

1987
WHOLE FARM TREE MODEL - SAMPLE PRODUCTION COSTS
Yolo and Solano Counties

by

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This cost study provides detailed information on the sample costs of producing various tree crops in Yolo and Solano Counties. For the purposes of this study, a hypothetical 205 acre orchard with 200 acres under production is considered. The 200 acres is planted in equal thirds with walnuts, almonds and prunes leaving the remaining 5 acres for roads and burn area.

Included in this study are Production Cost Assumptions, a Cost of Production Worksheet and a Monthly Summary of Sample Costs for each crop; a List of General Assumptions; and an Equipment List containing machinery, building and other costs shared on the 200 acre orchard. Costs given in this sample study are for those of a typical well managed orchard in Yolo or Solano County and are not intended to reflect an average of all orchards in these counties.

Practices listed 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 1987 figures. Some costs or practices listed in this study may not be applicable to your situation. The study is intended only as a guide and can be used as an aid 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 the Cost of Production Worksheets.

For explanation of calculations used for the study refer to the attached cost estimate assumptions or call Agricultural Economics Extension, University of California, Davis, California (916) 752-2745.

GENERAL PRODUCTION COST ASSUMPTIONS FOR 200 ACRE WHOLE FARM TREE MODEL
Yolo and Solano Counties - 1987

The following list contains a detailed description of the equipment, time requirement, and other assumptions pertaining to the costs of production for a sample orchard in Yolo or Solano County.

1. Labor rates include 34% for benefits (SDI, FICA, Insurance, holidays, etc.):

Machinery operators:	\$6.50/hr
Irrigators:	\$6.50/hr
Misc. Labor:	\$5.00/hr

2. The number of trees per acre and spacing is as follows:

Walnuts -	48 trees/acre - 30' X 30' spacing.
Almonds -	75 trees/acre - 24' X 24' spacing.
Prunes -	108 trees/acre.

3. Irrigation:

Sprinkler irrigation system for 200 acres includes:

Pipeline \$400/acre x 200 acres =	\$ 80,000
300 ft Well and 100 HP Pump	<u>25,000</u>
	\$105,000

Irrigation labor - 0.5 hr/application/acre @ \$5.00/hr x 7 = \$ 17.50/acre

Electricity - @ 65% plant efficiency = \$107.94/acre

7 Irrigations - 35 ac in total

Pump capacity - 1100 gal/min = 2431 ac.in./hr

2.0567 hrs/acre/irr. X 7 irr. = 14.4 hrs/acre

4. County taxes: (1% of land + equipment and building costs) = \$ 32.52/acre

5. Pickup: 75 miles/acre/yr. Repairs \$3.09/acre + Fuel \$7.76/acre=\$10.85/acre

6. Buildings and equipment:

	<u>200 acres</u>	<u>Per acre</u>
Building for equipment (1,200 sq.ft.)	\$24,000	\$120.00
Shop and tools	\$ 4,000	\$ 20.00
Insurance for equipment - 60% of new cost @ 0.5% =	\$ 690	\$ 3.45

7. Equipment costs:

In allocating the equipment costs per acre, the following calculations were made: (a) "Original Cost" of equipment is the new cost including sales tax. (b) "Depreciation" is the new cost per acre divided by the years of life. (c) "Interest" on investment is figured as one-half of the new cost per acre multiplied by the interest rate. One-half of the new cost is the average value of the equipment during its useful life. (d) The investment per acre used in the cost study is calculated at 60% of the depreciation and interest costs for all new equipment to reflect a mix of new and used equipment.

PRODUCTION COST ASSUMPTIONS FOR WALNUTS

Yolo and Solano Counties - 1987

The following list contains a detailed description of the equipment, time requirement, amount and type of materials used and other assumptions pertaining to the sample costs of producing walnuts in Yolo or Solano County.

1. Prune in December:

Equipment: Pruning tower and misc. pruning equipment
 @ \$0.27/hr x 6.5 hrs/acre = \$ 1.76/acre.
 Labor: 6.5 hours/acre @ \$6.50/hour = \$42.25/acre.

