

UNIVERSITY OF CALIFORNIA
AGRICULTURAL EXTENSION SERVICE
LAKE COUNTY

Farm Advisors Office, Kelseyville, Calif.
July, 1955

WALNUT COST AVERAGES - LAKE COUNTY, 1954 - IRRIGATED

Sample costs averaged from six mature orchards, four on level land. Yield and harvest cost data based on average of 1950 through 1954 records.

COST COMPARISONS: Cash costs of \$195.15 per acre are higher than non-irrigated orchards (\$127.03), but cost-per-100 lbs. of walnuts are nearly the same: \$12.19 irrigated; \$12.70 non-irrigated.

	Av. dry yield:	Cash costs/100 lbs.	Tot.all costs,int., deprec.
Lake Co. non-irrig.	1000#/acre 1954	\$12.70	\$17.13
Lake Co. irrig.	1600#/acre 1954	12.19	17.65
Santa Clara Co.	2127#/acre 1954	12.80	19.20
San Benito Co.	2500#/acre 1954	9.68	12.58
Stanislaus Co.	1467#/acre 1953	8.04	14.14
Santa Barbara Co.	2000#/acre 1953	9.35	13.10

All the above apply to irrigated orchards except the first line. Yields and costs vary from year to year, and none of the above data should be taken as the rule in any one county.

VARIETIES: 1,100 acres Poe; 3,200 acres Franquette; 400 acres Mayette.

"Frost-free" period is about May 1 to October 15, requiring a late blooming and early harvest variety. Hartley at present is the nearest to meeting this order for new acreages, and about equal acreage is also being top-worked to Franquette. Yield records of 20 selected strains of Mayette and Franquette and new hybrid varieties are continuing in the U. C. plot near Kelseyville. Several are very promising. Check with Farm Advisor.

SOIL: Walnuts need deep, well drained loam soils to be profitable after installation costs and labor and power costs for an irrigation system. Level soil areas allow mechanization of harvest. Soil auger tests to a depth of eight feet with the help of the Farm Advisor will give valuable subsoil data.

FERTILIZERS: Commercial fertilizer containing 100 pounds of nitrogen per acre is recommended annually. Ammonium sulphate at 500 pounds per acre will furnish this and also contains sulfur which may be beneficial. It is less subject to leaching than ammonium nitrate which is used at 300 pounds per acre. Both are widely used November-February in Lake County. An additional half-rate application is sometimes used just before the first irrigation.

PESTS AND DISEASES: Two aphid dustings (see cost data) are the only usual pest control practices needed. Blight is increasing in several areas, requiring coppers. "Crown rot" requires digging holes around tree trunks to dry bark, if this disease is present.

ROOTSTOCKS: Northern California black walnut is the most common. "Hybrid" rootstocks should be used in low spots having poor drainage as they are resistant to crown rot. They exceed black rootstocks in vigor on gravelly soils.

IRRIGATION: Because walnuts leaf out in May, no irrigation is needed until late June in years of normal rainfall. About six acre-inches should be applied to get at least four feet depth of penetration each time, whether by sprinkler, panel, basin, or furrow system. A second irrigation in late July and a third in late August are usual practice. Soil around the trunk should be left dry to reduce possible crown rot. Sprinkler irrigated trees may have holes 15 inches deep kept open permanently around each trunk to allow quick drying of bark.

Arthur Shultis, Extension Economist

John J. Smith, Farm Advisor

(OVER)

SAMPLE COSTS FOR WALNUTS, LAKE COUNTYMature Irrigated Orchard with a Yield of 1600 lbs per Acre.

	Man	20-30 hp	Pickup	Cost	Cost	
	labor	Tractor	or trk.	per	per	
	Hours per Acre			acre	Cwt.	
Pruning & brush disposal, 17 trees/acre	7.0	1.0		11.00		
Cultivation	5.0	4.0		15.25		
Irrigation - 3 times, sprinkler	3.0		0.3	4.50		
Apply fertilizer	0.5	0.3	0.1	1.60		
Dusting twice	0.3	0.3		1.05		
Miscellaneous other work	3.0	0.5	0.5	6.25		
Subtotal - cultural labor & field power	18.8	6.1	0.9	39.65	2.48	
Shaking and some knocking	6.0	3.0		14.25	.89	
Picking, \$40 a dry ton, hand (or machine)				32.00	2.00	
Haul to dehydrator	1.1		0.7	3.40	.21	
Custom hulling & dehydrating @ \$35 a ton				28.00	1.75	
Contract hauling to market @ \$5 a ton				4.00	.25	
Total harvesting	7.1+	3.0	0.7	81.65	5.10	
Total cultural & harvest labor	25.9	9.1	1.6	121.30	7.58	
Fertilizer to give 100 lbs. nitrogen				15.00		
Dust - 100 lbs.				12.90		
Power for pumping irrigation water 18 A in. - 512 KW hr.				11.80		
Miscellaneous other materials				2.00		
Total material cost				41.70	2.60	
General expense 5% of all above				8.15		
County taxes, \$365 value @ \$5.40				20.00		
Repairs except truck and tractor				2.50		
Compensation and other insurance				1.50		
Total cash overhead costs				32.15	2.01	
Total cash costs				195.15	12.19	
Investment overhead based on \$800/acre	Total cost 40 A	Orig. cost	Aver. Invest.	5% int.	Depreciation	
	Dollars per Acre					
Trees, 10 yrs. to bearing	\$32,000	\$800	\$400.00	\$20.00	\$20.00	
Irrigation system	7,040	176	88.00	4.40	10.50	
Tillage equipment	800	20	10.00	.50	1.00	
Duster	1,000	25	12.50	.63	2.00	
Building for equipment	1,600	40	20.00	1.00	1.00	
Miscellaneous other equipment	400	10	5.00	.25	1.00	
Land (good valley)	20,000	500	500.00	25.00	----	
Total Investment	62,840	1571	1035.50			
Total depreciation					35.50	
Subtotal cash and depreciation costs						35.50
Total interest on investment at 5%				51.78		51.78
Total all costs						282.43

Labor costs above are figured at the following hourly rates: man labor \$1.25 and \$1.50; 20-30 hp track tractor \$2.00; pick-up or truck \$2.50. Tractor and truck rates include repairs, depreciation, insurance, other overhead and operating costs based on use for only 40 acres.

Trees on this higher value land with irrigation are estimated to have a development cost of \$800 an acre by the time they begin to pay at around the tenth year, followed by a 40-year productive life, giving an annual depreciation of \$20 an acre.

If walnuts were 21 cents a pound, a yield of 1600 pounds would result in a gross income of \$336 an acre, a management income over all the above costs of \$54 an acre. Net farm income to an operator free of debt and doing all possible labor himself may be about \$130 an acre or \$5,200 with 40 acres.