

L E M O N
P R O D U C T I O N
C O S T S

SANTA BARBARA COUNTY
1965 - 1966

- *Sample Costs to Produce Lemons*
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LEMONS -- SANTA BARBARA COUNTY

The purpose of this study is to provide growers, economists, marketers, and investors with a guide to costs of production so they can better analyze the profitableness of lemon orchards.

The figures presented are sample costs developed from records supplied by a few cooperating growers and local lemon packing houses. The data is adjusted to an assumed typical commercial lemon orchard in the South Coastal portion of Santa Barbara County; characteristics of this typical orchard are:

Lemon orchard planting 30 acres on a 50-acre ranch, other 20 acres in avocados.
Tree spacing average - 16' x 22' - 124 trees per acre. Average yield 650 field boxes per acre.

Owner-operated with additional labor hired at \$2/hr. - includes: irrigation, weed control, fertilization, frost protection, rodent control, and other operations.

Contracts for insect and disease control, pruning and brush disposal with commercial companies or packing houses.

Irrigation is by sprinklers, using plastic drag-line hoses or portable aluminum pipe.

Water purchased from water district under pressure.

Weed control by chemicals and weed oils.

Frost protection by electric windmachine.

Equipment includes small tractor or jeep, pickup, weed sprayer, fertilizer spreader, and trailer.

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George B. Alcorn, Director, Agricultural Ext. Service,
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SAMPLE COSTS TO PRODUCE LEMONS
Santa Barbara County 1965-1966

<u>Cultural Operations</u>	<u>Cost Per Acre</u>
Fertilization	\$ 29
Irrigation - labor	37
Irrigation - water	46
Pest control, spraying	53
Disease control, spraying	11
Rodent and Snail Control	11
Weed Control	37
Pruning and Brush Disposal	60
Frost Protection	16
Tree Care & Replacement	20
Miscellaneous	<u>29</u>
Sub-total	\$ 349

Cash Overhead

Taxes	\$ 93
Maintenance and Repairs	21
General Expenses	33
Management charges	<u>36</u>
Sub-total	\$ 183

TOTAL ON-TREE CASH COSTS	\$ 532
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Investment Overhead

Depreciation	\$ 137
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ON-TREE CASH COSTS + DEPRECIATION -	\$ 669
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Interest on Investment	\$ 324
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TOTAL ON-TREE COSTS -	\$ 993
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CULTURAL OPERATIONS

Fertilization

Nitrogen fertilizer is used in all groves every year. Amounts of elemental nitrogen per acre range from 125 to 350 pounds and average 200 pounds. Most commonly used are urea and ammonium nitrate, broadcast in February. Phosphorus and potassium are applied on those few soils found to be deficient by leaf and soil analysis. Zinc and manganese foliage sprays are necessary in most orchards, usually applied with pest control operations. Cost range: \$8 - 50 per acre.

Irrigation

Most water is supplied from Cachuma Dam by water districts, under pressure and at an average cost of about \$40 per acre foot. Dragline or portable aluminum sprinkler systems are most common. Amounts and frequency of application vary with soil and location; the range is 1½ to 3 acre inches per application, and 3 to 10 applications annually. The total applied averages about 15 acre inches per acre. Cost range: Labor \$12 - 52, Water \$22 - 100 per acre.

Pest Control

Citrus red mite, red scale, and bud nite, the main pests, are usually controlled by at least one oil spray annually. Ant control is practiced in most orchards to improve biological control. Control for silver mite, black scale, snails, gophers, and other pests is as needed. Cost range: \$32 - 95 per acre.

Disease Control

Brown rot/gummosis, the major disease problem, requires at least one skirt spray with bordeaux each fall. Cost range: 0 - \$18 per acre.

Weed Control

Most orchards are non-tilled using a chemical weed control material applied annually to all the soil and spot spraying with weed oil as necessary during the rest of the year and for perennial weeds. Cost range: \$18 - 50 per acre.

Pruning and Brush Disposal

Pruning is needed every year to maintain tree vigor and desirable fruiting, as well as to reduce the height of the trees to aid harvesting. Topping by machine is used generally every few years to remove major portions of the tree tops economically. Between these topplings, hand pruning and suckering is practiced. The prunings are run through chipping machines and spread on the soil as mulch. Cost range: \$30 - 110 per acre.

