

# U.C. COOPERATIVE EXTENSION

## SAMPLE COSTS TO ESTABLISH AND PRODUCE CLING PEACHES CORDON TRAINED, HIGH DENSITY IN THE SACRAMENTO AND SAN JOAQUIN VALLEYS -1990

by

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The detailed costs for cordon trained, high density cling peach production in the Sacramento and San Joaquin Valleys is presented in this study. The hypothetical farm used in this report consists of 100 acres of which 40 acres are in cordon trained, high density cling peach production. The remainder of the farm is planted to a different tree crop.

Practices described are based on those production procedures considered typical for this crop and area. Sample costs given for labor, materials, equipment and contract services are based on 1990 figures. Some costs and practices detailed in this study may not be applicable to your situation. This study is only intended as a guide and can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans. A blank **Your Costs** column is provided to enter your actual costs on **Table 2. Sample Costs To Produce Cling Peaches.**

This study consists of **General Assumptions for Establishing and Producing Cordon Trained, High Density Cling Peaches** and five tables.

- Table 1. Sample Costs to Establish a Cling Peach Orchard**
- Table 2. Sample Costs to Produce Cling Peaches**
- Table 3. Monthly Summary of Per Acre Cash Costs to Produce Cling Peaches**
- Table 4. Equipment and Buildings List for Cling Peaches**
- Table 5. Ranging Analysis for Cling Peaches at Varying Prices and Off-Grades**

For an explanation of calculations used for the study refer to the attached General Assumptions, call the Department of Agricultural Economics, Cooperative Extension, University of California, Davis, California, (916) 752-3589 or call the Farm Advisor in the county of interest.

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**GENERAL ASSUMPTIONS FOR ESTABLISHING AND PRODUCING  
CORDON TRAINED, HIGH DENSITY CLING PEACHES  
Sacramento and San Joaquin Valleys - 1990  
U.C. Cooperative Extension**

The following is a description of some general assumptions pertaining to sample costs of cordon trained, high density cling peach production in the Sacramento and San Joaquin Valleys.

**1. LAND:**

Land is valued at \$5,000 per acre. There are 40 acres in the actual peach orchard with another 2.4 acres of roads and farmstead allocated to the peach orchard operation. This increases the cost of land to \$5,300 per producing acre. The farm includes an additional 60 acres of land planted to another tree crop such as almonds. Land is not depreciated.

**2. TREES:**

Trees are cordon trained and planted at 8' X 13.5' spacings, with 370 trees per acre.

**3. IRRIGATION & FERTILIZATION:**

The orchard is irrigated using a drip irrigation system. Water is pumped by a 20 hp motor from a 150 foot well. 3.5 acre-feet of water per year are applied to match ETO through harvest. Pumping costs are estimated at \$25 per acre foot. 50 lbs of nitrogen is applied through the irrigation water. Potassium is applied once every four years.

**4. PRUNING MANAGEMENT:**

Planting, which is done in January/February by the contractor, includes, laying out the field, planting trees, trimming back and placing tree protectors on the trees. First suckering and the selection of primary shoots is completed in the late spring/early summer. In September end stakes are set, the tree rope is tied, summer pruning is completed and cordons are bent on to the rope.

In each of the following years one primary dormant pruning and one summer pruning are done.

**5. PEST MANAGEMENT:**

Insect and disease pest management for a producing orchard assumes a dormant pesticide application in January for peach twig borer, scale and shothole fungus. Fungicide sprays in February, March and again in August are to prevent brown rot and shothole diseases. Insecticide sprays in May, June and July are for control of oriental fruit moth, peach twig borer, omnivorous leafroller, mites and other pests. A fungicide spray for peach leaf control is applied in November.

