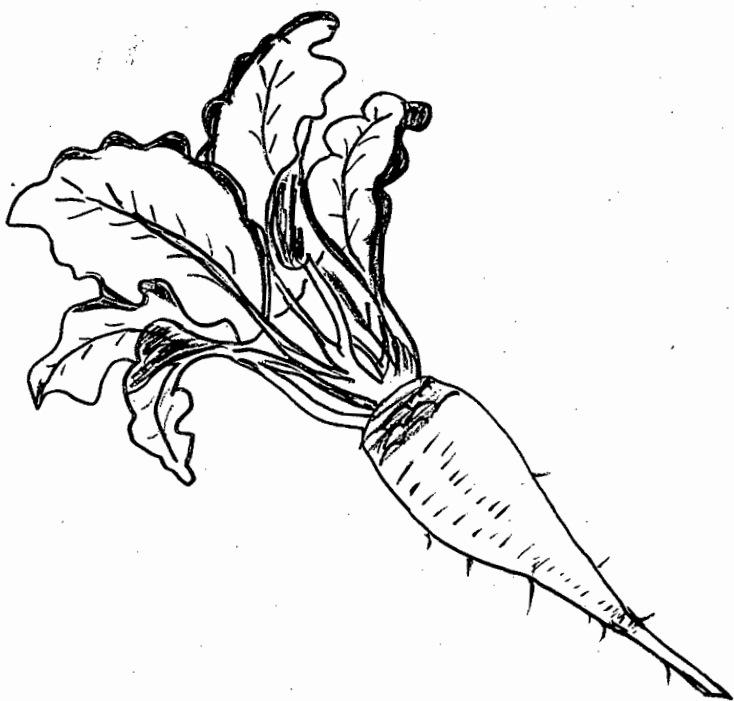


SG-VS-66-2

# SUGAR BEETS

## COSTS & GENERAL HINTS ON PRODUCTION



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UC Cooperative Extension

COSTS & GENERAL HINTS ON SUGAR BEET PRODUCTION  
IN  
KERN COUNTY

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SOIL REQUIREMENTS:

Soils that are adapted to cotton, alfalfa and other deep rooted crops are suitable for sugar beets. The roots of sugar beets will penetrate 5 to 6 feet into the soil; therefore, a deep, well drained soil is preferred. Sugar beets have a high degree of tolerance to saline soil conditions.

PREPARATION OF SEED BED:

The seed bed should be firm and free of weeds. Planting sugar beets after a barley crop should be avoided because of the volunteer barley which creates a severe weed problem. Most growers depend upon rainfall for germination and emergence of the young beet plants. Sugar beets in Kern County are usually planted on 30 inch single row beds; however, some plantings are on 40 inch double row beds.

PLANTING:

Best planting dates are late December and early January. Fall beets are planted in September and early October. Fall planted beets should have considerable growth before frost or freezing weather occurs.

Planting seed is supplied by the sugar companies at a price specified in the contract. If a grower decides to plant in the fall, sugar beets of a bolting resistant variety should be used.

Planting rates usually range from 4 to 6 pounds of seed per acre, and should not be planted over one inch deep.

## THINNING:

Beets generally are thinned when they have from 2. to 6 true leaves. Spacing of the beets in 30 inch single row beds should be in the range of 160 to 200 beets per 100 feet of row. This would be comparable to 6 to 8 inch spacings. Tests have shown that spacings from 4 inches up to 10 inches have little effect upon yields. If possible, gaps larger than 12 inches should be avoided. On 40 inch double row beds, 140 to 160 plants per 100 feet of row is best.

For mechanical thinning a full uniform stand is needed for a successful operation.

## FERTILIZATION:

Nitrogen has been shown to be one of the principal factors affecting the yield and sugar content of sugar beets. The lack of adequate nitrogen may result in lowered yields while excess nitrogen may be the reason for low sugar content.

The crop history of a field may influence the amount of fertilizer needed. In general, 80 to 120 lbs. of actual nitrogen should be applied.

Research work in Kern County has shown that beets high in nitrogen at harvest results in lowered sugar content. This work also has shown that sugar percentage does not increase when plants are low in nitrogen longer than 3 weeks prior to harvest; consequently, growers should apply enough nitrogen to insure good yields and maximum sugar percentage.