2. Brush removal in January:

Equipment: Chain saw - .75 hr/acre @ \$ 0.09/hr = \$ 0.07/acre
 Brush rake on 45 HP tractor - 1 hr @ \$3.52/hr = \$ 3.52/acre
 Labor: 2.0 hours/acre @ \$6.50/hour = \$13.00/acre

3. Herbicide Materials:

Date	Material	Rate/acre Applied	Cost/unit	% Acreage Treated	Cost/acre
Nov	Sterilant	4 lbs	\$12.60/lb	25%	\$12.60
	Roundup	1 qt	\$87.00/gal	25%	\$ 5.44
	Surfactant				\$ 0.25
Jul	Roundup	1 qt	\$87.00/gal	25%	\$ 5.44
	Surfactant				\$ 0.25
Aug	Roundup	1 qt	\$87.00/gal	25%	\$ 5.44
	Surfactant				\$ 0.25
Sep	Roundup	0.5 gal	\$87.00/gal	75%	\$32.63
	Surfactant				\$ 0.75

Herbicide Application and Labor:

Date	Description	Hours/acre	\$/hour	Cost/acre
Nov	45 HP tractor	0.5	\$3.12	\$ 1.56
	Weedsprayer	0.5	\$1.67	\$ 0.83
	Labor	0.5	\$6.50	\$ 3.25
Jul	3 wheel cycle	0.5	\$1.56	\$ 0.78
	Small sprayer	0.5	\$0.49	\$ 0.25
	Labor	0.5	\$6.50	\$ 3.25
Aug	3 wheel cycle	0.5	\$1.56	\$ 0.78
	Small sprayer	0.5	\$0.49	\$ 0.25
	Labor	0.5	\$6.50	\$ 3.25
Sep	45 HP tractor	0.5	\$3.12	\$ 1.56
	Weedsprayer	0.5	\$1.67	\$ 0.83
	Labor	0.5	\$6.50	\$ 3.25

Herbicide Summary:

<u>Date</u>	<u>Materials</u>	<u>Application</u>	<u>Labor</u>	<u>Total</u>
Nov	\$18.29	\$ 2.39	\$ 3.25	\$23.93
Jul	\$ 5.69	\$ 1.03	\$ 3.25	\$ 9.97
Aug	\$ 5.69	\$ 1.03	\$ 3.25	\$ 9.97
<u>Sep</u>	<u>\$33.38</u>	<u>\$ 2.39</u>	<u>\$ 3.25</u>	<u>\$39.02</u>
Total	\$63.05	\$ 6.84	\$13.00	\$82.89

4. Pest and Disease Sprays:

<u>Date</u>	<u>Material</u>	<u>Rate/acre Applied</u>	<u>Cost/unit</u>	<u>Cost/acre</u>
Mar	Blight spray	16 lbs	\$ 1.94/lb	\$31.04
Apr	Blight spray	16 lbs	\$ 1.94/lb	\$31.04
May	Blight spray	16 lbs	\$ 1.94/lb	\$31.04
	Codling moth spray	1 gal	\$32.94/gal	\$32.94
Jun	Codling moth spray	1 gal	\$32.94/gal	\$32.94
Aug	Malithion	1 qt	\$25.81/gal	\$ 6.45
	New Lure	1 qt	\$13.44/gal	\$ 3.36

Application and Labor (5 times - Mar, Apr, May, Jun, Aug):

<u>Description</u>	<u>Hours/acre</u>	<u>\$/hour</u>	<u>Cost/acre</u>
70 HP tractor	0.3	\$5.50	\$ 1.65
Speed sprayer - pto	0.3	\$8.64	\$ 2.59
Labor	0.3	\$6.50	\$ 1.95

Pest and Disease Spray Summary:

<u>Date</u>	<u>Materials</u>	<u>Application</u>	<u>Labor</u>	<u>Total</u>
Mar	\$31.04	\$ 4.24	\$ 1.95	\$37.23
Apr	\$31.04	\$ 4.24	\$ 1.95	\$37.23
May	\$63.98	\$ 4.24	\$ 1.95	\$70.17
Jun	\$32.94	\$ 4.24	\$ 1.95	\$39.13
<u>Aug</u>	<u>\$ 9.81</u>	<u>\$ 4.24</u>	<u>\$ 1.95</u>	<u>\$16.00</u>
Total	\$168.81	\$21.20	\$ 9.75	\$199.76