Herbicides are applied in November as a pre-emergent weed control and again in April along the tree strips for spring weed control. Weeds in the middle, between tree rows, are controlled mechanically by disking or mowing. Actual pest management practices will vary from grower to grower. The above mentioned practices should not be construed as recommendations

## **6. LABOR:**

Hourly wages for workers are \$5.97 and \$4.25 per hour for skilled and field workers respectively. Adding 34% for SDI, FICA, insurance and other benefits gives the labor rates shown of \$8.00 per hour for skilled labor and \$5.70 per hour for field labor. The labor for operations involving machinery are 10% higher than the machine hours to account for the extra labor involved in equipment set-up, moving, maintenance and repair.

## **7. OVERHEAD:**

County taxes are calculated as 1% of the land value plus 1% of the average of the trees, equipment, buildings and improvements. Insurance is charged at 0.8% of the average value of the equipment over its useful life. Office and business costs are estimated at \$6,000 per year for the whole ranch and include office supplies, phone, bookkeeping, accounting, legal fees, etc.

## **8. INTEREST:**

Interest on operating capital is based on cash costs and is calculated monthly until harvest at the rate of 12% per year. Interest is also charged on investment at 12% per year to account for income foregone that could be received from an alternative investment (opportunity cost) and is based on the value of the of the land plus the average value of the trees over the life of the orchard, buildings and equipment.

## **9. EQUIPMENT COSTS:**

In allocating the equipment costs per acre, the following calculations were made and shown in **Table 4**: (a) Original Cost of equipment is the cost of the new equipment plus sales tax. (b) Depreciation is straight line with a 10 % salvage value. (c) Interest on investment is calculated as one-half of the new cost per acre (the average value of the equipment during its useful life) multiplied by an interest rate of 12%. (d) The total investment costs are also calculated as 60% of the depreciation and the interest costs for all new equipment to reflect a mix of the new and used equipment. These values are also used in **Table 2**. Most of this equipment is used on the entire 100 acre ranch.

## **10. FUEL & REPAIR:**

The fuel and repair cost for each operation is determined by multiplying the total hourly operating cost for each piece of equipment by the number of hours per acre for that operation. The equipment used for an operation is identified by the number listed in the Item No. column on **Table 2** which corresponds to the Item No. column on **Table 4**.

## **11. MISCELLANEOUS:**

Pickup truck costs operating costs are based on 8,000 miles per year of use at \$0.15 per mile.

Table 1. U.C. COOPERATIVE EXTENSION  
SAMPLE COSTS PER ACRE TO ESTABLISH A CLING PEACH ORCHARD  
SACRAMENTO & SAN JOAQUIN VALLEYS - 1990  
Cordon Trained - High Density

