

SUGAR BEETS

Yields

Since 1963, the average yield of sugar beets for Ventura County has been over 25 tons per acre. Since 1966, it has been over 30 tons per acre. Yields of 25 and 35 tons per acre are used in this sample to demonstrate the effect of yield on cost per ton.

Varieties and Seed

Decisions regarding varieties and seed are made by the sugar company. Breeding programs of the United States Department of Agriculture and sugar companies assure a steady improvement in varieties and seed types.

Soil and Climate

All of the level irrigated land in Ventura County and the climate that goes with it is suitable for sugar beet production. The acreage of sugar beets has been limited by the demand for land by more intensive and high income crops. Recent price increases have improved the ability of this crop to pay high land rent.

When to Plant and Harvest

Most sugar beet fields are planted between December 1 and March 1. Harvesting usually begins around the middle of August and continues throughout September. Because the date of harvesting of a sugar beet crop is not critical, it is not necessary to schedule plantings, but harvesting is scheduled so as to meet the steady demand for sugar beets by the sugar factory and to fit the capacity of the local sugar beet dump where beets are freed of some dirt and trash and loaded on railroad cars.

Planting, Cultivation, and Weed Control

All sugar beets here are planted two rows to a standard vegetable bed (40-inch centers). There is an increasing acreage planted by precision planting in which single seeds are dropped about 2 to 2.5 inches apart. These fields may be mechanically thinned or hand thinned with long-handled hoes. Because of the ability of sugar beets to adapt themselves to a wide range of spacing, production is satisfactory whether single beet plants are spaced at 6 inches or 16 inches and a few doubles can be tolerated in what might be called a satisfactory stand. When conditions for emergence are good, and when seed of a high germination percentage can be used, planting to stand by dropping a seed every 4.5 to 5 inches is successful. A local trial and numerous trials elsewhere show that the highest yields can be expected from spacings of 6 to 12 inches. Yield reductions attributable to deviations from this spacing are about the same for 4-inch spacings and 18-inch spacings.

Selective herbicides available and recommended today appreciably reduce the cost of weed control but they leave some weeds to be taken out by cultivation and hoeing. Most weed control chemicals have been applied preemergence with incorporation. Recent observations have found post-emergence application of one or more herbicides effective. However, results depend on very careful application and timing.

Fertilizing

In most fields it is a good practice to apply 125 pounds of nitrogen per acre before planting or at planting time. This may or may not be sufficient for the whole season. Plant tissue analysis can be used to a good advantage in determining whether additional nitrogen is needed. Mid-season application of nitrogen is critical because if the sugar beet plants do not exhaust the nitrogen supply before harvest, the sugar percentage tends to be low and nitrate nitrogen in beets interferes with processing. If mid-season nitrogen is needed, apply 80 pounds of nitrogen per acre just before an irrigation. Sampling for tissue analysis and fertilizing need to be correlated with time of irrigation.

Irrigation

Sugar beets have deep, vigorous root systems and when their leaves are fully developed, they utilize large quantities of water. Because sugar beets are planted during the rainy season it may not be necessary to start irrigating them until April or May. Irrigation should be timed so as to keep the crop growing vigorously until shortly before harvest. Intervals between irrigations may range from two to four weeks. Little or no harm is done allowing the drier portions of the field to show some wilting, but wilting should be taken as a signal to irrigate. Because by the time sugar beets show symptoms of drought, they have probably extracted water from the soil to a depth of 4 feet or more, it is important to allow water to remain in the furrow long enough to replace moisture to a depth of 3 or 4 feet.

Pests and Diseases

It is advisable to treat most sugar beet fields for root-knot nematode before planting. Crop rotation of four years or more between sugar beet crops will usually keep sugar beet nematodes under control; but if cabbage or any other cole crop is planted in this interval, the loss from sugar beet nematodes can be serious.

Occasionally, it is advisable to treat sugar beets for cutworms and other insect pests.

Powdery mildew has recently become a sugar beet disease that needs to be controlled. After the leaf area is well developed, fields should be examined weekly and a fungicide applied by spraying or dusting as soon as the disease is found in a few spots. To be effective, fungicide treatments must keep the new foliage almost free of the disease. Several applications may be needed.

University of California recommendations for pest and disease control are available at the farm advisors office.