## IRRIGATION:

Sugar beets will use from 3 to 3-1/2 acre feet of water. The number of irrigations will vary from field to field depending on soil type. Fine textured soils hold more available moisture for the plants than do

*A. J. Reed*

SAMPLE COSTS TO PRODUCE SUGAR BEETS IN KERN COUNTY - 1966

Production data: Yield, 21 tons. Labor @ \$1.75 and \$1.40 per hour including social security and compensation insurance.

Operation	Hours Per Acre	Cost Per Acre				Total
		Labor	Fuel and repairs	Materials Kind and Quantity	Cost	
<u>Cultural costs</u>						
Land preparation	2.5	\$ 4.38	\$ 5.00			\$ 9.38
List	.5	.88	.80			1.68
Plant and fertilize, 2 men	.6	2.10	1.80	Seed, 3 lbs. @ \$1.00	\$ 3.00	6.90
				100 lbs. N @ 11¢	11.00	11.00
Thin, contract		12.50				12.50
Weed 2 times		16.00				16.00
Irrigate 8 times	18.0	25.20	2.00	Water, 3 feet @ \$6.00	18.00	45.20
Cultivate 3 times	1.6	2.80	2.10			4.90
Miscellaneous		3.50	2.00			5.50
Total Cultural Costs		\$67.36	\$13.70		\$ 32.00	\$113.06
<u>Harvest costs</u>						
Dig				21 tons @ \$1.35	\$ 28.35	\$ 28.35
Haul				21 tons @ \$1.00	21.00	21.00
Total Harvest Costs					\$ 49.35	\$ 49.35
<u>Cash overhead</u>						
Miscellaneous, office, etc.					\$ 9.30	\$ 9.30
Taxes					2.00	2.00
Rent				20% of 21 tons @ \$12.20	51.25	51.25
Total Cash Overhead					\$ 62.55	\$ 62.55
Total Cash Costs		\$67.36	\$13.70		\$143.90	\$224.96
Management - 5% of 21 tons @ \$12.20						\$ 12.80
<u>Investment</u>						
Equipment	Per Acre	\$125.00		Annual Depreciation	Interest	
				\$12.50	\$3.75	
Total Investment		\$125.00		\$12.50	\$3.75	\$ 16.25
TOTAL COST PER ACRE						\$254.01
COST PER TON @ 21 TON YIELD						\$ 12.01

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. They are intended to be used only as educational guides in assisting you to appraise and plan your own crop and livestock program.

ABOUT THESE COST DATA--

These cost data do not represent industry averages.

coarse textured soils. Therefore, fine textured types of soils may require less numbers of irrigations but will need more water each irrigation than do the sandier soils. Sugar beets should not be allowed to suffer for lack of available moisture. When plants wilt, yield and sugar content may be reduced.

#### SUGAR PERCENTAGE:

The average sugar percentage of Kern County beets is approximately 14%. This is somewhat lower than other areas of the State of California. Higher nighttime temperatures in Kern County contribute to this condition. These high nighttime temperatures are conducive for utilization of carbohydrates for plant growth rather than for conversion to sugar and storage.

#### INSECTS AND DISEASES:

Young sugar beet seedlings are very susceptible to certain fungi organisms that live in the soil. These fungi are responsible for such seedling diseases as damping-off and seed rot. Seed treatment with a desirable fungicide offers protection against these organisms.

#### Curley Top:

The Curley Top virus disease is transmitted by the beet leaf hopper. Curley Top can be serious unless Curley Top resistant varieties of sugar beets are planted.

#### Beet Mosaic:

Beet Mosaic becomes apparent with weather conditions which favor the build-up of large aphid populations. This disease has not been of too much economic importance in Kern County.

## Virus Yellows:

Virus Yellows has become quite important in Kern County since 1954. This virus is well known on the European Continent and the British Isles.

Early infection of the sugar beet plants result in a greater loss of yield than when infection occurs in the latter portion of the growing season. The virus is spread by the Green Peach aphid. The sugar beet free period has offered some relief from the damages of this disease.

## Southern Sclerotium Rot:

This fungus attacks the roots causing severe root rot and eventual death of the plant. The disease produces a showy cottony growth of fungus on the surface of the beet. Fruiting bodies of the fungus resemble mustard seed and are formed in great numbers on the fungus.

Control is obtained by rotation with non-susceptible crops for a period of two to four years.

## Root Knot Nematode:

Root knot nematode is a serious pest to sugar beets. Soil fumigation will offer good protection. A grower should not plant beets on known nematode infested land.

Insects, other than the Green Peach aphid, are not too great an economic problem in sugar beets.

## HARVEST:

Most sugar beets are harvested by contract with custom operators who furnish their own equipment.