YEAR	Costs per Acre					
	1st	2nd	3rd	4th	5th	6th
YIELD (Tons/acre)	0	5	11	17	23	28
<b>Planting costs</b>						
Land preparation: subsoil & level - contract	\$160					
Disk and float: 4 hours - labor and tractor	76					
Trees: 370 @ \$3.50 (2% 2nd Yr & 1% 3rd Yr )	1,295	\$26	\$13			
Survey and plant: 370 @ \$1.00	370	3	2			
Fumigate: (methyl bromide)	500					
<b>TOTAL PLANTING COSTS</b>	<b>\$2,401</b>	<b>\$29</b>	<b>\$14</b>			
<b>Cultural costs:</b>						
Prune and train (unskilled hand labor)	\$95	\$57	\$165	\$239	\$239	\$239
Brush disposal	10	20	30	40	40	40
Put up borders	30					
Mow & disc middles	12	12	12	12	12	12
Weed control sprays (material & application)		51	68	68	68	68
Irrig. labor: 4 hrs. 1st yr, 2.5 hr yrs 2+	23	14	14	14	14	14
Water @ \$25/acft	25	30	40	70	90	90
Fertilizer: Nitrogen \$0.25/lb	12	15	20	25	30	30
: Potassium \$0.16/lb, every 4th yr				160		
: Labor for fertilization	7	7	7	31	7	7
Pest control sprays	30	252	252	252	252	252
Custom application	7	26	26	26	26	39
Miscellaneous labor and power - 1 hour	8	8	8	8	8	8
Pick-up truck costs	23	23	23	23	23	23
Thinning		23	162	250	338	412
<b>TOTAL CULTURAL COSTS</b>	<b>\$280</b>	<b>\$537</b>	<b>\$826</b>	<b>\$1,217</b>	<b>\$1,147</b>	<b>\$1,233</b>
<b>Harvesting Costs:</b>						
Bin handling ----- \$1.31 per Ton		\$7	\$14	\$22	\$30	\$37
Forklift ----- \$800.00 per week		40	40	40	40	40
Hand picking ----- \$25.00 per Ton		125	275	425	575	700
Field sorting ----- \$2.75 per Ton		14	30	47	63	77
Hauling, to grade station ----- \$2.62 per Ton		13	29	45	60	73
<b>TOTAL HARVEST COSTS</b>	<b>\$0</b>	<b>\$198</b>	<b>\$388</b>	<b>\$579</b>	<b>\$769</b>	<b>\$927</b>
<b>Overhead Costs:</b>						
Office and business costs	60	60	60	60	60	60
County taxes	58	63	63	63	63	63
Insurance	7	10	10	10	10	10
<b>TOTAL OVERHEAD COSTS</b>	<b>\$125</b>	<b>\$133</b>	<b>\$133</b>	<b>\$133</b>	<b>\$133</b>	<b>\$133</b>
<b>TOTAL CASH COSTS</b>	<b>\$2,806</b>	<b>\$898</b>	<b>\$1,362</b>	<b>\$1,929</b>	<b>\$2,048</b>	<b>\$2,293</b>
<b>INCOME FROM PRODUCTION @ \$225/TON</b>		<b>\$1,125</b>	<b>\$2,475</b>	<b>\$3,825</b>	<b>\$5,175</b>	<b>\$6,300</b>
<b>NET CASH COSTS FOR THE YEAR</b>	<b>\$2,806</b>					
<b>PROFIT ABOVE CASH COSTS</b>		<b>\$227</b>	<b>\$1,113</b>	<b>\$1,896</b>	<b>\$3,127</b>	<b>\$4,007</b>
<b>ACCUMULATED NET CASH COSTS</b>	<b>\$2,806</b>	<b>\$2,578</b>	<b>\$1,465</b>			
<b>ACCUMULATED PROFITS ABOVE NET CASH COSTS</b>				<b>\$431</b>	<b>\$3,127</b>	<b>\$4,007</b>
<b>Depreciation:</b>						
Buildings, equipment and irrigation system	95	95	95	95	95	95
<b>TOTAL DEPRECIATION</b>	<b>\$95</b>	<b>\$95</b>	<b>\$95</b>	<b>\$95</b>	<b>\$95</b>	<b>\$95</b>
<b>Interest on Investment</b>						
Buildings, equipment and irrigation system	199	309	309	309	309	309
Land \$5000/acre	600	600	600	600	600	600
Interest on accumulated cash costs	337	444	473	459	621	756
<b>TOTAL INTEREST ON INVESTMENT</b>	<b>\$1,136</b>	<b>\$1,354</b>	<b>\$1,382</b>	<b>\$1,368</b>	<b>\$1,530</b>	<b>\$1,665</b>
<b>TOTAL COST FOR THE YEAR</b>	<b>\$4,036</b>	<b>\$2,346</b>	<b>\$2,839</b>	<b>\$3,392</b>	<b>\$3,674</b>	<b>\$4,054</b>
<b>CREDIT FROM HARVEST @ \$225/TON</b>		<b>\$1,125</b>	<b>\$2,475</b>	<b>\$3,825</b>	<b>\$5,175</b>	<b>\$6,300</b>
<b>NET COST FOR THE YEAR</b>	<b>\$4,036</b>	<b>\$1,221</b>	<b>\$364</b>			
<b>NET PROFIT FOR THE YEAR</b>				<b>\$433</b>	<b>\$1,501</b>	<b>\$2,246</b>
<b>TOTAL ACCUMULATED NET COST</b>	<b>\$4,036</b>	<b>\$5,257</b>	<b>\$5,622</b>	<b>\$5,189</b>	<b>\$3,688</b>	<b>\$1,442</b>
<b>TOTAL ACCUMULATED PROFIT</b>						

Table 2.