5. Rodent control in April:

Materials: Poison Grains @ \$0.50/acre

Time & Equipment: rent gopher machine at \$0.50/acre

45 HP tractor-0.5 hr/acre @ 3.12/hr = \$1.56/acre

6. Fertilize in May through sprinkler system:

Materials: 200 lbs N @ \$0.30/lb = \$60/acre

7. Mow weeds in April, June, August, and September:

Equipment: 70 HP tractor and mower @ \$8.38/hour

x 0.5 hrs/acre x 4 = \$16.76/acre

Labor: 0.5 hrs/acre @ \$6.50/hr x 4 = \$13.00/acre

8. Irrigation:

<u>Month</u>	<u>March</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>Total</u>
# Irrigations	1x	1x	2x	2x	1x	7x
Amount (ac.in.)	5	5	10	10	5	35

9. Harvest In August:

Custom harvest - 3000 lbs/acre

Shake, Sweep, Pickup, Haul (Custom) = \$ 150.00/acre

Hull and dry \$85/ton x 1.5 ton/acre = \$ 127.50/acre

10. Establishment costs =

\$7700/acre

The establishment costs are divided by 40 years. Interest on investment is calculated at 12%. The annual costs of investment in the trees are: \$192.50 depreciation + \$462.00 interest per acre.

SAMPLE COSTS TO PRODUCE ENGLISH WALNUTS

Yolo and Solano Counties - 1987

Labor Rate: 6.50/hr. skilled labor Interest Rate: 12.00%
 5.00/hr. field labor Yield: 3,000 lbs/acre (dry in shell)

Operation	Hours per Acre	Cash and Labor Costs per Acre			Total Cost	Your Cost
		Labor	Fuel & Repairs	Materials Kind and Quantity		
Cultural costs:						
Pruning	6.5	\$42.25	\$1.76		\$44	
Brush Removal	2.0	13.00	3.59		17	
Herbicide (4X)				Materials	\$63	63
Application costs	2.0	13.00	6.84		28	
Pest/Disease Sprays (5X)				Materials	169	169
Application costs	1.5	9.75	21.28		31	
Rodent control	.5	3.25	1.56	Materials + Rent machine	1	6
Fertilize via sprinkler				200 lbs. N @ .30/lb.	60	60
Mowing (4X)	2.0	13.00	16.76		39	
Irrigation (7 X 5")	3.5	17.50	11.95	Pump costs for 35 ac.in.	100	137
Costs for pick up truck			10.85			11
Interest on operating capital @ 12.00% for 6 months						35
TOTAL CULTURAL COSTS	18.0	\$112	\$75		\$401	\$622
Harvest Costs:						
Harvest				Custom harvest - \$150/acre		\$150
Hull and dry				Custom - \$85/ton		128
TOTAL HARVEST COSTS						\$278
Cash overhead:						
Office and business costs						\$78
County Taxes						33
Equipment Insurance						3
TOTAL CASH OVERHEAD COSTS						\$106
TOTAL CASH COSTS						\$1,006
TOTAL CASH COST PER TON						\$671
Investment						
		Per Production Acre		Annual Cost		
				Depreciation	Interest @ 12.00%	
Land @ \$2,500/Acre		\$2,562			\$387	\$387
Equipment & buildings		690		\$55	41	96
Trees (40 yr. depreciation)		7,700		193	462	655
TOTAL INVESTMENT COSTS		\$10,952		\$247	\$811	\$1,058
TOTAL COSTS PER ACRE						\$2,064
Cost per ton @ 3,000 lbs. yield						\$1,376

MONTHLY SUMMARY OF
SAMPLE COSTS TO PRODUCE ENGLISH WALNUTS
Yolo and Solano Counties - 1987

