(Calif. Univ. Agric. Ext. Serv.
Tulare county.

COST ANALYSIS WORK SHEET
SAMPLE COSTS TO PRODUCE NAVEL ORANGES IN TULARE COUNTY

Based on a hield of 400 - 53-lb. field boxes per acre. Man labor at $1.15 and $1.50 per hr. light wheel tractor: cash cost 82¢ per hr., depreciation 58¢, interest 26¢.

	Sample Costs		Your Costs	
	Per Acre	Per Field Box	Per Acre	Per Field Box
PRE-HARVEST CASH COSTS:				
Cultivate and furrow: 7 hrs. M & T	$ 16.24			
Irrigate: 11 times - 14 M hrs.	16.10			
Water: power to pump 3 ac. ft. @ $6.00	18.00			
Fertilize: 1 hr. M & T	2.32			
Fertilizer: 105 N. in calcium nitrate	19.00			
Pest control: 3 times - contract	60.00			
Frost protection: labor 5 hrs. T - 1 hr.	6.92			
Frost protection: power $45, heater oil $10	55.00			
Pruning - contract every 4 years	6.00			
Misc. labor: 4 M & 1 T hrs.	5.77			
Misc. material	4.00			
County taxes	31.08			
Office, car, operating capital, etc.	16.00			
Repairs: irrig. system, equip. except trac.	4.00			
TOTAL PRE-HARVEST CASH AND LABOR COST	$260.43	$ .65		
HARVESTING COSTS:				
Picking @ 28¢ per field box	112.00	.28		
Hauling @ 6¢ " " "	24.00	.06		
TOTAL HARVESTING COST	136.00	.34		
TOTAL CASH AND LABOR COSTS	396.43	.99		
DEPRECIATION COSTS:				
Trees: ($808 cost - 40 yrs. life)	20.20			
Irrigation facilities - $360 cost	19.50			
Wind machine and heaters: $620 cost	41.50			
Tractor: 10 hrs. @ 58¢	5.80			
Buildings and equipment: $120 cost	9.00			
TOTAL DEPRECIATION COST	96.00	.24		
TOTAL CASH AND DEPRECIATION COST	492.43	1.23		
INTEREST ON INVESTMENT @ 6%:				
Trees: on 1/2 original cost ($404)	24.24			
Irrigation facilities: on 1/2 cost ($180)	10.80			
Wind machine & heaters: on 1/2 cost ($310)	18.60			
Tractor: 10 hrs. @ 26¢	2.60			
Buildings & equipment: on 1/2 cost ($60)	3.60			
Land @ $800	48.00			
TOTAL INTEREST ON INVESTMENT COST	107.84	.27		
TOTAL COST OF PRODUCTION	600.27	1.50		

COST PER FIELD BOX AT VARYING YIELDS

Yield - field boxes per acre	300	400	500	600	700	800
Cash and depreciation cost	$1.53	$1.23	$1.05	$ .93	$ .85	$ .78
TOTAL COST PER BOX	1.89	1.50	1.27	1.11	1.00	.92

Karl W. Opitz
Farm Advisor

Burt B. Burlingame
Extension Economist

Revised: September 25, 1961

1961 NAVEL ORANGE
COSTS AND MANAGEMENT DATA

Navel orange acreage totals more than 30,000 acres in Tulare County. This places Tulare County first in acreage and production of the crop in the United States.

Cost data presented herein represents the best available current estimates. Each individual grove will vary according to its special situation relation to location, soil, water, tree and management factors.

Location: Navel oranges are generally adapted to the so-called "thermal belt" located roughly in a 10 to 15-mile strip along the Sierra foothills. Temperatures vary according to air drift. Usually as density of plantings increase, areas become colder.

Soil requirements: Oranges grow on a wide variety of soils. Deeper, well-drained soils are preferred. Alkali ground should be avoided.

Water requirements: Adequate, but not excessive, moisture should be available to the trees at all times. The most critical period is during flowering and fruit setting. Heaviest water use comes during hot weather--June, July, August, and September. Total water applied through irrigations vary according to season and soil--about 3-acre feet per acre per year is usual.

Varieties or Strains: Selection of virus-free strains is important. Nucellar bud lines and certified psorosis (scaly bark) and exocortis (scaly butt) free budwood generally give best results. Uncontaminated Frost nucellar navels are suggested for use on trifoliate or trifoliate hybrid rootstocks. Thompson Improved navel and Atwood Early navel appear useful on rootstocks not susceptible to exocortis. Robertson navels are not recommended.

Rootstocks: Troyer citrange, trifoliate orange, Cleopatra mandarin and possibly sweet orange and grapefruit rootstocks appear best under most conditions. Soil conditions and bud lines used, determines the best rootstock for a given situation.

Planting distances: Spacing depends on variety, rootstock, soil type and local climatic factors. The most usual planting distances are 22' x 22' or 20' x 20', Double setting (22' x 11') is widely practiced. The interset should be cut back and eventually removed to avoid crowding and loss of production in later years.

Fertilization: Nitrogen is generally applied once a year in February at the rate of about 1½ pounds per tree. Trees grow poorly and crops are light when nitrogen is lacking. Excessive fertilization affects fruit quality adversely.

Pest and Disease Control: All serious pests and diseases must be controlled to maintain the grove in economical fruit production.

Harvesting and Marketing: Under the prorate, navel oranges are harvested from November to May. Best quality is in January and February. The navel orange is a "dessert" orange. By-products afford the grower a very limited outlet. Highest quality fruit is grown on trifoliate orange root.

Outlook: Citrus production costs will remain high and relatively "fixed." Costs per unit will go down with increasing production. Top quality commands the best prices. Successful orange growers increase production per acre and grow high-quality fruit.