U.C. COOPERATIVE EXTENSION  
 COSTS PER ACRE TO PRODUCE CLING PEACHES  
 SACRAMENTO & SAN JOAQUIN VALLEY - 1990  
 Cordon Trained - High Density

Labor Rate: \$8.00/hr. skilled labor  
 \$5.70/hr. field labor  
 Interest Rate: 12%  
 Yield - (Gross tons/A): 28.0

Operation	Item No.	Hours	Cash and Labor Costs per Acre				Total Cost	Your Cost
			Labor Cost/A	Fuel & Repairs	Material Cost	Custom/ /Rent		
Pruning						\$239.19	\$239	
Shred brush	1 8	1.8	\$15.40	\$14.50			30	
Dormant spray	1 6	.3	2.90	3.70	\$45.00		52	
Bloom spray 2X	1 6	.7	5.81	7.39	55.00		68	
OFM 3X	1 6	1.0	8.71	11.09	53.25		73	
Pre-harvest brown rot	1 6	.3	2.90	3.70	25.50		32	
Weed control	1 7	.2	1.76	1.66	64.40		68	
Thin						411.88	412	
Fertilize (50# N @ \$.25)	2 7	.2	1.76	1.00	12.50		15	
Potassium (1 of 4 yrs)	2	.1	.44	.15	40.00		41	
Mow or disc 3X	1 3	1.5	13.20	8.15			21	
Irrigation (3.5')	14 16				87.50		88	
Labor		2.5	14.24				14	
Backhoe		.3				13.00	13	
Remove tree and burn	1	.3	2.00	.97			3	
Fumigate and replant tree	2	.2	1.71	.58	5.25		8	
Costs for pick up truck	15 16				22.50		23	
Miscellaneous		2.0	13.70	7.00			21	
Interest on operating capital @ 12% x 6 months							67	
TOTAL CULTURAL COSTS			11	\$85	\$82	\$388	\$664	\$1,286
=====								
Harvest Costs								
Bin handling	2 12	1.0	\$8.80	\$2.91			\$12	
extra labor		1.0	5.70			\$0	6	
Hand pick	\$ 26.00/ton					728	728	
Field sorting	\$ 3.00/ton					84	84	
Rent forklift	\$ 1.43/ton					40	40	
Hauling to grade station			37.34	7.00			44	
Harvest supervision		2.0	16.00				16	
TOTAL HARVEST COSTS			4.0		\$10	\$852	\$930	
=====								
Cash overhead:								
Office and business costs							\$60	
County taxes							71	
Insurance							31	
Marketing order assessment @ \$5.50 per ton							154	
TOTAL CASH OVERHEAD COSTS							\$317	
=====								
TOTAL CASH COSTS							\$2,533	
=====								
Investment								
	Per production Acre		Annual Cost					
			Depreciation	Interest @ 12%				
Land (bare)	\$5,000			\$600			\$600	
Roads and farmstead	300			\$36			\$36	
Equipment and buildings	1,658		\$95	\$199			294	
Trees (15 yr. depreciation)	2,578		\$172	\$309			481	
TOTAL INVESTMENT COSTS			\$ 9,536	\$267	\$1,144		\$1,411	
=====								
TOTAL COSTS PER ACRE							\$3,944	
TOTAL COST/PAID-FOR TON @ 26.0 Paid-for tons/acre (28 gross tons/acre, 7% off grade)							\$151.46	
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Table 3.

