

PH-SJ-74

*Sacramento/San Joaquin
1974*



CLING PEACH

MANAGEMENT, COSTS, AND RETURNS



Division of Agricultural Sciences
UNIVERSITY OF CALIFORNIA

75-LE/ 2224
Rev. of AXT-332

COOPERATIVE EXTENSION

UNIVERSITY OF CALIFORNIA

This information is provided by Cooperative Extension, an educational agency of the University of California and the United States Department of Agriculture.

Support for Cooperative Extension is supplied by federal, state, and county governments. Cooperative Extension provides the people of California with the latest scientific information in agriculture and farm consumer sciences. It also sponsors the 4-H Youth Program.

Cooperative Extension representatives, serving 56 counties in California, are known as farm, home or youth advisors. Their offices usually are located in the county seat. They will be happy to provide you with information in their fields of work.

This bulletin discusses:

- the importance of cling peaches in California;
- the latest management practices;
- the costs of growing peaches;
- the net income at various yields and prices; and
- how much investment is needed.

The authors are:

Donald Rough, Farm Advisor, San Joaquin County;
Norman W. Ross, Farm Advisor, Stanislaus County;
Fred Beidenweg, Farm Advisor, Stanislaus County;
David H. Chaney, Farm Advisor, Sutter-Yuba Counties;
C. Verner Carlson, Farm Advisor, Merced County;
James A. Beutel, Extension Pomologist, Davis; and
Philip S. Parsons, Extension Economist, Davis.

Recognition is given to A. D. Rizzi, Extension Pomologist, Emeritus, for initiating this publication in 1970.

The University of California's Cooperative Extension programs are available to all, without regard to race, color, or national origin.

CLING PEACH

MANAGEMENT, COSTS, AND RETURNS

INTRODUCTION

Cling peaches occupy an important place in California fruit crops. The 1973 cling crop brought growers over \$63 million. The major producing counties (table 1) include Stanislaus, Sutter, Merced, Yuba, Butte, and San Joaquin. The farm advisors who work with cling peaches in these counties consulted with growers in assembling the data presented in this publication, and the information typifies costs of successful growers. Individual growers are urged to use the data to help develop their own cost information. Of course, the operations shown are subject to variations depending on area and local farming practices.

The tables on pages 4 to 7 give the following information: table 2, costs of growing peaches; table 3, costs per ton and net income per acre; table 4, monthly cash flow; and table 5, investment needed in 1974 for a 100-acre peach enterprise. See page 7 for notes on the tables.

TABLE 1. Total Cling Peach Acreage in the Main Producing Counties of California

County	Acres		
	Bearing	Nonbearing	Total
Stanislaus	15,040	2,828	17,868
Sutter	9,604	3,585	13,189
Merced	5,776	1,319	7,095
Yuba	4,791	1,905	6,696
Butte	3,776	917	4,693
San Joaquin	3,938	687	4,625
Fresno	1,768	544	2,312
Tulare	1,414	284	1,698
Kings	1,187	159	1,346
Kern	585	687	1,272
Total	47,879	12,915	60,794
Other counties	1,578	399	1,977
STATE TOTAL	49,457	13,314	62,771

CULTURAL AND HARVEST OPERATIONS

Pruning

The pruning of cling peach orchards usually extends from December through February. Small crews are most often used with the grower furnishing ladders and sometimes

pruning shears and saws.

The piece-rate system is in general use although an hourly rate is sometimes used for

very young trees from their first through third dormant pruning. In this case, the most skilled pruners are used.

Pruning practices vary, depending on the grower, the variety, and the year. Under some conditions, a grower may want the tops cut back, the deadwood removed, and only a slight thinning of fruiting wood. Other growers may instruct their pruners to be more thorough in thinning out fruiting wood. These growers would expect lower costs at thinning time. Certain varieties, like Loadel, which set extra heavy numbers, benefit from more extensive fruitwood thinning than varieties like Carolyn and Halford.

Brush Removal

Peach growers shred brush, disc it under, or use a brush rake to remove the brush after pruning. In older orchards, the removal of limbs too big to disc or shred is an additional expense. Brush should be removed before late winter sprays are applied and certainly before the first irrigation. This study's costs include the use of a 60-hp wheel tractor and shredder.

Wire and Prop

To prevent limbs from breaking under heavy crops, they are tied together by encircling the tree with a single strand of 12-gauge wire. The wire is placed 9 to 11 feet above ground. Most growers repair and maintain tree wires annually after pruning and up to thinning time. Changes in tree wiring systems may be needed as the grower becomes more experienced in mechanical harvesting.

