

GREEN LIMA BEANS

Yields

Over the past six years yields of Fordhook lima beans for freezing have ranged from 3,800 lb/A in 1966 to 4,100 lb/A in 1967. Yields of 4,000 lb/A are used in this sample.

Varieties and Seed

Except for a small acreage of baby lima beans grown for freezing, the entire acreage of green lima beans 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 nearly 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 the 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 here one of the most reliable of crops.

When to Plant and Harvest

Planting dates for the green lima beans are carefully scheduled by processor field men 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 18. When to harvest is determined by processor field men. At harvest time yields of Fordhook beans are increasing at the rate of about 200 lbs. per acre per day and soon after a small percentage of beans reach the pale stage quality, as determined by percentage of beans pale, 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 condition for germination and emergence. 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 lbs. of nitrogen per acre prior to planting, or 60 lbs. of nitrogen per acre side-dressed before the first irrigation may produce a small increase in yield that may pay for the small cost of the fertilizer.

Irrigation

Unless the soil at the time the seedbed is being prepared is well filled with moisture to a depth of 5 feet, pre-irrigation is advisable. Most fields are irrigated once or twice with the final irrigation about 2 weeks from harvest time.

Pest and Disease Control

Fields used for growing green lima beans are fumigated for nematode control either annually or every second or third year. This depends on other crops being grown on the land and experience of nematode damage. Fordhook bean seed is treated for control of fungi and insects that interfere with emergence. Aphids, lygus bugs, and corn earworms are the principal insect pests for which treatments are made when field observations indicate it is advisable to do so. Lygus bugs may interfere with setting of the crop but this is unusual and the great concern is for damage by the lygus bug to the growing beans. Each year almost every field is treated at least once for lygus bug control. Late in the season fields must be watched carefully for damage by corn earworms which enter the pods and destroy or damage the seed.

PREDICTED HARVEST DATES FOR CONCENTRATED FORDHOOK GREEN
LIMA BEANS FOR FREEZING IN VENTURA COUNTY

The tables on the back of this page were prepared from data supplied by Gino Lorenzi of Oxnard Frozen Food Co-op and processed by Dr. Thomas M. Little, University of California Extension Biometrician.

These predicted harvest dates are based on planting and harvest records for 326 plantings over a 3-year period of 1962, '63, and '64, and in three areas of the Oxnard Plain. These areas are: west (west of Oxnard), east (east of Oxnard and north of Highway 1), and southeast (south of Highway 1 and east of Hueneme). For each of the 3 years there were approximately fifty plantings in the east area and thirty each in the southeast and west areas. All fields were harvested within a suitable range of maturity for freezing. The fact that this is a range that might cover plus or minus one or two days from the best harvest date contributes somewhat to variability of the data.

Other factors contributing to the variability of the data and thus reducing the probabilities in the second table are weather within each season, weather for each season, and location within each area. Cultural practices and soil conditions probably influence harvest date less than climate and weather.

The table below shows the effects of weather for each year on harvest dates and suggests that these figures be revised annually until they are based on several more years of records.

AVERAGE EFFECT OF YEARS ON LENGTH OF SEASON OF FORDHOOK LIMA BEANS
THREE LOCATIONS IN VENTURA COUNTY, CALIFORNIA

YEAR	LOCATION		
	EAST	SOUTHEAST	WEST
1962	+ 1.3 days	+ 3.6 days	+ 3.2 days
1963	- 1.7 days	- 4.7 days	- 5.4 days
1964	+ .4 days	+ .5 days	+ 1.7 days

Because Dr. Little has found that the time between planting and harvesting is shortening at a rather uniform rate from the beginning to the end of the planting season, he has suggested uniform planting schedules for planting dates between April 20 and June 30. These are: for harvesting 10 acres a day, plant 7.6 acres a day in the east area, 7.5 acres a day in the southeast area, and 7.9 acres a day in the west area.

PREDICTED HARVEST DATES FOR CONCENTRATED FORDHOOK
GREEN LIMA BEANS IN THREE AREAS IN VENTURA COUNTY

These predicted harvest dates are based on planting and harvest records for 326 plantings over a 3-year period of 1962, '63, and '64 and in 3 areas of the Oxnard Plain. These areas are: west (west of Oxnard), east (east of Oxnard and north of Highway 1) and southeast (south of Highway 1 and east of Hueneme).