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Cultural costs:													
Pruning												\$44	\$44
Brush Removal	\$17												17
Herbicide (4X)							\$6	\$6	\$33		\$18		63
Application costs							4	4	6		6		28
Pest/Disease Sprays (5X)			\$31	\$31	\$64	\$33		18					169
Application costs			6	6	6	6		6					31
Rodent control				6									6
Fertilize via sprinkler					60								60
Mowing (4X)				7		7			7	\$7			38
Irrigation (7 X 5")			28		28	39	39	28					137
Costs for pick up truck	1	\$1	1	1	1	1	1	1	1	1	1	1	11
Interest on operating capital	3	3	3	3	3	3	3	3	3	3	3	3	35
TOTAL CULTURAL COSTS	\$28	\$4	\$61	\$54	\$154	\$98	\$53	\$49	\$58	\$11	\$28	\$48	\$622
Harvest Costs:													
Harvest								150					150
Hull and dry								128					128
TOTAL HARVEST COSTS								\$278					\$278
Cash overhead:													
Office and business costs	6	6	6	6	6	6	6	6	6	6	6	6	78
County Taxes				16								16	33
Equipment Insurance	3												3
TOTAL CASH OVERHEAD COSTS	\$9	\$6	\$6	\$22	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$22	\$106
TOTAL CASH COSTS	\$38	\$10	\$67	\$76	\$159	\$95	\$59	\$333	\$56	\$17	\$34	\$70	\$1,086

PRODUCTION COST ASSUMPTIONS FOR ALMONDS

Yolo and Solano Counties - 1987

The following list contains a detailed description of the equipment, time requirement, amount and type of materials used and other assumptions pertaining to the sample costs of producing almonds in Yolo or Solano County.

1. Prune in December:

Equipment: Pruning tower (5 hrs), chain saws and misc. pruning equipment
 @ \$0.24/hr x 5 hrs/acre + \$0.12/hr x 10 hrs = \$ 2.40/acre.
 Labor: 10 hours/acre @ \$5.00/hour = \$50.00/acre.

2. Push brush in December:

Equipment: Brush rake on 45 HP tractor - 1 hr @ \$3.52/hr = \$ 3.52/acre
 Labor: 2.0 hours/acre @ \$6.50/hour = \$13.00/acre

3. Poling in December and August:

Labor: 2 x 8 hours/acre x \$5.00/hr = \$80.00/acre

4. Herbicide Materials:

Date	Material	Rate/acre Applied	Cost/unit	% Acreage Treated	Cost/acre
Nov	Sterilant	4 lbs	\$12.60/lb	25%	\$12.60
	Roundup	1 qt	\$87.00/gal	25%	\$ 5.44
	Surfactant				\$ 0.25
Jun	Roundup	1 qt	\$87.00/gal	25%	\$ 5.44
	Surfactant				\$ 0.25
Jul	Roundup	0.5 gal	\$87.00/gal	75%	\$32.63
	Surfactant				\$ 0.75

Herbicide Application and Labor:

Date	Description	Hours/acre	\$/hour	Cost/acre
Nov	45 HP tractor	0.5	\$3.12	\$ 1.56
	Weedsprayer	0.5	\$1.67	\$ 0.83
	Labor	0.5	\$6.50	\$ 3.25
Jun	3 wheel cycle	0.5	\$1.56	\$ 0.78
	Small sprayer	0.5	\$0.49	\$ 0.25
	Labor	0.5	\$6.50	\$ 3.25
Sep	45 HP tractor	0.5	\$3.12	\$ 1.56
	Weedsprayer	0.5	\$1.67	\$ 0.83
	Labor	0.5	\$6.50	\$ 3.25

Herbicide Summary:

<u>Date</u>	<u>Materials</u>	<u>Application</u>	<u>Labor</u>	<u>Total</u>
Nov	\$18.29	\$ 2.39	\$ 3.25	\$23.93
Jun	\$ 5.69	\$ 1.03	\$ 3.25	\$ 9.97
<u>Jul</u>	<u>\$33.38</u>	<u>\$ 2.39</u>	<u>\$ 3.25</u>	<u>\$39.02</u>
Total	\$57.36	\$ 5.81	\$ 9.75	\$72.92