U.C. COOPERATIVE EXTENSION  
MONTHLY CASH COSTS PER ACRE TO PRODUCE CLING PEACHES  
SACRAMENTO & SAN JOAQUIN VALLEYS - 1990  
Cordon Trained - High Density

Operation	\$/acre												TOTAL
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Pruning		\$79.7					\$79.7			\$79.7			\$239
Shred brush		10.0					10.0			10.0			30
Dormant spray		51.6											52
Bloom spray 2X			\$30.7	\$37.5									68
OFM 3X						\$24.4	24.4	\$24.4					73
Brown rot									\$32.1				32
Weed control					\$67.8								68
Thin						411.9							412
Fertilize (50# N)				3.8		3.8							8
Potassium (1/4 yrs.)												\$40.6	41
Mow and disc 3X			7.1			7.1				7.1			21
Irrigation (3.5')					14.6	14.6	14.6	14.6	14.6	14.6	14.6		88
Labor					2.4					14.6			17
Replant and remove												3.0	3
Miscellaneous		.6	.6	.6	.6	.6	.6	.6	.6	.6	\$.6	.6	7
Pick-up truck costs		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	21
Interest on operating capital		1.4	1.9	2.3	3.2	7.9	9.3	9.8	19.7	21.1			77
<b>TOTAL CULTURAL COST</b>	<b>\$0</b>	<b>\$145</b>	<b>\$42</b>	<b>\$46</b>	<b>\$90</b>	<b>\$472</b>	<b>\$140</b>	<b>\$51</b>	<b>\$69</b>	<b>\$150</b>	<b>\$3</b>	<b>\$46</b>	<b>\$1,255</b>
=====													
Harvest Costs (28 tons/Ac):													
Bin handling									11.7				12
extra labor									5.7				6
Hand pick									728.0				728
Field sorting									84.0				84
Rent forklift									40.0				40
Hauling (12 bins/trip)									44.3				44
Harvest supervision									16.0				16
<b>TOTAL HARVEST COSTS</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$930</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$930</b>
=====													
Cash overhead:													
Office and business	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	60
County taxes													
Equipment insurance													
Advisory board assessment											154.0		154
<b>TOTAL CASH OVERHEAD</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$5</b>	<b>\$159</b>	<b>\$5</b>	<b>\$214</b>
=====													
<b>TOTAL CASH COSTS</b>	<b>\$5</b>	<b>\$150</b>	<b>\$47</b>	<b>\$51</b>	<b>\$95</b>	<b>\$477</b>	<b>\$145</b>	<b>\$56</b>	<b>\$1,004</b>	<b>\$155</b>	<b>\$162</b>	<b>\$51</b>	<b>\$2,399</b>
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Table 4.

U.C. COOPERATIVE EXTENSION  
EQUIPMENT AND BUILDING LIST COSTS  
SACRAMENTO & SAN JOAQUIN VALLEYS - 1990  
Cordon Trained - High Density

Interest Rate: 12%

Fuel Cost per Gallon \$ .85 diesel  
\$1.00 unleaded

Item #	Description	New Cost	Annual Use (Acres)	Cost Per Acre	Life (Hrs)	Years To Trade	---OVERHEAD*---		--- HOURLY COSTS ---			
							Depreciation	Interest*	TAR*	Fuel*	Repairs*	Total
Tractors:												
1	65 hp wheel diesel	\$25,000	100	\$250	12,000	15	\$16.67	\$15.00	120%	\$3.70	\$2.50	\$6.20
2	30 hp wheel	12,000	100	120	12,000	15	8.00	7.20	120	1.71	1.20	2.91
3	Disc, offset 8'	4,050	100	41	2,500	10	4.05	2.43	120		1.94	1.94
4	Ringroller, 8'	1,500	100	15	2,500	10	1.50	.90	120		.72	.72
5	Float, 8'	9,500	100	95	2,500	10	9.50	5.70	60		2.28	2.28
6	Orchard sprayer, PTO 500 gal	12,500	100	125	2,000	10	12.50	7.50	80		5.00	5.00
7	Weedsprayer, 100 gal	2,500	100	25	1,200	10	2.50	1.50	100		2.08	2.08
8	Brush shredder, 8'	6,000	100	60	2,500	10	6.00	3.60	100		2.40	2.40
9	3 point blade	1,000	100	10	2,500	10	1.00	.60	100		.40	.40
10	Bin trailers - 5	4,100	40	103		20	5.13	6.15				
11	Buckets - 25	125	40	3		5	.63	.19				
12	Irrigation pump, 20 hp	9,000	40	225		20	11.25	13.50				
13	Well, 150'	10,000	40	250		35	7.14	15.00				
14	Drip irrigation system	31,000	40	775		35	22.14	46.50				
15	Pickup, 3/4 ton	14,000	100	140		7	20.00	8.40				
16	Pick-up, 1/2 ton (used)	2,500	100	25		4	6.25	1.50				
17	ATV	2,200	100	22		5	4.40	1.32				
18	Implement trailer	5,000	100	50		20	2.50	3.00				
19	Miscellaneous shop tools	5,000	100	50		10	5.00	3.00				
20	Fuel storage tanks - 2	10,000	100	100		35	2.86	6.00				
21	Chemical storage shed	3,000	100	30		30	1.00	1.80				
	Shop building	25,000	100	250		30	8.33	15.00				
TOTAL COST		\$194,975		\$2,763			\$158	\$166				
60% OF NEW COSTS*		\$116,985		\$1,658			\$95	\$99				