<u>PLANTING</u>		<u>HARVEST DATES</u>		<u>PLANTING</u>		<u>HARVEST DATES</u>	
<u>DATE</u>	<u>EAST</u>	<u>S. E.</u>	<u>WEST</u>	<u>DATE</u>	<u>EAST</u>	<u>S. E.</u>	<u>WEST</u>
APR 20	AUG 5	AUG 10	AUG 11	MAY 26	SEP 1	SEP 6	SEP 9
APR 21	AUG 6	AUG 11	AUG 12	MAY 27	SEP 2	SEP 7	SEP 9
APR 22	AUG 6	AUG 11	AUG 12	MAY 28	SEP 3	SEP 7	SEP 10
APR 23	AUG 7	AUG 12	AUG 13	MAY 29	SEP 4	SEP 8	SEP 11
APR 24	AUG 8	AUG 13	AUG 14	MAY 30	SEP 4	SEP 9	SEP 12
APR 25	AUG 9	AUG 14	AUG 15	MAY 31	SEP 5	SEP 10	SEP 13
APR 26	AUG 9	AUG 14	AUG 16	JUN 1	SEP 6	SEP 10	SEP 13
APR 27	AUG 10	AUG 15	AUG 16	JUN 2	SEP 7	SEP 11	SEP 14
APR 28	AUG 11	AUG 16	AUG 17	JUN 3	SEP 7	SEP 12	SEP 15
APR 29	AUG 12	AUG 17	AUG 18	JUN 4	SEP 8	SEP 13	SEP 16
APR 30	AUG 12	AUG 17	AUG 19	JUN 5	SEP 9	SEP 13	SEP 16
MAY 1	AUG 13	AUG 18	AUG 20	JUN 6	SEP 10	SEP 14	SEP 17
MAY 2	AUG 14	AUG 19	AUG 20	JUN 7	SEP 11	SEP 15	SEP 18
MAY 3	AUG 15	AUG 20	AUG 21	JUN 8	SEP 11	SEP 16	SEP 19
MAY 4	AUG 16	AUG 20	AUG 22	JUN 9	SEP 12	SEP 16	SEP 20
MAY 5	AUG 16	AUG 21	AUG 23	JUN 10	SEP 13	SEP 17	SEP 20
MAY 6	AUG 17	AUG 22	AUG 24	JUN 11	SEP 14	SEP 18	SEP 21
MAY 7	AUG 18	AUG 23	AUG 24	JUN 12	SEP 14	SEP 19	SEP 22
MAY 8	AUG 19	AUG 23	AUG 25	JUN 13	SEP 15	SEP 19	SEP 23
MAY 9	AUG 19	AUG 24	AUG 26	JUN 14	SEP 16	SEP 20	SEP 24
MAY 10	AUG 20	AUG 25	AUG 27	JUN 15	SEP 17	SEP 21	SEP 24
MAY 11	AUG 21	AUG 26	AUG 28	JUN 16	SEP 18	SEP 22	SEP 26
MAY 12	AUG 22	AUG 26	AUG 28	JUN 17	SEP 18	SEP 22	SEP 26
MAY 13	AUG 22	AUG 27	AUG 29	JUN 18	SEP 19	SEP 23	SEP 27
MAY 14	AUG 23	AUG 28	AUG 30	JUN 19	SEP 20	SEP 24	SEP 28
MAY 15	AUG 24	AUG 29	AUG 31	JUN 20	SEP 20	SEP 25	SEP 28
MAY 16	AUG 25	AUG 29	SEP 1	JUN 21	SEP 21	SEP 25	SEP 29
MAY 17	AUG 25	AUG 30	SEP 1	JUN 22	SEP 22	SEP 26	SEP 30
MAY 18	AUG 26	AUG 31	SEP 2	JUN 23	SEP 23	SEP 27	OCT 1
MAY 19	AUG 27	SEP 1	SEP 3	JUN 24	SEP 24	SEP 28	OCT 2
MAY 20	AUG 28	SEP 1	SEP 4	JUN 25	SEP 24	SEP 28	OCT 2
MAY 21	AUG 29	SEP 2	SEP 5	JUN 26	SEP 25	SEP 29	OCT 3
MAY 22	AUG 29	SEP 3	SEP 5	JUN 27	SEP 26	SEP 30	OCT 4
MAY 23	AUG 30	SEP 4	SEP 6	JUN 28	SEP 27	OCT 1	OCT 5
MAY 24	AUG 31	SEP 4	SEP 7	JUN 30	SEP 27	OCT 1	OCT 6
MAY 25	SEP 1	SEP 5	SEP 8	JUN 30	SEP 28	OCT 2	OCT 6

