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AVOCADO PRODUCTION COSTS

SANTA BARBARA COUNTY 1970

Including:
- √ Sample Costs to Produce Avocados
- √ Typical Production Operations
- √ Harvesting Costs
- √ Problems and Prospects

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UC COOPERATIVE EXTENSION

AVOCADOS IN SANTA BARBARA COUNTY

Avocados are grown mainly in the upper portions and foothills above the Carpinteria and Goleta valleys and other scattered canyons along the south coast.

The first orchards were planted in the 1920's with acreage leveling between 300 and 400 acres through World War II. A strong planting interest raised total acreage to 1500 by the mid-1950's. Additional plantings started again in the early 1960's and are continuing. New plantings are on both old lemon orchard and new brush covered hillside sites.

Varieties The Hass variety now accounts for more than half of the trees in the county. Nearly all new plantings are of the Hass, the only recommended variety. MacArthur and Rincon varieties account for about 15% each. The Fuerte now totals less than 5% of the trees. Others grown are Bonita, Anaheim, Shepard, Edranol, Bacon, Zutano, and Nabal. The Bacon is used in frost spots. Poor producing mature trees are topworked to Hass.

Production Avocado production is adaptable to the favorable climate, uneven terrain, relatively poor soils, and small farm sizes available in the Santa Barbara area. Yields per bearing acre range from 3,000 to 16,000 pounds. The county-wide average is 7,700. The better commercial groves run 9,000 - 10,000 pounds per acre average. Wide variations in yield from year to year are characteristic.

Root Rot Problem The most serious limitation to profitable avocado production is the Avocado Root Rot disease, caused by the fungus Phytophthora cinnamomi. Nearly 1/3 of the orchards are infected and in various stages of decline. Great variations in severity occur and the individual grove's hazard depends on soil type, irrigation regime, and prevention practices. An extensive research program is underway, but at present there is no inexpensive chemical control or sufficiently

resistant rootstock. The development of new groves above diseased ones, the planting of certified Duke rootstock nursery trees, and careful management are urged for new plantings.

Harvesting and Marketing With the favorable climate for summer maturing Guatemalan varieties and the latest maturity of any California producing area, the best market opportunities are from May through October. Peak picking is usually in August and September but some fruit is picked year around.

About half the groves are harvested by picking crews operated by the packing houses and half by the owners or their employees. The costs vary from 1 to 3¢ per pound, depending on tree size, crop size, variety, terrain, etc. Rates of pick average 5 field boxes per hour and the average cost is 1.5¢ per pound. Thus, a 250 field box per acre grove would take 50 man hours and would cost $150 per acre.

A State Marketing Order assessment of 4.5 - 5% is made on the value of the crop at roadside after harvesting and is used for industry advertising and sales promotion by the California Avocado Advisory Board. It should be deducted from the prices shown below, when calculating profit margins.

Acreage and production statistics for Santa Barbara County as compiled by Walter Cummings, Agricultural Commissioner, are:

	Acreage		Average Yield	Gross Farm Price	Total
Year	Planted	Bearing	lbs/acre	¢/pound	Value
1964	2,213	1,622	7,140	13.1	$1,517,000
1965	2,281	1,679	6,640	26.0	2,896,000
1966	2,296	1,670	8,200	13.3	1,810,000
1967	2,520	1,880	9,800	11.0	2,024,000
1968	2,540	1,760	5,600	23.2	2,288,000
1969	2,670	1,920	8,600	17.0	2,832,000

SAMPLE COSTS TO PRODUCE AVOCADOS
in Santa Barbara County 1970
(see assumptions on page 6)

CULTURAL OPERATIONS - Labor and Equipment	COSTS PER ACRE
Fertilizer-nitrogen, broadcast by hand	$ 5
Fertilizer-zinc foliage spray	7
Irrigation - 12 times per season	30
Pest Control - ants, gophers, rodents	8
Weed Control - spot weed spraying	12
Pruning - skirt, deadwood and brush disposal	9
Orchard Thinning - prorated over 7 years	50
Miscellaneous - propping, erosion, etc.	24
Total Labor and Equipment	$ 145

INVESTMENT SCHEDULE

	Expected Life	Investment per acre	Depreciation per acre
Trees, 135 per acre	20 yrs.	$ 4,350	$ 218
Irrigation System	10 "	700	70
Erosion Structures	25 "	300	12
Pick-up Truck	5 "	125	25
Weed Sprayer	10 "	75	8
Buildings	25 "	50	2
Other Equipment	10 "	50	5
Total		$ 5,650	$ 340

Interest on Investment charged at the rate of 7% on an assumed land value of $3,000 per acre, plus the half life values of the trees, equipment, and buildings.