\* DEFINITIONS:

LIFE IN HOURS ----- Derived from the "American Society of Agricultural Engineers Yearbook of Standards".  
 YEARS TO TRADE----- The projected life of the machine in years adjusted for excessive annual use.  
 OVERHEAD ----- Per acre per year.  
 DEPRECIATION ----- "COST PER ACRE" divided by "YEARS TO TRADE"  
 INTEREST----- ("COST PER ACRE" X "INTEREST RATE") divided by 2 = average interest cost per acre per year.  
 TAR----- Total accumulated repairs. The total cost of repairs during the machine's life expressed as a percent of "NEW COST". Calculated from equations based on equipment type and annual use.  
 HOURLY COST OF FUEL----- Diesel fuel, oil and lube costs per hour = HP x cost of diesel fuel/gal X 0.0667.  
 Gasoline fuel, oil and lube costs per hour = HP x cost of gasoline/gal X 0.0889.  
 HOURLY COST OF REPAIRS-- ("NEW COST" X "TAR") divided by ("LIFE IN HOURS").  
 60% OF NEW COSTS ----- Used to reflect a mix of new and used equipment.

Table 5.

U.C. COOPERATIVE EXTENSION  
RANGING ANALYSIS  
SACRAMENTO & SAN JOAQUIN VALLEYS - 1990  
Cordon Trained - High Density

Gross Yield: 28 Tons per Acre

COST TO PRODUCE CLING PEACHES

	26.6	26.0	25.5
YIELD (Paid-for tons/acre)	26.6	26.0	25.5
OFF-GRADE	5%	7%	9%
Cultural Costs	1,286	1,286	1,286
Harvest Costs	928	927	926
Cash Overhead	317	317	317
Cash cost/acre	2,531	2,530	2,529
Cash cost/ton	95	97	99
Investment cost	1,411	1,411	1,411
TOTAL COST/ACRE	3,942	3,941	3,940
TOTAL COST/TON	148	151	155

PER ACRE INCOME ABOVE CASH COSTS

Dollars per Ton	YIELD (Paid-for Tons/Acre)	26.6	26.04	25.48
170	1,991	1,897	1,803	
180	2,257	2,158	2,058	
190	2,523	2,418	2,312	
200	2,789	2,678	2,567	
210	3,055	2,939	2,822	
220	3,321	3,199	3,077	
230	3,587	3,460	3,332	

PER ACRE INCOME ABOVE TOTAL COSTS

Dollars per Ton	YIELD (Paid-for Tons/Acre)	26.6	26.04	25.48
170	580	486	392	
180	846	746	646	
190	1,112	1,007	901	
200	1,378	1,267	1,156	
210	1,644	1,528	1,411	
220	1,910	1,788	1,666	
230	2,176	2,048	1,920	