEAD COSTS						288	
TOTAL CASH COSTS/ACRE						735	
NON-CASH OVERHEAD:							
Investment	Per producing Acre		-- Annual Cost -- Capital Recovery				
Fuel Tanks & Pumps	7		1			1	
Fuel Wagon	1		0			0	
Shop Building	35		2			2	
Shop Tools	6		0			0	
Siphon Tubes	6		0			0	
Tool Carrier	7		1			1	
Equipment	505		51			51	
TOTAL NON-CASH OVERHEAD COSTS	568		55			55	
TOTAL COSTS/ACRE						790	

U.C. COOPERATIVE EXTENSION

Table 2. COSTS AND RETURNS PER ACRE TO PRODUCE SUNFLOWER SEED
SACRAMENTO VALLEY – 2011

Labor Rate: $15.55/hr. machine labor
$12.60/hr. non-machine labor

Interest Rate: 5.75%
Yield per Acre: 1,360 Pounds

	Quantity/Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Sunflowers	1,360	Lb	1.00	1,360	
TOTAL GROSS RETURNS FOR SUNFLOWERS				1,360	
OPERATING COSTS					
Custom:					
Laser Level	0.10	Acre	95.00	10	
Air Application	1.75	Acre	9.00	16	
Hauling - Sunflower Seed	13.60	Cwt	0.37	5	
Herbicide:					
Roundup Weathermax	22.00	FlOz	0.92	20	
Treflan HFP	1.50	Pint	4.86	7	
Fertilizer:					
8-24-6	15.00	Gal	2.45	37	
UN-32	80.00	Lb N	0.52	41	
Irrigation:					
Water	29.00	AcIn	2.22	64	
Pollination:					
Bee Hives - Rental	2.00	Hive	31.00	62	
Insecticide:					
Warrior T	3.84	Oz	3.02	12	
Desiccant:					
Sodium Chlorate 5 SE	1.00	Gal	7.70	8	
Labor (machine)	3.66	Hrs	15.55	57	
Labor (non-machine)	1.20	Hrs	12.60	15	
Fuel - Gas	1.19	Gal	2.67	3	
Fuel - Diesel	24.11	Gal	2.04	49	
Lube				8	
Machinery repair				24	
Interest on Operating Capital @ 5.75%				9	
TOTAL OPERATING COSTS/ACRE				447	
NET RETURNS ABOVE OPERATING COSTS				913	
CASH OVERHEAD COSTS:					
Liability Insurance				1	
Office Expense				18	
Share Rent @ 17% of Gross Returns				231	
Field Sanitation				1	
Field Supervisors' Salary				30	
Property Taxes				3	
Property Insurance				3	
Investment Repairs				2	
TOTAL CASH OVERHEAD COSTS/ACRE				288	
TOTAL CASH COSTS/ACRE				735	
NON-CASH OVERHEAD COSTS (CAPITAL RECOVERY):					
Fuel Tanks & Pumps				1	
Fuel Wagon				0	
Shop Building				2	
Shop Tools				0	
Siphon Tubes				0	
Tool Carrier				1	
Equipment				51	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				55	
TOTAL COSTS/ACRE				790	
NET RETURNS ABOVE TOTAL COSTS				570	

