

EQUIPMENT LIST AND OPERATION COSTS FOR A 350 ACRE VEGETABLE FARM, VENTURA COUNTY, 1975

TRACTORS	Working H.P.	Cash Cost/Hr.	Cost New	Hours Per Year	Life, Years	OVERHEAD COSTS				LABOR COSTS				
						DEPRECIATION		INTEREST ✓		Hand	Paid/Hr	Cost/Hr		
						Year	Per Hr	Year	Per Hr					
100 HP WD	80	\$3.50	\$20,000	1,110	11	\$1818	\$1.64	\$ 800	\$.72	Tractor	\$2.95			\$3.70
60 HP CD	40	3.10	25,000	950	15	1923	2.02	1000	1.05	Irrigator	3.70			4.65
65 HP WD***	50	2.25	12,000	800	15	800	1.00	480	.60		3.25			4.05
40 HP WD***	30	1.40	10,000	850	14	714	.84	400	.47					
CASH COSTS PER ACRE														
TILLAGE AND PLANTING	Working H.P.		Acres Per year			Per Year	Per Acre	Per Year	Per Acre	Hr/A	Man	Trac	Mach	Total
Sub Soiler 3 shanks	WD 80	\$ 1,350	350	147	15	\$ 90	\$.26	\$ 54	\$.15	.42	\$1.95	\$1.47	\$.50	\$3.92
Plow 4 - 16" 2 way	WD 80	3,200	700	315	10	320	.46	128	.18	.45	2.09	1.58	.72	4.39
Disc & Roller 13½'	CD 40	7,000	2,100	525	7	1,000	.32	280	.09	.25	1.16	.78	.70	2.64
Disc & Roller 13½'	WD 80		1,000	180			.32		.09	.18	.84	.63	.70	2.17
Landplane 12' x 40'	WD 80	4,000	1,800	468	7	571	.32	160	.09	.26	1.21	.91	.44	2.56
Drag harrow 20'	CD 40	1,000	1,400	238	12	83	.06	40	.03	.17	.79	.53	.10	1.42
Springtooth harrow 20'	CD 40	2,600	1,100	187	12	217	.20	104	.09	.17	.79	.53	.20	1.52
Furrow or cultivate 4 beds	WD 50	400	2,500	625	5	80	.04	16	.01	.25	1.16	.56	.40	2.12
Shape and plant 4 beds	WD 50	5,000	500	175	10	500	1.00	200	.40	.35	2.92✓	.79	.50	4.21
Plant beans 4 rows 30"	WD 30	1,000	200	80	10	100	.50	40	.20	.40	3.34✓	.90	.10	4.34
Furrow for pre-irrigate 13'	WD 30	200	700	140	5	40	.06	8	.01	.20	.93	.28	.10	1.31
Roll beds 4 beds 13'	WD 30	1,400	600	120	10	140	.23	56	.09	.20	.93	.28	.14	1.35
Cultivate beans 4 rows	WD 30	200	400	132	10	20	.05	8	.02	.33	1.53	.46	.10	2.09
Cultivate tomato 3 rows	WD 30	200	300	75	10	20	.07	8	.03	.25	1.16	.35	.10	1.61
Sidedress fertilizer 4 beds	WD 30	2,500	650	240	10	250	.38	100	.42	.40	1.86	.56	.40	2.82
TOTAL, TRACTORS AND IMPLEMENTS		\$ 97,050				\$8,686		\$3,882						
IRRIGATION														
2,000 ft. gated pipe 8"		\$4,500	2,800		7	\$ 643	\$.23	\$ 180	\$.06	1.5	\$6.08	\$.03	\$.20	\$6.33
Irrigation Pipe Trailer		1,200	2,800		10	120	.04	48	.02				.02	
TOTAL, TRACTORS, IMPLEMENTS, & IRRIGATION		\$102,750												
Total Depreciation and Interest, Alloted by Operation						\$9,449		\$4,110						
TRANSPORTATION & SHOP TOOLS														
Pickup (2)		\$ 9,000			5	\$1,800		\$360						
Truck 1-1/2 Ton		7,000			8	875		280						
Shop Tools		3,000			10	300		120						
Tractor Trailer		1,200			15	80		48						
Tool Porter		1,750			15	117		70						
Total Transportation & Shop		\$ 21,950				\$3,172	.76/A.Mo.	\$878	.20/A.Mo.					
Total All Equipment		\$124,700				\$12,621		\$4,988						

* Second hand

✓ One man @ \$3.70/Hr and one @ \$4.65/Hr.