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CASH FLOW - EXCLUDING LAND RENT AND TAXES

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Start							
\$230				Grow			
				\$130			
						Harvest	
						\$120	

Ventura 1275

SUGAR BEETS

Yield: 35, 30, & 40 T/A

Land Use: 8 Months

Plant: November through March

Harvest: August through October

	Tractor	Labor Per Acre		Machinery	Contract & Materials	Total Per A.
		Hrs	Cost			
CULTURAL CASH COSTS						
Establishing Stand		6.82	\$29.58	\$15.50	\$ 14.83	\$ 59.91
Preplant Fertilizer			Contract	125 Lb N @ \$.20/lb	25.00	25.00
Fumigate				20 Gal. DD	55.00	55.00
Seed				6 Lbs Pelleted@1.55	9.30	9.30
Apply Ammonia & Nematocide			Contract		6.75	6.75
Herbicide			Contract		40.00	40.00
Cultivate 3 x	W 50	.75	3.49	3.33		6.82
Hoe 1 x		10.00	37.00			37.00
Fertilize, Sidedress	WD 30	.40	1.86	.96	80 Lb @\$.27 Lb.	21.60 24.42
Disease Control 2 x			Contract		25.00	25.00
Irrigate 4 x		6.00	24.30	1.00	2 A-Ft Wtr \$10	20.00 45.30
Disc & Roll Refuse 2 x	W 80	.36	1.67	2.66		4.33
Total Cultural Cash Costs		24.33	\$97.90	\$23.45	\$217.48	\$338.83

CASH OVERHEAD

Land Rent			\$25.00 per acre-month x 8 months			\$200.00
Taxes on Machinery	@		.29 per acre-month x 8 months			2.32
Supervision	@		3.50 per acre-month x 8 months			28.00
General Expense	@		6% of cultural cash costs			20.33
Total Cash Overhead						\$250.65
Total Cash Costs Except Harvesting						\$589.48

HARVESTING, PACKAGING, AND SELLING CASH COSTS

Dig and Load	Contract		35 T/A @ \$1.50			\$ 52.50
Haul	Contract		35 T/A @ 1.75			61.25
Total Harvesting, Packaging, and Selling Cash Costs						\$113.75
Total Cultural, Overhead, Harvesting, Packaging, and Selling Cash Costs						\$703.23

INVESTMENT OVERHEAD

Depreciation:	Tractor & Machinery	\$13.78	Transportation & Shop	\$6.08	\$ 19.86
Interest:	" "	6.27	" "	1.60	7.87
Total Investment Overhead					\$ 27.73
Total Cost Per Acre @ 35 T/A					\$730.96
Total Cost Per Acre @ 30 T/A					\$714.71
Total Cost Per Acre @ 40 T/A					\$747.21

Total Cost Per Ton @ 35 T/A \$20.88
 Total Cost Per Ton @ 30 T/A 23.82
 Total Cost Per Ton @ 40 T/A 18.68

Acres, Yields, and Prices as Reported by
 Ventura County Agricultural Commissioner

Year	Acres	T/A	\$/Ton	\$/A
1971	3250	31.00	17.07	529
1972	2712	32.65	16.70	545
1973	1302	34.96	18.59	650
1974	370	33.14	56.80	1882

Yields

Over the past 10 years yields of Fordhook lima beans for freezing have ranged from 2,920 pounds per acre in 1971 to 4,280 pounds per acre in 1970. Yields of 4,000, 5,000, and 6,000 pounds per acre are used in this sample.

Varieties and Seed

Except for a small acreage of baby lima beans, the entire acreage of green lima beans grown for freezing here is of the concentrated Fordhook variety. One line of seed of this variety is certified by the California Crop Improvement Association. Other lines, which for practical purposes are the same, are also available. The usual procedure is for the processor to purchase the seed needed for the acreage he wants. Growers contracting to grow green lima beans are supplied the seed and charged for it by the processor.

Soil and Climate

The climate of the whole Oxnard plain and most of the soil of this area are suitable for production of green lima beans. The mild climate of this area makes green lima beans one of the most reliable vegetable crops.

When to Plant and Harvest

Planting dates for the green lima beans are carefully scheduled by processor fieldmen so as to have an even flow of product to the freezing plant throughout the harvest season. Planting should proceed at a rate of approximately .75 acres per day per acre of harvesting capacity. Predicted harvest dates are shown on page 16. When to harvest is determined by processor fieldmen. At harvest time, yields of Fordhook beans are increasing at the rate of about 200 pounds per acre per day. Soon after a small percentage of beans reach the pale stage, quality, as determined by percentage of pale beans, declines rapidly.

Planting, Cultivating, and Weed Control

All Fordhook limas are planted with a Ventura-type planter which causes a minimum of seed injury, and, with its simple furrow opener and no press wheel, provides ideal conditions for germination and emergence. It is a common practice to plant 140 or more pounds of seed per acre. Cultivation begins soon after the primary leaves are full size in order to throw some soil over small weeds in the row. Chemical weed control has been used successfully during the past few years.

Fertilizing

Although green lima beans grown in rotation with winter vegetable crops produce a highly satisfactory crop without fertilizer, the application of 100 pounds of nitrogen per acre prior to planting, or 60 pounds of nitrogen per acre side-dressed before the first irrigation may produce a small increase in yield that may more than pay for the fertilizer.