
UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2002

SAMPLE COSTS TO PRODUCE
SAFFLOWER



San Joaquin Valley - South

Flood Irrigation

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INTRODUCTION

Sample costs to produce safflower are presented in this study. 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 production practices considered typical for the crop and area, but these same practices will not apply to every farming operation. The sample costs for labor, materials, equipment and custom services are based on current figures. A blank column, “*Your Costs*”, in Tables 1 and 2 is provided for entering 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 or your local UC Cooperative Extension office.

Sample Cost of Production Studies for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis, (530) 752-3589. Current studies can be downloaded from the department website at <http://coststudies.ucdavis.edu> or obtained from selected county UC Cooperative Extension offices.

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ASSUMPTIONS

The assumptions refer to Tables 1 to 6 and pertain to sample costs to plant and produce safflower in the southern San Joaquin Valley. The described practices are not University of California recommendations, but represent operations and materials considered typical of a well-managed safflower crop in the region. The costs, materials, and practices shown in this study are based on the assumptions and are not applicable to all farms. Establishment and cultural practices vary by farm and the differences can be significant. *The use of trade names in this report does not constitute an endorsement or recommendation by the University of California.*

Farm. This report is based on a 1,600-acre field and row crop farm. Safflower is planted on contiguous fields totaling 160 acres. The remaining acres, planted in rotation with the safflower, may be cotton, alfalfa hay, wheat, and corn silage. Safflower in the area is planted for oil production. It may also be planted as a drainage/reclamation management tool, which requires different management practices as noted in the text. The farm is owned and operated by the grower.

Production Operating Costs

Land Preparation. The ground is disced one time with a stubble disc. A second pass is made with an offset or finish disc to incorporate preplant herbicide and fertilizer, and to smooth the surface. Borders at 40 to 120-foot intervals – 60-feet in this study – for irrigation are made after planting. In some areas, especially where late irrigation is needed beds may be required. Additional costs will be incurred for bed listing.

Stand Establishment. Safflower is planted from January through mid-March. In February, 30 pounds of seed per acre are flat-planted. The seed is planted with a grain drill on, approximately, a 7-inch row spacing.

Pest Management. The pesticides and rates mentioned in this cost study are listed in UC *Integrated Pest Management Guidelines, Safflower*. **Pesticides mentioned in the study are not recommendations, but those commonly used in the region.** For information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at www.ipm.ucdavis.edu. For information and pesticide use permits, contact the local county agricultural commissioner's office.

Pest Control Adviser (PCA). Written recommendations are required for many pesticides and are made by licensed pest control advisers. In addition the PCA will monitor the field for agronomic problems including pests and nutrition. Growers may hire private PCA's or receive the service as part of a service agreement with an agricultural chemical and fertilizer company.

Weeds. In November prior to planting, Treflan is sprayed on the flat ground and incorporated with the finish discing to control winter grasses.

Insects. Lygus (*Lygus hesperus*) populations occur in safflower, but usually do not cause sufficient economic damage to warrant control. In plantings where an adjacent crop, such as cotton, that requires lygus control, the lygus in safflower should be controlled.

Diseases. Phytophthora root rots (*Phytophthora cryptogea* and *P. dreschleri*) are the main diseases of irrigated safflower. Control is through irrigation management by not letting the crop stress and not irrigating after mid-May.

Fertilization. Preplant fertilizer at 80 pounds of N per acre is incorporated with the final discing. The liquid fertilizer, UN32 is commonly applied with a Terragator fertilizer applicator furnished by the fertilizer company. In late March/early April, UN-32 is water run at 20 - 30 pounds of N per acre. The split application is optional and all fertilizer can be applied in November. Fertilizer amounts may increase or decrease depending upon which crops the safflower follows. Soil test are recommended to determine correct amount. Fertilizer may not be required for safflower planted for reclamation purposes.

Irrigation. In this study, surface water is calculated to cost \$65 per acre-foot and operational costs for delivery to the field. For this cost analysis, 24 acre-inches are applied to the field in February, late-March/early-April, and mid-May. Applied water may range from 12 inches to 24-inches per season, depending upon soil profile and whether the crop is being used for reclamation purposes. It is assumed in this study that winter rains and soil water not used by the previous crop will supply some of the water used by this crop. Runoff and evaporation are not accounted for.

Harvest. A custom harvest operator combines the crop. The safflower is dumped from the combine directly into the bankout wagon that delivers the safflower to bulk grain trailers for transport to the buyer. The grower pays transportation from the field to the processor.