As fruit matures, but before it reaches maximum weight, limbs on many heavily cropped trees are supported with 1" X 4" wood props 8 to 12 feet long. Wood props are used in addition to wires to supply maximum support for heavily cropped trees. Since most growers grow several varieties with different maturity dates, props can be used more than once each season. After a field has been propped, it is very difficult to use equipment, including ground rig sprayers. It is difficult to use

harvesting machines in propped orchards.

Props are removed from each tree as it is harvested. Props will have a longer life if they are picked up and stored promptly after use.

Spray

Pest control in peaches is one of the necessary yearly operations. Diseases, such as peach blight, leaf curl, and blossom brown rot, affect fruit set. Uncontrolled mildew affects fruit sizing and quality. The occurrence of fruit brown rot is a serious threat to the crop. Insect pests, including scale, mites, twig borer, and oriental fruit moth, must be controlled annually. The four spray operations suggested are about average, although additional special sprays may be necessary under epidemic conditions. Needs for spray vary with orchard, season, variety, and previous materials used. For pest and disease control information, contact the University of California Cooperative Extension office in your county.

Fertilizer

All peach orchards need fertilization. Applications of nitrogen are the most important. Potassium and zinc applications may also be needed. Except on very sandy soils, a single nitrogen application in the late fall or winter is satisfactory. In general, the source of the nitrogen is unimportant. Nitrogen fertilizer rates for mature orchards average 150 pounds of actual nitrogen per acre but may vary from 100 to 200 pounds per acre. Fertilizer costs are rapidly increasing due to limited supplies. Therefore, current fertilizer costs may be higher than those shown in this study. Heavy applications can delay harvests or produce excessive top growth that can shade out lower fruiting wood and add to pruning costs. In some peach growing areas chicken manure is available and is being used to advantage but the trees may require additional applications of zinc sprays. Many growers feel they save capital investment as well as annual costs if the fertilizer dealer applies the material at

nominal costs.

Thinning

Thinning is necessary to grow a salable crop of maximum size. It is traditional to do this job by hand beginning in early May about the time pits begin to harden. Hand-thinning costs, however, rate second only to those of harvesting. Mechanical and chemical thinning are under experimental use; present results are somewhat uneven. In spite of this, future thinning techniques will develop in this direction. In terms of costs, growers should remember that overthinning is as expensive as or more so than underthinning.

Growers should first begin thinning those varieties with an early reference date; those with later reference dates should follow. Hard-to-size and heavy-setting varieties like Loadel may be thinned as early as late April. Easy-to-size or moderate-set varieties like Starn may be thinned as late as mid-June. The grower should supervise the thinning and, in fact, should be on a ladder in the orchard, directing the thinning according to fruit numbers and measurements.

Cultivation

Discing is generally used for working in manure and for cultivating peaches because weed and cover crop growth must be turned under. Growers should be cautious about working the ground when it is too wet since most orchard soils are easily compacted.

Ridge and Knock Ridges

Ridging is a necessary preparation for flood irrigation. Ridges can usually be left up unless the orchard is to be sprayed or harvested, or unless weeds need to be disced. Furrow irrigation may also be used although preparation costs are nearly double those of ridging.

Irrigation

Mature peach trees require at least 3 acre-feet

of water per acre each year. Peach trees respond noticeably to proper irrigation. A moisture shortage reduces growth and fruit size, and too much moisture prevents fruit sizing and sometimes causes root losses that weaken the tree. Irrigation management, whether done according to the calendar, moisture measuring devices, or delivery dates from district ditches, must take into account other anticipated cultural requirements such as pest control. Although this study refers to flood irrigation, many peach orchards are successfully irrigated by furrow and sprinkler. Like most orchard crops, peaches have irrigation requirements that should receive a large proportion of management's time.

Miscellaneous Orchard Work

There will be a number of minor cultural requirements—for instance, treatment of crown-galled trees, limb or trunk wounds, and spot spraying for bermudagrass or johnsongrass.

Harvest

Harvesting costs more than any other part of peach growing operations. Increasing costs for labor and limited availability of good hand-harvest labor is forcing harvest by machine.

A typical hand-harvesting operation includes using bin trailers, checker-sorters, tractor drivers, crew boss, and pickers. If there is an excess of small fruit, sizing may be required to remove it. Some growers prefer to move bins around in the field with forklifts. Most growers must harvest their crop in one operation. The system usually does not provide optimum quality and maturity, but hand harvest crews do not like to tip or scrap pick. Mechanical harvest is a once-over pick too.

Once-over harvesting an entire orchard may remove too much overripe and too much underripe fruit. Harvesting each tree separately on a once-over basis permits bypassing those that have too much underripe fruit; they can be harvested the next time over. The

only inefficiency of this type of harvest is the time used travelling between the trees harvested at each picking. Keeping the closest possible control of tree vigor to encourage the formation of fruit of uniform maturity is also a way of keeping harvest costs down and of maintaining quality.