U.C. COOPERATIVE EXTENSION

Table 3. MONTHLY COSTS PER ACRE TO PRODUCE SUNFLOWER SEED
SACRAMENTO VALLEY – 2011

Beginning OCT 09 Ending OCT 10	OCT 09	NOV 09	DEC 09	JAN 10	FEB 10	MAR 10	APR 10	MAY 10	JUN 10	JUL 10	AUG 10	SEP 10	OCT 10	TOTAL
Cultural:														
Stubble Disc	14													14
Chisel	9													9
Landplane Fields - 2X	17													17
Laser Level (1 In 10 Years)	10													10
List Beds		11												11
Weed Control - Fallow Herbicide				27										27
Weed Control - Preplant Herbicide							14							14
Plant & Starter Fertilizer							50							50
Make Ditches - 2X								1	1					1
Irrigate - 6X								14	14	26	26			80
Close Ditches - 2X								0			0			1
Cultivate & Apply 80 Lbs of N								48						48
Pollinate Sunflowers									62					62
Insect Control - Moths 75% of Acres										18				18
Knock Down Males - 25% of Acres											3			3
Defoliate - 75% of Acres											17			17
Pickup Use	1	1	1	1	1	1	1	1	1	1	1	1		10
ATV Use	0	0	0	0	0	0	0	0	0	0	0	0	0	4
TOTAL CULTURAL COSTS	51	12	1	29	1	1	65	64	78	46	48	1	0	397
Harvest:														
Harvest											13	12		25
Haul											3	3		5
TOTAL HARVEST COSTS											16	14		30
Postharvest:														
Stubble Disc													11	11
TOTAL POSTHARVEST COSTS													11	11
Interest on Operating Capital @ 5.75%	0	0	0	0	0	0	1	1	1	2	2	0	0	9
TOTAL OPERATING COSTS/ACRE	51	13	2	29	2	2	66	65	79	47	65	15	11	447
OVERHEAD:														
Liability Insurance					1									1
Office Expense	4	4	4	4	4	4	4	4	4	4	4	4	2	48
Share Rent @ 17% of Gross Returns												231		231
Field Sanitation	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Field Supervisors' Salary	4	4	4	4	4	4	4	4	4	4	4	4	2	48
Property Taxes				3										3
Property Insurance				3										3
Investment Repairs	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL CASH OVERHEAD COSTS	4	4	4	10	5	4	4	4	4	4	4	235	2	288
TOTAL CASH COSTS/ACRE	55	17	6	39	6	6	70	69	83	51	69	250	14	735

U.C. COOPERATIVE EXTENSION

Table 4. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS
SACRAMENTO VALLEY – 2011

ANNUAL EQUIPMENT COSTS

						- Cash Overhead -		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
10	200 HP Crawler	175,487	10	51,836	18,282	872	1,137	20,290
10	90 HP 2WD Tractor	77,326	10	22,841	8,056	384	501	8,941
10	ATV	6,840	7	2,595	850	36	47	934
10	Chisel HD 16'	9,000	15	750	817	37	49	903
10	Combine - No Header	235,951	15	24,163	21,208	998	1,301	23,507
10	Corn Header - 6 Row	46,055	10	8,687	5,193	210	274	5,677
10	Cultivator - 3 Row	10,890	12	1,508	1,115	48	62	1,225
10	Disc - Stubble 16'	16,831	10	2,976	1,914	76	99	2,089
10	Ditcher - V	9,596	12	1,329	983	42	55	1,079
10	Lister - 3 Row - 45'	8,942	10	1,581	1,017	40	53	1,110
10	Mower - Flail 15'	3,402	20	177	262	14	18	293
10	Pickup - 1/2 Ton	25,675	5	11,507	3,796	143	186	4,125
10	Pickup - 3/4 Ton	31,008	5	13,897	4,585	172	225	4,982
10	Planter - 3 Row	20,268	10	3,584	2,305	91	119	2,515
10	Rear Blade - 8'	3,115	20	162	240	13	16	269
10	Saddle Tank - 300 Gal	4,055	10	717	461	18	24	503
10	Triplane - 16'	22,200	12	3,075	2,274	97	126	2,497
	TOTAL	706,641		151,385	73,358	3,291	4,290	80,938
	60% of New Cost *	423,985		90,831	44,015	1,974	2,574	48,563

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

ANNUAL INVESTMENT COSTS

					------ Cash Overhead ------			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Repairs	Total
INVESTMENT								
Fuel Tanks & Pumps	20,623	20	2,062	1,556	87	113	567	2,323
Fuel Wagon	2,773	20	277	209	12	15	76	312
Shop Building	101,472	25	10,147	6,800	428	558	2,562	10,348
Shop Tools	17,723	20	1,772	1,337	75	97	487	1,996
Siphon Tubes	18,142	20	1,814	1,369	77	100	499	2,044
Tool Carrier	20,500	15	2,050	1,845	86	113	564	2,608
TOTAL INVESTMENT	181,233		18,122	13,116	765	997	4,755	19,633

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Field Sanitation	2,900	Acre	0.88	2,552
Liability Insurance	2,900	Acre	0.63	1,827
Field Supervisor Salary	2,900	Acre	30.00	87,000
Office Expense	2,900	Acre	18.00	52,200
Share Rent @ 17% of Gross Returns	100	Acre	231.20	23,120

Table 5.