Yields. The five-year average yields based on available agricultural commissioner data for the southern San Joaquin Valley ranges from 1.1 to 2.5 tons per acre. The unweighted average is 1.5 tons per acre.

Returns. Growers will usually produce safflower under contract with a processor. Average prices to San Joaquin Valley growers over five years based on data from available agricultural commissioner reports ranged from \$146 to \$320 per ton. The price used in this study is the current market price of \$240.00 per ton. This year the Safflower is in the USDA Farm Program and has a loan deficiency payment (LDP) of \$20.00 per ton, bringing the total returns to \$260.00 per ton. Table 6, Ranging Analysis shows prices over a range of yields, but does not separate out government payments on the returns.

Labor. Hourly wages for workers are \$8.40 for machine operators and \$6.75 per hour non-machine labor. Adding 34% for the employers share of federal and state payroll taxes, insurance, and other possible benefits gives the labor rates shown of \$11.25 and \$9.05 per hour for machine labor and non-machine labor, respectively. 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 field repair.

Pickup. The pickup mileage for the ranch is estimated at 10,000 per year with 2,500 miles allocated to the safflower crop.

Equipment Operating Costs. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by ASAE. Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO horsepower, and fuel type. Prices for on-farm delivery of diesel and gasoline are \$1.26 and \$1.51 per gallon, respectively. 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.

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 7.40% per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post harvest operations is discounted back to the last harvest month using a negative interest charge.

Risk. The risks associated with crop production 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 profitability and economic viability.

Cash Overhead Costs

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, sanitation services, equipment repairs, and management.

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.

Insurance. Insurance for farm investments varies depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.660% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$1,216 for the entire farm.

Office Expense. Office and business expenses are estimated at \$30 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, shop and office utilities, and miscellaneous administrative charges.

Management/Supervisor Wages. Salary is not included. Returns above costs are considered a return to management

Investment Repairs. Annual maintenance is calculated as 2 percent of the purchase price.

Non-Cash Overhead Costs

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

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). 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 formula for the calculation of the annual capital recovery costs is ((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 useful life. For farm machinery (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 wear out 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 the purchase price because land does not depreciate. The purchase price and salvage value for 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. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

Interest Rate. The interest rate of 6.41% used to calculate capital recovery cost is the USDA-ERS's ten-year average of California's agricultural sector long-run rate of return to production assets from current income. This represents the long-term interest rate typical of another agricultural enterprise.

Irrigation System. The district water is delivered via canal and pumped into the pipeline by a 25 horsepower motor. The typical border/furrow run is one-quarter mile. The system for the 160 acres consists of two one-half mile 15 to 18 inch lines with a 10-inch alfalfa valve at 60-foot intervals plus a quarter-mile intertie 12-inch PVC line. The irrigation system is considered an improvement to the property and has a 25-year life. It is assumed that other irrigation systems are used on the remaining portion of the ranch and thus are not included in the system costs.

Land. Field and row-crop land values range from \$700 per acre to \$5,000 per acre. Values are affected by location and available water. Land in this study is valued at \$3,300 per acre.

Building. The metal buildings are on a cement slab and comprise 2,400 square feet.

Tools. This includes shop tools, hand tools, and miscellaneous field tools such as pruning tools.

Fuel Tanks. Cost is based on grower estimates for a system with diesel tanks and electric pumps. The tanks and setup meet federal, state, and county regulations.

Equipment. Farm equipment is purchased new or used, but the 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. 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 and are discussed under operating costs.

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

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UC COOPERATIVE EXTENSION
Table 1 COSTS PER ACRE to PRODUCE SAFFLOWER
 SAN JOAQUIN VALLEY - SOUTH 2002

