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SAMPLE NAVEL ORANGE PRODUCTION COSTS - VENTURA COUNTY

CULTURAL OPERATIONS		SAMPLE COSTS PER ACRE
Fertilization:	Nitrogen application; zinc and/or manganese spray	$ 30
Irrigation:	3 ac. ft. water @ $18/ac. ft.	54
	Labor	38
Insect Control:	Spring and fall spray	80
Disease Control:	Brown Rot	15
	Gummosis and other	5
Rodent Control:		6
Weed Control:	Fall sterilant treatment and spot sprays	22
Pruning & Brush Chopping:	Every five years--prorated	15
Frost Protection:	Wind machines and heaters	40
Tree Replacement:		21
Miscellaneous:		15
	Sub-total	$ 341
CASH OVERHEAD		
Taxes:		$ 90
Maintenance & Repair:		24
General Expense: 1/		17
	Sub-total	$ 131
TOTAL ON-TREE CASH COST		$ 472
INVESTMENT OVERHEAD		
Depreciation:	Trees, irrigation and frost protection systems, equipment and shed	$ 140
ON-TREE CASH COST + DEPRECIATION		$ 612
Interest on Investment:	Including land	$ 252
TOTAL ON-TREE COST		$ 864

1/ Cost of management not included in this cost data sheet.

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SAMPLE COSTS TO PRODUCE NAVEL ORANGES IN VENTURA COUNTY

The purpose of this cost data sheet is to provide growers with a guide to costs of production so they may better analyze the economics of their orchard operation. Cost estimates are based on a navel orange orchard in Ventura County with the following characteristics.

The grove is a 40-acre planting with tree spacing 22 X 22 or 90 trees per acre. It is owner-operated with additional labor hired at $1.80 per hour ($1.40 per hour direct cost and $.40 other costs). Pruning, brush cutting, and insect and disease control are done by commercial companies on contract. Irrigation is by furrows and the soil is nontilled. Frost protection is provided with a 100 h.p. electric windmachine (5 h.p./acre) and 15 University Return-Stack orchard heaters per acre. Equipment and building includes a wheel tractor, pick-up truck, fertilizer spreader, self-propelled weed sprayer, and shed.

FERTILIZATION Navels require fertilization to maintain maximum yields. Too much nitrogen, however, aggravates poor fruit quality. Nitrogen per tree varies with tree age and soil type. Under most conditions, about two pounds of actual N per tree per year will maintain maximum yields of quality fruit. Nitrogen is usually applied in February. There is no advantage to split applications. However, if split, second application should be applied before June.

IRRIGATION Adequate, but not excessive moisture should be available to the trees at all times. Orchards near the coast require less water than those in the interior area. Peak water use is during hot weather--June through September. Number of irrigations and amount of water varies with season and soil. About three acre feet per year is the average.

INSECT CONTROL Orchards should be kept commercially clean of serious pests at all times. Two treatments are generally required--spring, a non-oil spray for mites and aphids; fall, an oil spray for scale and mites. Red and black scale have been successfully controlled with natural enemies. If biological control is used, the fall spray may not be required. Micronutrients (zinc and manganese) and urea are usually added to the spray mix.

DISEASE CONTROL Brown Rot--A skirt spray of Bordeaux prior to the rainy season can prevent serious loss of the fruit from brown rot, a fungus disease. Gummosis--A soil-borne fungus disease affects the bark at the ground level. Painting tree trunks with Bordeaux paste helps prevent its occurrence.

HARVESTING COST Prices paid for picking fruit vary widely. They depend upon tree size, fruit size, and yield per tree. The average picking and hauling cost for all California oranges during the 1965-66 season as reported by the California Citrus League was $.36 per packed equivalent carton of 37½ pounds net or $.48 per 50-pound field box.

YIELD Navel orange yields per acre vary widely in the county, ranging from about 300 to 700 field boxes per acre. County average yield per acre as reported by the Agricultural Commissioner is as follows:

	1963-64	1964-65	1965-66
Bearing acres	1,941	1,998	1,722
Average field boxes (50 lb.)/acre	498	551	592