

# SAFFLOWER

## COST & GENERAL HINTS ON PRODUCTION



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COSTS & GENERAL HINTS ON SAFFLOWER PRODUCTION  
IN  
KERN COUNTY

David R. Woodruff, Farm Advisor

YIELD AND PRICE:

The average yields for the past five years have ranged from 1.00 tons per acre in 1972 to 1.20 in 1975. Grower price per ton delivered to point designated by contracting company ranged from \$100 in 1971 to \$200 in 1975.

SOIL REQUIREMENTS:

Soils which are deep, fertile, and well-drained are suitable for safflower. Roots have been found to a depth of 12 feet and exhaust available moisture down to at least nine feet. Safflower will tolerate a moderately saline soil but best yields come from soils less than three to four millimhos. The crop is slightly more sensitive to salinity than barley, cotton or sugar beets when irrigated.

PREPARATION OF SEEDBED:

A well prepared seedbed for safflower has a firm subsoil with a surface mulch free of large clods. A preirrigation will insure a more uniform emergence and start the crop off with a good moisture supply. The preirrigation should wet the soil at least six feet and preferably to ten feet. Safflower may be planted on single row 24 to 30 inch beds, double row 40 inch beds, or broadcast.

## PLANTING:

Best planting dates fall in late December through February. Seedlings are quite tolerant to low temperatures (20°), but once stems begin to form, susceptibility increases. It is important that safflower seeds be placed in moist soil. Depth should be one and one-half to two inches.

Seed is usually obtained from the company contracting the crop but a contract is usually not required to obtain seed. Gila variety has consistently performed well in variety tests. Currently there is keen market interest in UC 1 and similar varieties high in oleic oil. There are a number of high yielding proprietary varieties available from contracting companies.

Planting rates usually range from 10 to 15 pounds of seed per acre when planted on rows and 30 pounds per acre if drilled in flat.

## FERTILIZATION:

Fertilizer should be worked into the seedbed before planting. The suggested amounts of nitrogen are about 75 to 135 pounds per acre. Where a response from phosphate has been experienced, use 30 to 60 pounds of  $P_2O_5$  (13 to 26 pounds of P) per acre. The fertilizer gives best results when adequate irrigation water is applied to make the nutrients constantly available.

Dry farmed safflower needs about 20 to 50 pounds of nitrogen providing rainfall or supplement irrigation is sufficient to supply 16 to 18 acre-inches of available water.

## IRRIGATION:

Safflower will use 30 to 44 acre-inches

SAMPLE COSTS TO PRODUCE SAFFLOWER IN KERN COUNTY - 1976

Production data: Yield 1.25 tons/acre. Labor \$ 4.30 and \$ 3.90 per hour including Social Security, compensation insurance and fringe benefits. Crawler tractor, 80 h.p., fuel and repairs \$ 7.05, wheel 80 h.p. tractor \$ 3.60, disk repairs \$ 1.90

David R. Woodruff, Kern County Farm Advisor

Operation	Hours Per Acre	Cost Per Acre			Total
		Labor	Fuel and repairs	Materials Kind and Quantity Cost	
<u>Land Preparation</u>					
Disc 2 times	.75	\$ 3.25	\$ 6.70		\$ 9.95
Landplane	.50	2.15	3.50		5.65
Fertilize - custom				45# P <sub>2</sub> O <sub>5</sub> @ .22, 125# N @ .25 Application \$ 2.00	\$ 43.15 43.15
List	.20	.85	1.40		2.25
Total Land Preparation		\$ 6.25	\$ 11.60	\$ 43.15	\$ 61.00
<u>Cultural Costs (Growth Period)</u>					
Plant - 2 men	.6	\$ 4.90	\$ 3.50	Seed: 15# @ 45¢/#	\$ 6.75
Weed control	.75	3.25	3.80	Herbicide	7.00
Irrigation 7 times	8.0	31.20	8.00	Water: 3 ac. ft. @ \$11	72.20
Total Growing Costs		\$ 39.35	\$ 15.30		\$ 45.75
<u>Harvest Costs</u>					
Combine - custom				\$10.00/ac. + 40¢ cwt.	\$ 20.00
Haul				\$2.80/ton - 50 miles	4.75
Total Harvest Costs					\$ 24.75
Total Cash Cost Per Acre					\$ 187.10
<u>Cash Overhead Costs</u>					
Land rent - 12 months basis				20% of 1.25 tons @ \$300/ton	\$ 75.00
Management (miscellaneous, office, etc.)				6% of growing & harvest cost	11.25
Total Cash Overhead Costs					\$ 86.25
<u>Investment</u>					
Equipment	Per Acre		Annual Depreciation	Interest 9%	
	\$ 250.00		\$ 25.00	\$ 11.25	
Total Investment					\$ 36.25
TOTAL COST PER ACRE					\$ 309.60

The costs of production in any agricultural enterprise will vary considerably from ranch to ranch. The input and cost data in this booklet are sample costs. ABOUT THESE COST DATA - - - They are intended to be used only as educational guides in assisting you to appraise and plan your own crop and livestock program.

These cost data do not represent industry averages.

per year. For best results, the soil profile should be full at planting time and the safflower not allowed to stress up through flowering since stressing tends to increase the amount of root rot.

### WEED CONTROL:

The weed control problem in most safflower fields can be minimized by only growing the crop on relatively clean fields. If planted at optimum time, the safflower will outgrow most of the weeds. During stand establishment, weeds are easily controlled by cultivation, including harrowing. There have been many herbicides tested for weed control in safflower. For current guide lines, consult the most recent issue of University of California "Weed Control Recommendations".

### INSECT AND DISEASES:

Safflower is attacked by many insects but yields are seldom affected unless high infestations are present for extended periods of time. Lygus bugs and western flower thrips are usually the most troublesome ones. One must consider the pest control problem in nearby cotton and alfalfa seed fields for the need to control these.

#### Phytophthora Root Rot

Phytophthora root rot is a serious disease of surface irrigated safflower. Very severe infections occur in nonresistant varieties after irrigation of fields allowed to stress from lack of water. There are no commercial varieties immune, but differences do exist in tolerances. Gila, US 10 and several commercial varieties have shown good tolerance to root rot, but even with tolerant varieties, they should not be allowed to stress from lack of water before irrigating.

## Verticillium Wilt

A potentially serious disease of safflower is Verticillium wilt. The organism is favored by cool, clay textured soils, high in nitrogen and moisture. All present public varieties are susceptible. Progress has been made in developing resistant lines and some commercial companies may soon provide these to growers. Control measures include crop rotation with nonsusceptible crops and do not plant seed from diseased fields. It is advisable not to rotate cotton and safflower on fields known to be heavily infected with Verticillium.

### HARVEST:

In general, safflower may be harvested when the leaves and heads become dry and brown. For safe storage, seed moisture must be less than eight percent.

### - - - ACKNOWLEDGMENT - - -

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