

GRAPEFRUIT PRODUCTION COSTSDescription

The cost figures given in this sample are based on assumed conditions. The typical practices are listed, with sample costs given for the labor, materials, and equipment required. These are not presented as "standard" costs, but are intended as guidelines based upon growers' experience. Individual orchards often vary considerably from these figures in their cost and return experience. Particular items may vary from a grower's experience due to difference in conditions. Warm locations, for example, require no frost protection. Availability of adequate well water reduces the cost of irrigation water.

Orchards on steep slopes, with inadequate roadways and drives for fruit handling and grove work, will cost considerably more to operate. Portable or drag-line irrigation systems may have lower initial costs, but higher labor requirements. Poor or untimely farming and management practices commonly cause costs to be higher than necessary and returns to be low.

Weed control is one operation that can be very costly if treatments are delayed or poorly done. If weed control has been neglected or weed control adjacent to the planted area is included, costs will be much higher. Elimination of an existing weed problem is more costly than maintenance of a normal weed control program. Delayed weed control is probably the most frequent cause of costs being higher than expected.

This study is based on expected costs for a 10-acre, 10-year-old, Marsh White or Red grapefruit planting in the northern inland part of the county, utilizing hillside land. Tree spacing of 15 by 20 feet results in approximately 150 trees per acre.

Sandy loam soil over decomposed granite is typical. Water obtained through the local water district is applied with a permanent sprinkler system, using one revolving sprinkler per tree, or a drip irrigation system with three or more emitters per tree. Orchard heaters for cold sections of orchard are included. Other equipment includes a fuel tank, tools, wheel tractor, weed sprayer, and mower.

Investment Overhead Per Acre

Depreciation and interest on investment are included as overhead costs of investment. An annual charge for interest on investment is calculated on the money invested in land, buildings, and equipment.

The total economic cost of producing grapefruit includes a charge for interest since the value of your capital should not be ignored in measuring orchard income, and for comparison with alternate use of resources. For management analysis noncash costs, including interest and owner's labor, should be included even though they are not included as business expenses in accounting practice.

NOTE: We acknowledge the fine cooperation and assistance of the growers and farm managers who participated in accumulation of this cost data.

Depreciation and interest per acre are calculated from the following investment schedule:

	<u>Investment</u>	<u>Depreciation</u>	<u>Interest @ 9%</u>
Trees	\$11,533	\$461	\$519
Irrigation system*	1,000	100	45
Frost protection	250	17	11
Equipment and buildings	250	25	11
Land	4,500	--	405
	<u>\$17,533</u>	<u>\$603</u>	<u>\$991</u>

YIELD AND RETURNS

Yield varies considerable among orchards and from year to year. Commercial production may range from 400 to 900 field boxes per acre. Excellent orchards under favorable conditions in on-crop years may produce more. The following chart illustrates variability in gross on-tree returns due to yield and price change.

On-tree price	Yield per acre, field boxes					
	400	500	600	700	800	1,000
\$.75	\$ 300	\$ 375	\$ 450	\$ 525	\$ 600	\$ 750
1.25	500	625	750	875	1,000	1,250
1.75	700	875	1,050	1,225	1,400	1,750
2.25	900	1,125	1,350	1,575	1,800	2,250
2.50	1,000	1,250	1,500	1,750	2,000	2,500
3.00	1,200	1,500	1,800	2,100	2,400	3,000
3.50	1,400	1,750	2,100	2,450	2,800	3,500

COST ANALYSIS

Cash Cultural Costs

Irrigation labor	\$ 100
Irrigation water	450
Pest and disease control	110
Fertilization	72
Weed control	60
Pruning and brush disposal	35
Frost protection	90
Misc. tree care, replacement, etc.	20
	<u>Subtotal</u>
	937

Cash Overhead

Taxes	120
Maintenance and repair	50
General expense (office, phone, production credit, etc.)	100
Management	84
	<u>Subtotal</u>
	354

TOTAL CASH COSTS \$ 1,291

Investment Overhead

Depreciation	603
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TOTAL CASH COSTS PLUS DEPRECIATION \$ 1,894

Interest on investment	991
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TOTAL ON-TREE COSTS \$ 2,885

* Sprinkler system, cost of drip system somewhat less.

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