*** With front and rear tool bars

✓✓ 8% of 1/2 of Cost New

TAXES: $\frac{1}{2} \$124,700 \times .02$
 $\frac{4200 \text{ Acre Months}}{12} = \$.29/\text{Acre Month}$

LARGE LIMA BEANS

Lima Beans
Ventura 1475

Yields

The Agricultural Commissioner reports yields that average a little more than 2,000 pounds per acre over the past 6 years. Yields used in this sample are 2,000, 2,500, and 3,000 pounds. These are the kinds of yields expected on good land with good cultural practices. Even with the good prices of the past few years, there is a tendency for dry lima beans to be crowded off the very best land by vegetable crops.

Varieties and Seed

Each year a small percentage of the total seed requirement of Ventura lima beans is produced in a certified seed program of the California Crop Improvement Association. The handling of this seed is closely supervised to insure varietal purity. Much of this certified seed is used for growing uncertified seed the following year. It is good business for bean growers to plant certified seed or to be sure that the seed they use was grown from certified seed.

White Ventura N is the main variety. It is resistant to some types of root-knot nematodes. Westley did well in a trial here a few years ago. It is safe to try. The seed is white and it may be a little larger than white Ventura N.

Soil and Climate

The deep alluvial soils of Ventura County, unless excessively saline, are well suited to the growing of large lima beans. For the best of yield and quality, this crop requires a mild summer climate. The climate of the Oxnard plain and of areas extending inland to Santa Paula and almost to Moorpark meets the requirements of this crop.

When to Plant and Harvest

The lima bean is a warm-weather crop. Planting before the 25th of April is not advisable and the ideal time for planting is between May 1 and May 10.

Beans should be cut at a time when nearly all the beans are fully developed but while some of the pods are still green. Beans planted between May 1 and 10 are usually ready to cut soon after the 1st of September and ready to thresh two or three weeks after cutting.

Planting, Cultivation, and Weed Control

Seedbed preparation for planting Ventura limas involves making a smooth seedbed free of compaction in the top 5 inches and with a shallow dry mulch on the surface. This is essential for the proper operation of the Ventura planter which has a simple shovel furrow opener and depends on loose soil falling into the furrow for covering the seed. No pack wheel is used.

Cultivation begins soon after the beans are out of the ground and tall enough so that weeds in the row can be covered in the first cultivation. Under good cultural practices weeds are well controlled by cultivation. Some growers mix an herbicide with the soil in the process of preparing the seedbed.

Fertilizing

Although most land used for growing lima beans will produce a satisfactory crop without fertilizing, small responses to 100 pounds of nitrogen applied before planting can be expected, especially in sandy soil where the crop is to be irrigated twice.

Irrigation

Soil with a high moisture-holding capacity on the Oxnard plain will produce a satisfactory crop of large lima beans without irrigation if winter rains or pre-irrigation has wet the soil to a depth of 5 feet or more. However, most land will produce a better crop with one or two irrigations. Irrigation water is applied in small furrows in alternate row spaces.

Pest and Disease Control

Root-knot nematode, Rhizoctonia stem canker, Lygus bugs, aphids, and two-spotted mites are the principal diseases and pests of large lima beans. On land used to grow beans every year, soil fumigation for nematode control may be necessary only every second or third year, but where other crops susceptible to root-knot nematode are grown either in the winter or in summer rotation with the beans, annual fumigation may be advisable.

Except where Rhizoctonia is severe, seed treatment alone gives practical control.

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

Special Machinery

Item	Cost			Dep. /A	Int. /A	Cash Cost/A	Labor /A
	New	A/Yr	Life				
Bean Knives	\$ 460	100	15	\$.31	\$.18	\$.18	\$1.34
Side Delivery Rake	1200	100	20	.60	.48	.13	1.34
Total	1660			\$.91	\$.66	\$.31	\$2.68

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CASH FLOW - LARGE LIMA BEANS EXCLUDING LAND RENT AND TAXES

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

Apr	May	June	July	Aug	Sept	Oct	Year	Acres	Cwt/A	\$/Cwt	\$/A
							1965	10,700	18.4	13.50	247
							1966	9,200	16.8	18.00	303
							1967	11,500	17.2	18.00	310
							1968	9,600	19.0	14.00	267
							1969	7,770	20.0	12.00	240
							1970	4,180	20.4	13.00	265
							1971	3,880	13.6	19.00	260
							1972	3,500	20.6	30.00	617
							1973	5,059	27.0	37.00	1,001
							1974	7,800	20.6	24.50	503