	<u>EAST</u>	<u>S. E.</u>	<u>WEST</u>
PROBABILITY OF PREDICTED DAY	9.4%	8.4%	7.7%
PROBABILITY OF PREDICTED DAY + OR - 1	28.0%	24.7%	22.9%
PROBABILITY OF PREDICTED DAY + OR - 2	44.5%	40.0%	37.3%
PROBABILITY OF PREDICTED DAY + OR - 3	59.2%	53.3%	50.4%
PROBABILITY OF PREDICTED DAY + OR - 4	71.0%	65.4%	61.8%
PROBABILITY OF PREDICTED DAY + OR - 5	80.6%	75.1%	71.5%
PROBABILITY OF PREDICTED DAY + OR - 6	87.5%	82.7%	79.4%
PROBABILITY OF PREDICTED DAY + OR - 7	92.4%	88.4%	85.6%
PROBABILITY OF PREDICTED DAY + OR - 8	95.5%	92.5%	90.2%

GREEN LIMA BEANS, FOR FREEZING, 1969

Yield: 4000 lb/A

Land Use: 6 Months

Remarks: Plant: April 25 to June 20

Harvest: August 5 to October 1

	Labor		Cash Costs per Acre		Total per Acre
	Per Hrs.	Acres Cost	Machinery	Contract & Materials	
CULTURAL CASH COSTS		\$	\$	\$	\$
Plow	.68	1.67	2.38		4.05
Disc and roll 2 x	.52	1.27	1.82		3.09
Springtooth harrow 1 x	.16	.39	.56		.95
Furrow	.25	.61	.38		.99
Pre-irrigate	1.25	2.43	.40	½ A-ft. wtr @ \$5 2.50	5.33
Springtooth harrow 2 x	.32	.78	1.12		1.90
Fertilize		Contract:	125 lb/A NH ₃ applied	15.50	15.50
Drag harrow 2 x	.32	.64	1.12		1.76
Fumigate 1 x in 2 yr.		Contract:	(20 gpa DD applied)	18.70	18.70
Plant (2 men)	.60	1.32	.60	Seed 130/ treated 31.85	33.77
Cultivate 3 x	1.20	2.94	2.40		5.34
Irrigate 2 x	2.50	4.88	.80	2/3 A-ft. @ \$5 9.34	9.02
Hoe 1 x	5.00	9.75			9.75
Pest Control 2 x		Contract:		20.00	20.00
Disc & roll refuse 1 x	.26	.64	.91		1.55
Total Cultural Cash Costs		27.32	12.49		91.89
				91.89	131.70

CASH OVERHEAD

Land rent	@ \$14.60 per acre-month x 6	87.60
Taxes on Machinery	@ .24 per acre-month x 6	1.44
Supervision	@ 5.00 per acre-month x 6	30.00
General Expense	@ 2.00 per acre-month x 6	12.00

Total Cash Overhead	@ 21.84 per acre-month x 6	131.04
Total Cash Costs except Harvesting		262.74

HARVESTING CASH COSTS

Harvest with mobile viner and hauling		24.00
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Total Harvest Cash Cost		24.00
Total Cultural and Harvest Cash Cost		286.74

INVESTMENT OVERHEAD

Depreciation	@ \$2.40 per acre-month x 6	14.40
Interest	@ .72 per acre-month x 6	4.32

Total Investment Overhead	@ 3.12 per acre-month x 6	18.72
Total Cost Per Acre		305.46

Total Cost per pound	@ 4000 lb/A	\$.076
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CASH FLOW - EXCLUDING LAND RENT AND TAXES

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

Start
\$95

Grow
\$60

Harvest
\$30

Acres, Yields and Prices Reported by Ventura Co. Agricultural Commissioner

<u>Year</u>	<u>Acres</u>	<u>Lb/A</u>	<u>\$/Lb</u>	<u>\$/A</u>
1962	12,250	4060	\$.084	342
1963	11,200	3820	.087	333
1964	10,500	4000	.086	346
1965	11,294	3840	.081	312
1966	13,000	3800	.077	293
1967	11,650	4120	.082	339
1968	12,600	3920	.090	351