Frost Protection

Many groves have wind machines for protection on the large number of nights where only a few degrees of protection is required. The machines are supplemented by orchard heaters in colder areas. Cost range: 0- \$40 per acre, depending on hazard and season.

Tree Replacements

Due to losses to gummosis, gophers, and inherited virus diseases, individual trees need to be removed and replanted. This runs up to 5% annually. Re-plant soil fumigation is necessary and special irrigations and care are helpful. Some growers prefer to replant small blocks of trees each year. Cost range: 0 - \$60 per acre, depending on need.

INVESTMENT SCHEDULE

	<u>Expected Life</u>	<u>Original Investment per Acre</u>	<u>Annual Deprecia- tion/Acre</u>
Trees	25	\$ 2000	\$ 80
Irrigation pipelines	25	150	6
Draglines & Sprinklers	10	150	15
Shed	25	50	2
Windmachine	15	350	23
Weed sprayer	25	30	2
Pickup	7	40	6
Misc.	10	<u>30</u>	<u>3</u>
Total		\$ 2800	\$ 137

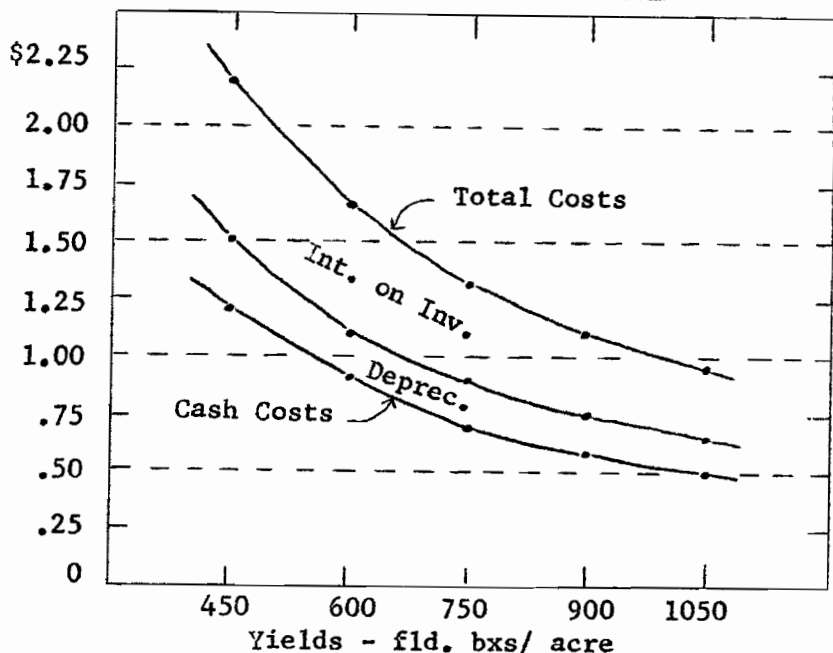
Interest on Investment charge is based on an average investment of \$5400 per acre at 6% interest rate. Assumed land at \$4000 per acre and half life value for other improvements. The land value used is for agricultural purposes and is below current market values.

HARVESTING COSTS

Most picking and hauling of lemons is performed by crews operated by the packing houses and charged to the grower's account at cost. Based on a 50-pound net weight field box, the costs averaged:

Picking	59¢/fld.box
Harvest Labor Overhead . .	12¢/ " "
Hauling	<u>8¢/ " "</u>
Total	79¢/fld.box

COSTS PER FIELD BOX AND YIELD



PRICES AND RETURNS

The current marketing situation for California-Arizona lemons has resulted in the following average prices received from all outlets - fresh fruit, export, and processing. These returns have been converted to an on-tree basis per 50-pound field box.

Season	Total Production Calif-Ariz 1000 carloads	Price on-tree per fld.bx.
1962-63	28.3	\$ 2.05
1963-64	40.3	1.16
1964-65	30.7	1.57
1965-66	34.1	1.23
1966-67	38.8 est.	

Source: Lemon Administrative Committee, Los Angeles, and Agricultural Prices, U.S. Dept. of Agric.