LARGE LIMA BEANS

Yield: 20 Cwt, 25 Cwt, and 30 Cwt/A

Land Use: 7 Months

Plant: May

Harvest: September and October

	Tractor	Labor Per Acre		Machinery	Contract & Materials	Total Per A.
		Hrs	Cost			
CULTURAL CASH COSTS						
Plow 4 - 16	W 80	.42	\$1.95	\$ 1.97		\$ 3.92
Disc & Roll 2 x	C 40	.50	2.32	2.96		5.28
Furrow for irrig.	W 30	.20	.93	.38		1.31
Pre-irrigate		1.50	6.08	.25	Wtr .5 A-Ft @ \$10	\$ 5.00 11.33
Fumigate 1 x in 2 yr.			Contract		1/2 of \$61.50	30.75 30.75
Drag Harrow 3 x	C 40	.51	2.37	1.89		4.26
Springtooth Harrow 2 x	C 40	.34	1.58	1.46		3.04
Plant 4 rows	W 30	.40	3.34*	1.00	Seed 90 Lb. @ \$21.50	19.35 23.69
Cultivate 4 rows 3x	W 30	.99	4.60	1.68		6.28
Irrigate 1 x		1.50	6.08	.25	Wtr 1/3 A-F @ \$10	3.33 9.66
Hoe 1 x		5.00	18.50			18.50
Pest Control			Contract			20.00 20.00
Disc & Roll Refuse 2x	W 80	.36	1.67	2.66		4.33
Total Cultural Cash Costs		12.12	\$49.42	\$14.50		\$78.43 \$142.35

CASH OVERHEAD

Land Rent		\$25.00 per acre-month x 7 months	\$175.00
Taxes on Machinery	@	.29 per acre-month x 7 months	2.03
Supervision	@	3.50 per acre-month x 7 months	24.50
General Expense	@	6% of cultural and harvest costs	8.27

Total Cash Overhead			\$209.80
Total Cash Costs Except Harvesting			\$352.15

HARVESTING, PACKAGING, AND SELLING CASH COSTS

	Tractor	Hr.	Labor	Machinery	
Cut	W 30	.30	\$1.40	\$.18	\$ 1.58
Windrow	W 30	.30	1.40	.13	1.53
Thresh and Haul, Contract	@	\$1.25/Cwt	25 Cwt		31.25
Cleaning and Warehousing	@	1.67/Cwt	25 Cwt		41.75

Total Harvesting, Packaging, and Selling Cash Costs					\$ 76.11
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Total Cultural, Overhead, Harvesting, Packaging, and Selling Cash Costs					\$428.26
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INVESTMENT OVERHEAD

Depreciation		Based on Tractor & Machinery Use	\$ 10.27
Interest		Based on Tractor & Machinery Use	4.86

Total Investment Overhead			\$ 15.13
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Total Cost Per Acre		2,500 Lb.	\$443.39
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Total Cost Per Acre		2,000 Lb.	\$428.79
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Total Cost Per Acre		3,000 Lb.	\$457.99
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Total Cost Per Pound	@ 2,500 Lb/A	\$.177
Total Cost Per Pound	@ 2,000 Lb/A	.214
Total Cost Per Pound	@ 3,000 Lb/A	.153

* 1 man @ \$4.65/Hr., 1 man @ \$3.70/Hr.

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

GREEN LIMA BEANS FOR FREEZING

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.

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, a few twice, with the final irrigation about two 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. A new systemic fungicide provides sufficient control of Rhizoctonia stem canker so that most growers have stopped applying a granular fungicide in the planter furrow to control this disease.

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.

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

Acres, Yields, and Prices as Reported

GREEN LIMA BEANS - CASH FLOW

by Ventura County Agricultural Commissioner

EXCLUDING LAND RENT AND TAXES

<u>Year</u>	<u>Acres</u>	<u>Lb/A</u>	<u>\$/Lb</u>	<u>\$/A</u>	Mar.	Apr.	May	June	July	Aug.
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						
1969	10,100	4180	.082	345						
1970	6,300	4280	.087	373						
1971	7,430	2920	.089	260						
1972	8,950	4240	.110	466						
1973	10,487	3940	.123	485						
1974	9,141	4200	.155	651						

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

The tables below were prepared from data supplied by Gino Lorenzi of Oxnard Frozen Food Co-op and processed by Dr. Thomas M. Little, former 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.

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

	EAST	S.E.	WEST
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%

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: 7.5 acres a day in the southeast area, and 7.9 acres a day in the west area.