Materials		Total
Actual N - 225 lbs./acre & lab fee	$ 31	$ 36
Zinc nutritional spray	6	13
Water - 2 acre feet/acre	100	130
Baits, poisons	6	14
Chemicals, weed oil	14	26
Chain saw and disposal	1	10
Chain saw and disposal	4	54
Supplies and tools	8	32
Total Material Costs	$ 170	
TOTAL CULTURAL COSTS		$ 315

OVERHEAD COSTS	
Taxes, property	$ 95
Maintenance & repairs	18
General Expenses, office, phone, insurance	36
Management charge or allowance	36
Total Cash Overhead Costs	$ 185
TOTAL PREHARVEST CASH COSTS	$ 500
Depreciation (See Investment Schedule)	340
TOTAL CASH AND DEPRECIATION	$ 840
Interest on Investment 7%	410
TOTAL PREHARVEST COSTS	$1,250

These costs are based on records from cooperating growers who use practices typical of the area. The sample costs to produce avocados shown on pages 4 and 5 are based on the following assumed characteristics: Hass variety; 16' x 20' planting, 135 trees per acre; 10 years of age; permanent, plastic pipe, under-tree sprinkler system; non-tillage; no frost protection; 20-acre size; owner operated with additional labor at about $2.50 per hour; harvesting by packing house crew; average yield 10,000 pounds per acre (250 field boxes).

CULTURAL OPERATIONS

Fertilization - Nitrogen

Annual application of chemical nitrogen fertilizers are made by most growers. Amounts range from 100 - 400 pounds of elemental nitrogen per acre, with an average of 225 pounds. The amount varies depending on variety, soil, and productivity. Leaf analysis is recommended as a guide. Annual broadcasts can be made in February or can be split in February and July. Phosphate and potash are not recommended. Cost range: $15-55.

Fertilization - Zinc Foliage Spray

Many groves need the micro-nutrient zinc. The best generally applicable way to apply zinc is annually as a foliage spray, usually in June, either by aircraft or ground rigs. In shallow, acid soils, zinc materials can be injected into the soil for longer range correction. Cost range: $0-20.

Irrigation

The most critical operation in successful avocado grove management is irrigation. Practices vary and are greatly dependent on individual orchard conditions of soil, water source, tree size, and location. Most orchards are sprinkler irrigated 5 to 18 times per year; intervals range from 10 to 40 days during the summer; the total water applied varies from 1 to 3 acre feet per acre per year.

The principal source of water is from Cachuma dam and it is furnished under pressure by the water districts at about $50 per acre foot; its quality is satisfactory. Cost range: $40-250.

Pest Control

Chemical control of insect pests is not recommended due to favorable natural parasites and predators. Occasionally, greenhouse thrips and avocado brown mites cause some damage. Ant control is helpful in maintaining biological control. Control of rats, squirrels, snails, and gophers is necessary. Cost range: $0-30.

Weed Control

The use of the herbicides, monuron or simazine, at 2 pounds per acre, is recommended for annual weed control. Weed oils are used to control perennial weeds and to spot spray annuals. Cost range: $10-60.

Pruning and Orchard Thinning

Maintenance-type pruning to remove skirt limbs, dead and broken limbs, and the convenience trimming for irrigation and picking drives is mostly a labor item for odd times in the year. Cost range: $5-20.

As the trees become crowded, alternate temporary trees should be cut back and finally removed to allow the permanent trees ample room to maintain a full skirt of leaves. The first thinning usually removes half of the trees on the diagonal at 12 to 15 years of age. A second thinning of alternate rows usually takes place at 18 to 25 years. The heavy cost of tree removal (up to $550 per acre) has been averaged to $54 per acre per year, when a typical cost of $380 is spread over 7 years, the typical interval between thinning.

Future Trends

Continued conversion of lemon groves will add avocado acreage, due to the relatively brighter economic outlook for avocados. This is particularly true for the smaller farms. So long as urban pressures on farmlands are not too strong and property taxes are moderated, local growers will continue to expand plantings in the favorable foothill areas. About one-quarter of the orchards are located in Agricultural Preserves, where 10 year contracts enable the farmer to receive property tax assessments based on agricultural income values rather than potential urban land values.

High costs of new orchard development -- tree and care costs for 5 years of up to $4500 per acre, plus an irrigation system cost of up to $1000, plus the original land costs -- add up to the need for at least 10 years of production to recoup development costs. Most growers use tree depreciation periods of from 20 to 40 years, depending on soils and location. The average is about 30 years.

But the hazard of losing the grove to the Avocado Root Rot disease, continues to place a damper on a more rapid expansion of avocado acreage in Santa Barbara County. The disease will continue to spread, causing losses to those groves that become infected.

The California Avocado Advisory Board advertizing and trade promotion program has been successful in expanding demand for avocados. Prices continue strong for the volume of fruit available. Suitable production areas are limited to mostly coastal southern California, so the avocado industry is in the unique position of an increasing demand and a limited production base.

The economic outlook for avocado groves without root rot contines to be optimistic.

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