Operation	Operation Time (Hrs/A)	Cash and Labor Cost per acre				Total Cost	Your Cost
		Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent		
Cultural:							
Land Prep: Stubble Disc 1X	0.12	2	3	0	0	5	
Weed: Spray Treflan	0.09	1	1	5	0	8	
Fertilize:N applied by Fertilizer Company	0.00	0	0	21	0	21	
Land Prep: Finish Disc 1X	0.10	1	2	0	0	3	
Plant Safflower	0.15	2	2	17	0	21	
Make Border 1/60'	0.09	1	1	0	0	2	
Make Drain	0.14	2	4	0	0	6	
Irrigate	1.87	17	0	130	0	147	
Fertilize:Water Run N	0.00	0	0	7	0	7	
Close Drains	0.08	1	1	0	0	2	
Pickup Truck Use	0.52	7	3	0	0	10	
TOTAL CULTURAL COSTS	3.16	34	18	180	0	232	
Harvest:							
Harvest:Custom	0.00	0	0	0	26	26	
Harvest:Haul to Processor	0.00	0	0	0	10	10	
TOTAL HARVEST COSTS	0.00	0	0	0	36	36	
Postharvest:							
Stubble Disc 1X	0.12	2	3	0	0	5	
TOTAL POSTHARVEST COSTS	0.12	2	3	0	0	5	
Interest on operating capital @ 7.40%						11	
TOTAL OPERATING COSTS/ACRE		36	21	180	36	283	
TOTAL OPERATING COSTS/TON						189	
CASH OVERHEAD:							
Liability Insurance						1	
Office Expense						30	
Property Taxes						37	
Property Insurance						2	
Investment Repairs						13	
TOTAL CASH OVERHEAD COSTS						82	
TOTAL CASH COSTS/ACRE						365	
TOTAL CASH COSTS/TON						243	
NON-CASH OVERHEAD							
		<u>Per producing Acre</u>		<u>Annual Cost Capital Recovery</u>			
Irrigation System - Safflower Only		451		37		37	
Fuel Tanks & Pumps		12		1		1	
Land		3,300		212		212	
Truck 2-Ton Service		22		4		4	
Portable Pump		12		2		2	
Shop Building		41		3		3	
Shop Tools		8		1		1	
Equipment		115		15		15	
TOTAL NON-CASH OVERHEAD COSTS		3,961		275		274	
TOTAL COSTS/ACRE						639	
TOTAL COSTS/TON						426	

UC COOPERATIVE EXTENSION
Table 2 COSTS AND RETURNS PER ACRE to PRODUCE SAFFLOWER
 SAN JOAQUIN VALLEY - SOUTH 2002

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Safflower	1.50	ton	240.00	360	
Loan Deficiency Payment	1.50	ton	20.00	30	
TOTAL GROSS RETURNS			260.00	390	
OPERATING COSTS					
Herbicide:					
Treflan HFP	1.50	pint	3.50	5	
Fertilizer:					
UN-32	105.00	lb N	0.26	28	
Seed:					
Safflower Seed	30.00	lb	0.56	17	
Irrigation:					
Water	24.00	acin	5.42	130	
Custom:					
Harvest	1.00	acre	26.00	26	
Haul	1.00	acre	10.00	10	
Labor (machine)	1.69	hrs	11.25	19	
Labor (non-machine)	1.87	hrs	9.05	17	
Fuel - Gas	1.30	gal	1.51	2	
Fuel - Diesel	8.14	gal	1.26	10	
Lube				2	
Machinery repair				7	
Interest on operating capital				11	
TOTAL OPERATING COSTS/ACRE				283	
TOTAL OPERATING COSTS/TON				189	
NET RETURNS ABOVE OPERATING COSTS				107	
CASH OVERHEAD COSTS:					
Liability Insurance				1	
Office Expense				30	
Property Taxes				37	
Property Insurance				2	
Investment Repairs				13	
TOTAL CASH OVERHEAD COSTS/ACRE				82	
TOTAL CASH COSTS/ACRE				365	
TOTAL CASH COSTS/TON				243	
NON-CASH OVERHEAD COSTS:					
Irrigation System - Safflower Only				37	
Fuel Tanks & Pumps				1	
Land				212	
Truck 2-Ton Service				4	
Portable Pump				2	
Shop Building				3	
Shop Tools				1	
Equipment				15	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				274	
TOTAL COSTS/ACRE				639	
TOTAL COSTS/TON				426	
NET RETURNS ABOVE TOTAL COSTS				-249	