Fruit quality and size must meet minimum industry standards. A third party grading system is used with the cost shared between producers and processors. Pickers are instructed to drop defective fruit. Even so, extra sorters must often be hired.

With the increased use of mechanical harvesting, growers will alter their cultural operations to fit the requirements of mechanical harvesting. Tree modification will be necessary to some degree. Preharvest land preparation will require more attention. Additional prop handling may be necessary. Thinning, irrigating, and fertilizing will probably have to be more precise to produce a uniform fruit maturity. Mechanical harvesting will also mean additional capital investment.

Marketing order costs vary considerably from year to year. These include administrative and green drop costs.

TABLE 2. Costs to Produce Cling Peaches — 1974
Yield: 16 tons No. 1 fruit — 109 trees per acre

Operation	Hours per Acre	Cash and Labor Cost per Acre				Total	Percent of Cash Costs
		Labor*	Fuel and repairs	Materials kind and quantity	Cost		
Cultural Costs							
Prune, \$1.30 per tree		\$141.70	\$ 1.75			\$ 143.45	11
Brush removal	2.0	8.00	6.86			14.86	
Wire and prop (2M)	4.0	13.60	2.75	Wire	\$ 5.00	21.35	
Spray, 7X (2M)	7.0	23.80	27.69	Chemicals	102.42	153.91	12
Fertilizer (2M)	1.0	3.40	2.75	150 N @ 40¢	60.00	66.15	
Thin, \$1.85 per tree		201.65				201.65	16
Cultivate, 4X (2 ways)	4.0	16.00	18.28			34.28	
Ridge, 4X	.8	3.20	2.38			5.58	
Knock ridges	.4	1.60	1.05			2.65	
Irrigate, 6X	12.0	33.60	Power to pump		10.75	44.35	4
Miscellaneous	3.0	10.20	2.75			12.95	
Total Cultural Costs		\$456.75	\$66.26		\$178.17	\$ 701.18	55
Harvest Costs							
Pick, haul 17-2/3 tons @ 20.00		353.40				353.40	
Total Harvest Costs		\$353.40				\$ 353.40	28
TOTAL HARVEST & CULTURAL COSTS						\$1,054.58	

Table 2 continued on page 5.

Table 2 continued

Item			Total	Percent of Cash Costs	
Cash Overhead					
Misc., office, interest on operating capital, etc.			\$ 63.27		
Taxes — land, trees, and equipment			81.96	6	
Marketing and promotion, \$4.00/ton			64.00		
Total Cash Overhead			\$ 209.18		
TOTAL CASH COST			\$1,263.76		
Management, 5% of 16 tons @ \$115.00			92.00	7	
Investment	Per Acre	Annual Cost		Total	Percent of Cash Costs
		Depreciation	Interest (8%)		
Land	\$1,750.00		\$140.00		
Trees	1,250.00	\$104.17	50.00		
Irrigation system	175.00	7.00	7.00		
Buildings	75.00	3.00	3.00		
Equipment	552.83	61.28	21.65		
Total	\$3,802.83	\$175.45	\$221.65	\$ 397.10	31
TOTAL COST PER ACRE				\$1,752.86	
Cost per ton @ 16 ton yield				\$ 109.55	

*Labor: skilled, \$4.00, and part-time, \$2.80, include fringe costs.

TABLE 3. Costs per Ton and Net Income per Acre

Cost per Ton at Varying Yields					
Yield, tons per acre	12	16	20		
Cost	\$ 135	\$ 110	\$ 94		
Net Income per Acre at Varying Prices and Yields					
Yield (tons)	Price per Ton				
	\$ 105	\$ 110	\$ 115	\$ 120	\$ 125
12	-\$353	-\$296	-\$239	-\$182	-\$125
16	- 65	11	87	163	239
20	226	321	416	511	606

TABLE 4. Monthly Cash Flow for Cling Peaches
 Sacramento and San Joaquin Valley Area
 November 1974

