NAVEL ORANGES
WESTERN RIVERSIDE COUNTY
SAMPLE COSTS OF PRODUCTION - 1968

Based upon a mature orchard, furrow irrigated, frost protection by wind machines; labor at $2/hr.

CULTURAL COSTS	Hrs/ Acre	Labor Cost	Equip. Cost	Materials Item	Materials Cost	Total Cost/Acre
Cultivate and Furrow 5 X (contract)						$ 35.00
Fertilize 1 X commercial (contract spread @ $2.50)				1½# N/tree	$20.50	23.00
Irrigate 10 X	18	$36.00		4 ft.water	70.00	106.00
Pest Control with Micro-nutrients						110.00
Rodent Control	3	6.00				6.00
Frost Protection - WM Electrical Standby Charge						40.00
Remove and Plant Trees	6¼	12.50		2 trees	5.50	18.00
Prune and Brush Disposal (contract)						8.00
Miscellaneous						8.00
TOTAL CULTURAL COSTS						$ 354.00
CASH OVERHEAD						
Cash Overhead (office, insurance, etc.)						25.00
Taxes						150.00
TOTAL CASH OVERHEAD						$ 175.00
TOTAL ON-TREE CASH COSTS						$ 529.00

INVESTMENT OVERHEAD

	Investment/Acre	Depreciation	Interest	
Land	$5,000.00		$300.00	
Trees	1,800.00	$ 72.00	54.00	
Irrigation System	150.00	15.00	4.50	
Wind Machine	500.00	50.00	15.00	
	$7,450.00	$137.00	$373.50	
TOTAL DEPRECIATION AND INTEREST				$ 510.50
TOTAL ON-TREE COST				$1039.50

COST PER FIELD BOX AT VARYING YIELDS

Yield - Field Boxes/Acre	200	300	400	500	600
Total on-tree Cash Cost	$2.65	$1.76	$1.32	$1.06	$0.88
Total on-tree Cost	5.20	3.46	2.60	2.08	1.73

Yields from well-managed groves will usually range from 300 to 500 boxes/acre.

Average water costs vary from $30 to $100, depending upon the source of water. Average pest control costs vary from $75 to $200. Not all groves have frost protection and charges vary for those with protection that do not have wind machines. Pruning was figured on a basis of once in four years.

The above sample costs are based primarily on contract costs which include interest and depreciation on equipment used.

AGRICULTURAL EXTENSION SERVICE, 21160 LAWLESS RD., SUITE 202, RIVERSIDE, CA. 92507

NAVEL ORANGE PRODUCTION
WESTERN RIVERSIDE COUNTY

The acreage of navel oranges in Riverside County has remained about the same for the last twenty years, with a range of 11,000 to 13,000 acres. In the last few years plantings have increased. Navel acreage now totals 13,091 acres, with 3,460 acres of this nonbearing.

SOIL: Navel oranges do best on deep well-drained soil. While the roots are usually concentrated in the upper two to three feet of soil, in the more open sandy soils they will go deeper.

IRRIGATION: This is an important operation in citrus culture. The area of soil occupied by roots should be supplied with moisture at all times, but excessive use of water may cause root decay, especially if drainage is poor. Test the soil for moisture at various depths as a regular practice. The moisture in the root zone is the only moisture available to the tree. The interval between irrigations in the summer usually ranges between 15 and 30 days. The amount of water applied at each irrigation is determined by both the capacity of the soil to hold water and the depth to which soil is occupied by roots. A good rule is "always irrigate dry soil, never irrigate wet soil."

FERTILIZER: Nitrogen is the element generally lacking in the soil. This is usually supplied by commercial fertilizers and often supplemented with animal manures. The nitrogen content of the leaves is a good measure of the nitrogen supply of the tree. Good production has been obtained when there is between 2.4 and 2.6 percent nitrogen in orange leaves when tested in the period from August 15 to October 15.

FROST PROTECTION: In some areas low winter temperatures make some form of frost protection desirable. Wind machines generally give adequate protection against light frosts. Orchard heaters are needed on nights of a severe freeze. Under most conditions, a wind machine supplemented with 10 to 20 heaters per acre will give adequate protection.

SOIL MANAGEMENT: Cultivation is commonly used for weed control, but if excessive or poorly timed can be harmful. Work the soil as little as possible as all forms of tillage tend to destroy soil structure and cause water to penetrate less readily. Organic matter is often valuable where soil structure has deteriorated and water penetration is poor. The more often soil is tilled the greater is the need for organic matter. Cover crops and animal manures are a good source of organic matter.

Non-tillage is followed in many orchards. Various herbicides are used to control weeds. Oil, monuron, diuron and simazine have been found to be effective and economical in destroying the growth of weeds when a non-tillage program is used.

PEST CONTROL! The principal pests requiring control are red spider, red scale, black scale and thrips. Fungicides are sometimes used to control brown rot both on the fruit and on the trunks of the trees.

BULLETINS: Bulletins on citrus production and marketing problems are available at the Agricultural Extension Service office.