UC COOPERATIVE EXTENSION
Table 3 MONTHLY CASH COSTS PER ACRE to PRODUCE SAFFLOWER
 SAN JOAQUIN VALLEY - SOUTH 2002

Beginning NOV 01	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
Ending OCT 02	01	01	02	02	02	02	02	02	02	02	02	02	
Cultural:													
Land Prep: Stubble Disc	5												5
Weed: Spray Treflan	8												8
Fertilize:N applied by Fertilizer Co	21												21
Land Prep: Finish Disc 1X	3												3
Plant Safflower				21									21
Irrigate:Make Border				2									2
Make Drain 3 Drains				6									6
Irrigate				24	44	44	36						147
Fertilize:Water Run						7							7
Close Drains									2				2
Pickup Truck Use	1	1	1	1	1	1	1	1	1	1	1	1	10
TOTAL CULTURAL COSTS	38	1	1	55	44	51	36	1	3	1	1	1	232
Harvest:													
Harvest:Custom											26		26
Harvest:Haul to Processor											10		10
TOTAL HARVEST COSTS											36		36
Postharvest:													
Stubble Disc 1X												5	5
TOTAL POSTHARVEST COSTS												5	5
Interest on operating capital	0	0	0	1	1	1	1	1	1	1	2	0	11
TOTAL OPERATING COSTS/ACRE	38	1	1	55	45	52	38	2	5	2	38	5	283
TOTAL OPERATING COSTS/TON	25	1	1	37	30	35	25	1	3	1	26	4	189
OVERHEAD:													
Liability Insurance			1										1
Office Expense	3	3	3	3	3	3	3	3	3	3	3	3	30
Property Taxes			18						18				37
Property Insurance			1						1				2
Investment Repairs	1	1	1	1	1	1	1	1	1	1	1	1	13
TOTAL CASH OVERHEAD COSTS	4	4	24	4	4	4	4	4	23	4	4	4	82
TOTAL CASH COSTS/ACRE	41	5	25	59	49	56	41	6	28	6	42	9	365
TOTAL CASH COSTS/TON	28	3	17	39	33	37	28	4	18	4	28	6	243

UC COOPERATIVE EXTENSION
**Table 4 WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT,
and BUSINESS OVERHEAD**
SAN JOAQUIN VALLEY - SOUTH 2002

ANNUAL EQUIPMENT COSTS

YrDescription	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insur- ance	Taxes		
02 135HP 7710 4WD Tractor	88,461	10	26,130	10,309	378	573		11,260
02 150HP 7810 4WD Tractor	102,012	10	30,133	11,888	436	661		12,985
02 225 HP Crawler	165,000	10	48,738	19,229	705	1,069		21,003
02 92 HP 2WD Tractor	39,775	10	11,749	4,635	170	258		5,063
02 Disc - Border	1,035	12	143	118	4	6		128
02 Disc - Offset 26'	25,071	12	3,472	2,857	94	143		3,094
02 Disc - Stubble 18'	45,045	10	7,966	5,647	175	265		6,087
02 Ditcher - V 5'	7,800	12	1,080	889	29	44		963
02 Grain Drill - 20'	22,733	10	4,020	2,850	88	134		3,072
02 Pickup 1/2 Ton	20,565	5	9,217	3,315	98	149		3,562
02 Rear Blade - 8'	2,050	18	136	191	7	11		209
02 Saddle Tank 300Gal	2,145	10	379	269	8	13		290
02 Spray Boom - 25'	1,609	10	285	202	6	9		217
TOTAL	523,301		143,448	62,398	2,200	3,334		67,932
60% of New Cost *	313,981		86,069	37,439	1,320	2,000		40,759

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insur- ance	Taxes	Repairs	
Fuel Tanks & Pumps	19,835	20	1,984	1,736	72	109	397	2,314
Irrigation System	72,160	25		5,867	238	361	1,443	7,909
Land	5,280,000	25	5,280,000	338,448	0	52,800	0	391,248
Portable Pump	19,554	10	1,955	2,563	71	108	978	3,720
Shop Building	65,216	25	6,522	5,190	237	359	652	6,437
Shop Tools	13,072	20	1,307	1,144	47	72	131	1,394
Truck 2-Ton Service	34,882	5	11,152	6,411	152	230	3,488	10,281
TOTAL INVESTMENT	5,504,719		5,302,920	361,359	817	54,039	7,089	423,303

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	1,600	acre	0.76	1,216
Office Expense	1,600	acre	30.00	48,000