Operation	Total	Month											
		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Cultural Costs													
Prune	\$ 143.45	\$47.81	\$ 47.83										\$ 47.81
Brush removal	14.86		7.43	\$ 7.43									
Wire and prop	21.35		10.67					\$ 10.68					
Spray, 7X	153.91	40.20		22.35		\$ 15.68		15.68	\$ 42.65			\$ 17.35	
Fertilizer	66.15		66.15										
Thin	201.65					201.65							
Cultivate	34.28			8.57		8.57		8.57		\$ 8.57			
Ridge and knock down	8.23				\$ 2.05	2.05		2.05		2.08			
Irrigate, 6X	44.35				7.39	7.39	\$ 7.39	7.39	7.39	7.40			
Miscellaneous	12.95	4.31						4.31			\$ 4.33		
Total Cultural Costs	\$ 701.18	\$92.32	\$132.08	\$ 38.35	\$ 9.44	\$235.34	\$ 7.39	\$ 48.68	\$ 50.04	\$ 18.05	\$ 4.33	\$ 17.35	\$ 47.81
Harvest Costs													
Pick and haul	353.40								353.40				
Cash Overhead													
Miscellaneous	63.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.30
Taxes	81.91			40.95									40.96
Market order	64.00								64.00				
Total Cash Overhead	\$ 209.18	\$ 5.27	\$ 5.27	\$ 46.22	\$ 5.27	\$ 5.27	\$ 5.27	\$ 5.27	\$ 69.27	\$ 5.27	\$ 5.27	\$ 5.27	\$ 46.26
TOTAL CASH COSTS	\$1,263.76	\$97.59	\$137.35	\$ 84.57	\$ 14.71	\$240.61	\$ 12.66	\$ 53.95	\$ 472.71	\$ 23.32	\$ 9.60	\$ 22.62	\$ 94.07
ACCUMULATED CASH COSTS			\$234.94	\$319.51	\$334.22	\$574.83	\$587.49	\$641.44	\$1,114.15	\$1,137.47	\$1,147.07	\$1,169.69	\$1,263.76

TABLE 5. Investment for Cling Peach Production
100-Acre Enterprise,
Sacramento and San Joaquin Valley Area

Item	November 1974 Values				
	100 acres		Per acre		
	Total costs	Years of life	Costs	Depreciation	Interest (8%)
Land	\$175,000	---	\$1,750.00	---	\$140.00
Trees (productive life)	125,000	12	1,250.00	\$104.17	50.00
Irrigation well and pump	17,500	25	175.00	7.00	7.00
Storage building	7,500	25	75.00	3.00	3.00
Equipment					
Tractor wheel, diesel, 60 hp	10,000	10	100.00	10.00	4.00
Tractors wheel, diesel, 25 hp (3 used)	4,500	5	45.00	9.00	1.80
Air blast sprayer, 500 gal.	9,280	10	92.80	9.28	3.71
Disc, 10 ft. 6 in.	2,900	10	29.00	2.90	1.16
Springtooth, 10 ft.	900	10	9.00	.90	.32
Ridger	650	10	6.50	.65	.23
Check breaker	200	10	2.00	.20	.07
Brush shredder	1,750	10	17.50	1.75	.61
Drag	400	10	4.00	.40	.14
Pickup truck, ¾ ton	4,500	10	45.00	4.50	1.80
Truck, 1½ ton (used)	1,500	5	15.00	3.00	.60
Water tank, 600 gal.	400	10	4.00	.40	.14
Pallet wagons, 6	3,600	10	36.00	3.60	1.26
Ladders, 40 @ \$36.00	1,440	10	14.40	1.44	.50
Props, 6,540 @ \$.82 (218/acre on 30 acres)	5,363	10	53.63	5.36	2.15
Wire for trees, 12 gauge 150 lbs./acre	5,400	10	54.00	5.40	2.16
Shop, tools, etc.	2,500	10	25.00	2.50	1.00
Total Equipment	55,283	---	552.83	61.28	21.65
TOTAL INVESTMENT	\$380,283	---	\$3,802.83	\$175.45	\$221.65

NOTES FOR TABLES 2, 3, 4, 5

Costs have increased since this study was completed early in 1974. The reader is urged to keep this in mind when comparing them to his present costs.

Labor rates are listed at \$4.00 per hour for skilled workers and \$2.80 per hour for semi-skilled. Social Security, Workmen's Compensation charges, and fringe costs like incentive

payments, housing, and transportation are included in these rates. Pruning, thinning, and picking are paid on a piecework basis. Harvest costs include the distribution and loading of bins with a tractor, pallet wagons and forklifts, picking, field grading, and supervision. These costs are included in the \$20.00-per-ton cost to harvest.

All labor is shown as hired.

Management's reward for the many decisions required in growing and harvesting a crop is 5 percent of the gross income (in this case, \$92.00 an acre), where a yield of 16 tons per acre and a price of \$115.00 per ton were used.

Fuel and repair costs are based on recent information from growers, equipment manu-

facturers, the Nebraska Tractor Tests, and the American Society of Agricultural Engineers.

Miscellaneous costs in the Cash Overhead section of table 4 (office, telephone, fire and liability insurance, pickup truck and other vehicles, interest on operating capital, and other items of small amounts when considered on a 1-acre basis) reflect a percentage of cultural and harvest costs.

COOPERATIVE EXTENSION
U.S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF CALIFORNIA
Berkeley, California 94720

OFFICIAL BUSINESS
Penalty for Private Use \$300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101
THIRD CLASS



AN EQUAL OPPORTUNITY EMPLOYER

UC Cooperative Extension