U.C. COOPERATIVE EXTENSION
HOURLY EQUIPMENT COSTS
SACRAMENTO VALLEY – 2011

			---------- COSTS PER HOUR ----------					
		Actual	- Cash Overhead -			-------- Operating --------		
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
10	200 HP Crawler	1,599.3	6.86	0.33	0.43	4.67	27.23	31.90	39.51
10	90 HP 2WD Tractor	1,599.5	3.02	0.14	0.19	2.06	10.37	12.43	15.78
10	ATV	284.8	1.79	0.08	0.10	0.50	3.68	4.18	6.15
10	Chisel HD 16'	166.0	2.95	0.14	0.18	2.93	0.00	2.93	6.19
10	Combine-No Header	203.7	62.48	2.94	3.83	16.66	29.27	45.93	115.17
10	Corn Header, 6 Row	203.7	15.30	0.62	0.81	8.67	0.00	8.67	25.39
10	Cultivator - 3 Row	166.0	4.03	0.17	0.22	2.28	0.00	2.28	6.71
10	Disc - Stubble 16'	200.0	5.74	0.23	0.30	2.78	0.00	2.78	9.04
10	Ditcher - V	166.0	3.55	0.15	0.20	2.67	0.00	2.67	6.57
10	Lister - 3 Row	200.0	3.05	0.12	0.16	1.91	0.00	1.91	5.24
10	Mower - Flail 5'	100.0	1.57	0.08	0.11	1.34	0.00	1.34	3.10
10	Pickup 1/2 Ton	284.8	8.00	0.30	0.39	1.67	7.68	9.35	18.04
10	Pickup 3/4 Ton	284.8	9.66	0.36	0.47	2.02	9.21	11.23	21.73
10	Planter - 3 Row	150.0	9.22	0.37	0.48	5.59	0.00	5.59	15.65
10	Rear Blade - 8'	150.0	0.96	0.05	0.07	0.46	0.00	0.46	1.54
10	Saddle Tank 300Gal	150.0	1.84	0.07	0.10	1.09	0.00	1.09	3.11
10	Triplane - 16'	250.0	5.46	0.23	0.30	3.39	0.00	3.39	9.38

Table 6.

U.C. COOPERATIVE EXTENSION
RANGING ANALYSIS
SACRAMENTO VALLEY - 2011

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE SUNFLOWER SEED

	YIELD (POUNDS/ACRE)						
	1,000	1,100	1,200	1,300	1,400	1,500	1,600
OPERATING COSTS/ACRE:							
Cultural Cost	397	397	397	397	397	397	397
Harvest Cost	22	24	26	28	30	33	35
Postharvest Cost	11	11	11	11	11	11	11
Interest on operating capital	9	9	9	9	9	9	9
TOTAL OPERATING COSTS/ACRE	439	441	443	445	448	450	452
TOTAL OPERATING COSTS/CWT	0.44	0.40	0.37	0.34	0.32	0.30	0.28
CASH OVERHEAD COSTS/ACRE	288	288	288	288	288	288	289
TOTAL CASH COSTS/ACRE	727	729	731	734	736	738	741
TOTAL CASH COSTS/CWT	0.73	0.66	0.61	0.56	0.53	0.49	0.46
NON-CASH OVERHEAD COSTS/ACRE	50	52	53	55	56	57	59
TOTAL COSTS/ACRE	777	780	784	788	792	796	799
TOTAL COSTS/CWT	0.78	0.71	0.65	0.61	0.57	0.53	0.50

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR SUNFLOWER SEED

PRICE (DOLLARS/LBS)	YIELD POUNDS/ACRE						
SUNFLOWER SEED	1,000	1,100	1,200	1,300	1,400	1,500	1,600
	---------- $/acre ----------						
0.70	261	329	397	465	532	600	668
0.80	361	439	517	595	672	750	828
0.90	461	549	637	725	812	900	988
1.00	561	659	757	855	952	1,050	1,148
1.10	661	769	877	985	1,092	1,200	1,308
1.20	761	879	997	1,115	1,232	1,350	1,468
1.30	861	989	1,117	1,245	1,372	1,500	1,628

NET RETURNS PER ACRE ABOVE CASH COSTS FOR SUNFLOWER SEED

PRICE (DOLLARS/LBS)	YIELD POUNDS/ACRE						
SUNFLOWER SEED	1,000	1,100	1,200	1,300	1,400	1,500	1,600
	---------- $/acre ----------						
0.70	-27	41	109	176	244	312	379
0.80	73	151	229	306	384	462	539
0.90	173	261	349	436	524	612	699
1.00	273	371	469	566	664	762	859
1.10	373	481	589	696	804	912	1,019
1.20	473	591	709	826	944	1,062	1,179
1.30	573	701	829	956	1,084	1,212	1,339