UC COOPERATIVE EXTENSION
Table 5 HOURLY EQUIPMENT COSTS
 SAN JOAQUIN VALLEY - SOUTH 2002

Yr	Description	COSTS PER HOUR							
		Actual Hours Used	Capital Recovery	Cash Overhead		Operating			Total Costs/Hr.
				Insur- ance	Taxes	Repairs	Fuel & Lube	Total Oper.	
02	135HP 7710 4WD Tractor	1,599.90	3.87	0.14	0.21	2.29	11.35	13.64	17.86
02	150HP 7810 4WD Tractor	1,599.00	4.46	0.16	0.25	2.64	12.61	15.25	20.13
02	225 HP Crawler	1,599.40	7.21	0.26	0.40	4.27	21.02	25.29	33.16
02	92 HP 2WD Tractor	1,200.50	2.32	0.08	0.13	1.80	6.55	8.35	10.88
02	Disc - Border	165.10	0.43	0.01	0.02	0.16	0.00	0.16	0.63
02	Disc - Offset 26'	165.20	10.38	0.34	0.52	3.97	0.00	3.97	15.20
02	Disc - Stubble 18'	199.40	16.99	0.53	0.80	7.27	0.00	7.27	25.59
02	Ditcher - V 5'	166.20	3.21	0.11	0.16	2.11	0.00	2.11	5.58
02	Grain Drill - 20'	149.50	11.44	0.35	0.54	6.08	0.00	6.08	18.40
02	Pickup 1/2 Ton	285.30	6.97	0.21	0.31	1.33	4.34	5.67	13.16
02	Rear Blade - 8'	166.30	0.69	0.03	0.04	0.30	0.00	0.30	1.05
02	Saddle Tank 300 Gal	149.70	1.08	0.03	0.05	0.57	0.00	0.57	1.73
02	Spray Boom - 25'	149.70	0.81	0.03	0.04	0.43	0.00	0.43	1.30

UC COOPERATIVE EXTENSION
Table 6 RANGING ANALYSIS
 SAN JOAQUIN VALLEY - SOUTH 2002

COSTS PER ACRE AT VARYING YIELD TO PRODUCE SAFFLOWER

	YIELD (tons/acre)						
	1.05	1.20	1.35	1.50	1.65	1.80	1.95
OPERATING COSTS/ACRE:							
Cultural Cost	232	232	232	232	232	232	232
Harvest Cost*	36	36	36	36	36	36	36
Postharvest Cost	5	5	5	5	5	5	5
Interest on operating capital	11	11	11	11	11	11	11
TOTAL OPERATING COSTS/ACRE	283	283	283	283	283	283	283
TOTAL OPERATING COSTS/ton	270	236	210	189	172	157	145
CASH OVERHEAD COSTS/ACRE	82	82	82	82	82	82	82
TOTAL CASH COSTS/ACRE	395	395	395	395	395	395	395
TOTAL CASH COSTS/ton	348	304	270	243	221	203	187
NON-CASH OVERHEAD COSTS/ACRE	274	274	274	274	274	274	274
TOTAL COSTS/ACRE	639	639	639	639	639	639	639
TOTAL COSTS/ton	608	532	473	426	387	355	328

*Harvest Costs are per acre

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR SAFFLOWER

PRICE \$/ton	YIELD (tons/acre)						
	1.05	1.20	1.35	1.50	1.65	1.80	1.95
180.00	-94	-67	-40	-13	14	41	68
200.00	-73	-43	-13	17	47	77	107
220.00	-52	-19	14	47	80	113	146
240.00	-31	5	41	77	113	149	185
260.00	-10	29	68	107	146	185	224
280.00	11	53	95	137	179	221	263
300.00	32	77	122	167	212	257	302

NET RETURNS PER ACRE ABOVE CASH COST FOR SAFFLOWER

PRICE \$/ton	YIELD (tons/acre)						
	1.05	1.20	1.35	1.50	1.65	1.80	1.95
180.00	-176	-149	-122	-95	-68	-41	-14
200.00	-155	-125	-95	-65	-35	-5	25
220.00	-134	-101	-68	-35	-2	31	64
240.00	-113	-77	-41	-5	31	67	103
260.00	-92	-53	-14	25	64	103	142
280.00	-71	-29	13	55	97	139	181
300.00	-50	-5	40	85	130	175	220

NET RETURNS PER ACRE ABOVE TOTAL COST FOR SAFFLOWER

PRICE \$/ton	YIELD (tons/acre)						
	1.05	1.20	1.35	1.50	1.65	1.80	1.95
180.00	-450	-423	-396	-369	-342	-315	-288
200.00	-429	-399	-369	-339	-309	-279	-249
220.00	-408	-375	-342	-309	-276	-243	-210
240.00	-387	-351	-315	-279	-243	-207	-171
260.00	-366	-327	-288	-249	-210	-171	-132
280.00	-345	-303	-261	-219	-177	-135	-93
300.00	-324	-279	-234	-189	-144	-99	-54