GREEN LIMA BEANS FOR FREEZING

Yields: 5,000, 4,000, and 6,000 Lb/A

Land Use: 6 Months

Plant: Late April to June 25

Harvest: August 1 to October 10

	Tractor	Labor Per Acre		Machinery	Contract & Materials	Total Per A.
		Hrs.	Cost			
CULTURAL CASH COSTS						
Subsoil ½ x	W 80	.21	\$.98	\$.99		\$ 1.97
Plow	W 80	.45	2.09	2.30		4.39
Disc & Roll 2 x	C 40	.50	2.32	2.96		5.28
Landplane 2 x	W 80	.52	2.42	2.70		5.12
Springtooth Harrow 1x	W 80	.17	.79	.73		1.52
Furrow for Irrig.	W 30	.20	.93	.38		1.31
Pre-irrigate		1.50	6.08	.25	½-A-Ft Wtr @\$10 \$ 5.00	11.33
Drag Harrow 3 x	C 40	.51	2.37	1.89		4.26
Springtooth Harrow 2x	C 40	.34	1.58	1.46		3.04
Fumigate Soil		Contract		Once in 2 years 1/2 of \$61.50	30.75	30.75
Fertilize		Contract		100 Lbs. N Applied	25.16	25.16
Plant 4 rows	W 30	.20*	3.34*	1.00	150 Lbs. Seed @ \$45 67.50	71.84
Cultivate 3 x	W 30	1.00	4.65	1.68		6.33
Irrigate 1 x		1.50	6.08	.25	1/3 A-Ft Wtr @ \$10 3.33	9.66
Hoe		6.00	22.20			22.20
Pest Control		Contract			25.00	25.00
Disc & Roll Refuse 2x	W 80	.36	1.67	2.66		4.33
Total Cultural Cash Costs		13.66	\$57.50	\$19.25	\$156.74	\$233.49
CASH OVERHEAD						
Land Rent			\$25.00 per acre-month x 6 months			\$150.00
Taxes on Machinery	@		.29 per acre-month x 6 months			1.74
Supervision	@		5.30 per acre-month x 6 months			31.80
General Expense	@		6% of cultural cash costs			14.01
Total Cash Overhead						\$197.55
Total Cash Costs Except Harvesting						\$431.04
HARVESTING, PACKAGING, AND SELLING CASH COSTS						
Harvesting by Freezer Plant					No Charge	
Total Cultural and Overhead Cash Costs						\$431.04
INVESTMENT OVERHEAD						
Depreciation:	Tractor & Machinery		\$15.85	Transportation & Shop	\$4.56	\$ 20.41
Interest:	"	"	7.16	"	1.20	8.36
Total Investment Overhead						\$ 28.77
Total Cost Per Acre @ 5,000 Lb/A						\$459.81
Total Cost Per Pound @ 5,000 Lb/A				\$.092		
Total Cost Per Pound @ 4,000 Lb/A				.115		
Total Cost Per Pound @ 6,000 Lb/A				.077		

* 1 man @ \$4.65/Hr. 1 man @ \$3.70/Hr.

BROCCOLI FOR FREEZING

Yields

The average yield of broccoli for freezing as reported by the Agricultural Commissioner for the past 13 years has been between 3,840 and 7,140 pounds per acre. For this sample cost yields of 5,000, 6,000, and 7,000 pounds per acre used. This is for broccoli trimmed to a 5-inch cut.

Varieties and Seed

Green Duke, a hybrid that matures uniformly is the main variety. Green Duke is better adapted to January and February harvesting than Topper 43 which it has replaced. A broccoli harvesting machine has been developed. Green Duke is suitable for once-over machine harvesting, but all harvesting in recent years has been by hand.

Soil and Climate

Both soil and climate throughout the Oxnard plain are highly satisfactory for production of broccoli for harvesting in November, December, and January, or in May.

When to Plant and Harvest

Fall planting of broccoli begins in August and continues through September. The later plantings, especially those delayed until October, usually fail to produce the large plant required for a large yield. Green Duke fields are harvested once or twice. The first harvest should begin before many heads are overmature. The interval between harvests is usually about a week. For once-over harvest it is advisable to allow some heads to become over-mature. Then many of the other heads are full size.

Planting, Cultivation, and Weed Control

Because the smooth, round seed of broccoli works well in precision planters, a high percentage of broccoli seed emerges. Because broccoli will yield well over a wide range of plant spacings, this crop is especially well suited to the use of precision planting and mechanical thinning--or to precision planting and thinning with long-handled hoes. A seed spacing of 2.5 inches is suggested for fields to be thinned with a synchronous thinner. If the field is to be thinned with long-handled hoes, it is advisable to take advantage of the greater safety offered by a 2-inch spacing.

Planting to stand with a 6-inch spacing has been successful. Objections to this kind of planting are the large number of heads to be cut and head size that may be less than optimum for trimming and dividing in preparation for freezing. Seed spacing exceeding 6 inches will often result in excessive gap space (unplanted row space).

All broccoli here is planted two rows to a bed with bed centers 40 inches apart. With the well-shaped beds that go with precision planting, close cultivation for weed control at thinning time is effective. Pre-emergence chemical weed control is used to good advantage in this crop.