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR SUNFLOWER SEED

PRICE (DOLLARS/LBS)	YIELD POUNDS/ACRE						
SUNFLOWER SEED	1,000	1,100	1,200	1,300	1,400	1,500	1,600
	---------- $/acre ----------						
0.70	-77	-10	56	122	188	254	321
0.80	23	100	176	252	328	404	481
0.90	123	210	296	382	468	554	641
1.00	223	320	416	512	608	704	801
1.10	323	430	536	642	748	854	961
1.20	423	540	656	772	888	1,004	1,121
1.30	523	650	776	902	1,028	1,154	1,281

Table 7.

U.C. COOPERATIVE EXTENSION
COSTS AND RETURNS / BREAKEVEN ANALYSIS
SACRAMENTO VALLEY – 2011

COSTS AND RETURNS - PER ACRE BASIS

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Sunflower Seed	1,360	447	913	735	625	790	570

COSTS AND RETURNS - TOTAL ACREAGE

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Sunflower Seed	136,000	44,680	91,320	73,500	62,500	79,043	56,957

BREAKEVEN PRICES PER YIELD UNIT

			-------- Breakeven Price To Cover --------		
CROP	Base Yield (Units/Acre)	Yield Units	Operating Costs	Cash Costs	Total Costs
			---------- $ per Yield Unit ----------		
Sunflower Seed	1,360	Lb	0.33	0.54	0.58

BREAKEVEN YIELDS PER ACRE

			-------- Breakeven Yield To Cover --------		
CROP	Yield Units	Base Price ($/Unit)	Operating Costs	Cash Costs	Total Costs
			---------- Yield Units /Acre ----------		
Sunflower Seed	Lb	1.00	447	735	790

Table 8.

UC COOPERATIVE EXTENSION
OPERATIONS WITH EQUIPMENT & MATERIALS
SACRAMENTO VALLEY - 2011

Operation	Operation Month	Tractor/ Power Unit	Implement	Material	Broadcast Rate/acre	Material Unit
Cultural:						
Stubble Disc	October	200 HP Crawler	Disc - Stubble 16'			
	October	200 HP Crawler	Chisel HD 16'			
Landplane Fields - 2X	October	200 HP Crawler	Triplane - 16'			
Laser Level Fields (1 in 10 Years)	October			Custom		
List Beds	November	200 HP Crawler	Lister - 3 Row - 45'			
Weed Control - Fallow Herbicide	January	ATV	ATV Sprayer - 30' Boom	Roundup Ultra Max	1.50	Pint
Weed Control - Preplant Herbicide	March	90 HP 2WD Tractor	Cultivator - 3 Row Rolling Saddle Tank - 300 Gal	Treflan HFP	2.00	Pint
Plant & Starter Fertilizer	April	90 HP 2WD Tractor	Planter - 3 Row	Sunflower Seed		
				8-24-6	15.00	Gal
Make Drain - 2X	May June	200 HP Crawler	Ditcher - V			
Irrigate	May	Labor		Water	4.50	AcIn
	June	Labor		Water	4.50	AcIn
	July	Labor		Water	10.00	AcIn
	August	Labor		Water	10.00	AcIn
Close Drain	May June	90 HP 2WD Tractor	Rear Blade - 8'			
Cultivate & Apply 80 Lbs N	May	90 HP 2WD Tractor	Cultivator - 3 Row Sled	UN-32	80.00	Lbs N
Pollinate Sunflowers	June			Rental		
Insect Control - Moths on 75% of Acres	July			Warrior T	3.84	FlOz
Knock Down Males- 25% of Acres	August	90 HP 2WD Tractor	Mower - Flail 5'			
Defoliate - 75% of Acres	August			Sodium Chlorate	1.00	Gal
Harvest Safflower	August September	Combine - No Header	Grain Platform - 20'			
Haul	August September			Custom		
Stubble Disc	October	200 HP Crawler	Disc - Stubble 16'			
Pickup Use	All	Pickup - 1/2 Ton Pickup - 3/4 Ton				
ATV Use	All	ATV				