5. Pest and Disease Sprays:

<u>Date</u>	<u>Material</u>	<u>Rate/acre Applied</u>	<u>Cost/unit</u>	<u>Cost/acre</u>
Dec	Diazinon	4 lbs	\$ 4.27/lb	\$17.08
	Oil	6 gal	\$ 2.39/gal	\$14.34
Feb	Bloom spray	1 lb	\$21.32/lb	\$21.32
Feb	Post Bloom spray	1 gal	\$10.09/gal	\$10.09
May	Summer spray	4 lbs	\$ 7.70/lb	\$30.80
Jul	Miticide	5 lbs	\$ 4.26/lb	\$21.30

Application and Labor - (5 times - Dec, Feb, Feb, May, Jul):

<u>Description</u>	<u>Hours/acre</u>	<u>\$/hour</u>	<u>Cost/acre</u>
70 HP tractor	0.3	\$5.50	\$ 1.65
Speed sprayer - pto	0.3	\$8.64	\$ 2.59
Labor	0.3	\$6.50	\$ 1.95

Pest and Disease Spray Summary:

<u>Date</u>	<u>Materials</u>	<u>Application</u>	<u>Labor</u>	<u>Total</u>
Dec	\$31.42	\$ 4.24	\$ 1.95	\$37.61
Feb	\$21.32	\$ 4.24	\$ 1.95	\$27.51
Feb	\$10.09	\$ 4.24	\$ 1.95	\$16.28
May	\$30.80	\$ 4.24	\$ 1.95	\$36.99
<u>Jul</u>	<u>\$21.30</u>	<u>\$ 4.24</u>	<u>\$ 1.95</u>	<u>\$27.49</u>
Total	\$114.93	\$21.20	\$ 9.75	\$145.88

6. Bees - 2 hives @ \$20/hive in February = \$40/acre

7. Rodent control in April:

Materials: Poison Grains @ \$0.50/acre
 Time & Equipment: rent gopher machine at \$0.50/acre
 45 HP tractor-0.5 hr/acre @ 3.12/hr = \$1.56/acre

8. Fertilize in May through sprinkler system:

Materials: 200 lbs N @ \$0.30/lb = \$60/acre

9. Mow weeds in March, June and July:

Equipment: 70 HP tractor and mower @ \$8.38/hour
 x 0.5 hrs/acre x 3 = \$12.57/acre
 Labor: 0.5 hrs/acre @ \$6.50/hr x 3 = \$ 9.75/acre

10. Irrigation:

<u>Month</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>September</u>	<u>Total</u>
# Irrigations	1x	1x	2x	2x	1x	7x
Amount (ac.in.)	5	5	10	10	5	35

11. Harvest In August:

Custom harvest - 1000 lbs meat/acre @ \$ 200/acre

12. Establishment costs =

\$4600/acre

The establishment costs are divided by 30 years. Interest on investment is calculated at 12%. The annual costs of investment in the trees are: \$153.33 depreciation + \$276.00 interest per acre.

SAMPLE COSTS TO PRODUCE ALMONDS
Yolo and Solano Counties - 1987

Labor Rate: \$6.50 /hr. skilled labor
\$5.00 /hr. field labor

Interest Rate: 12.00%
Yield: 1,000 lbs. meat/acre

Operation	Labor Hours per Acre	Cash and Labor Costs per Acre			Total Cost	Your Cost
		Labor	Fuel & Repairs	Materials Kind and Quantity		
Cultural costs:						
Pruning	10.0	\$50.00	\$2.40		\$52	
Brush Removal	2.0	13.00	3.52		17	
Poling (2X)	16.0	80.00			80	
Herbicide (3X)				Materials	\$57	57
Application costs	1.5	9.75	5.81		16	
Pest/Disease Sprays (5X)				Materials	115	115
Application costs	1.5	9.75	21.20		31	
Bees				2 Hives @ \$20	40	40
Rodent control	.5	3.25	1.56	Materials + Rent machine	1	6
Fertilize thru sprinkler				200 lbs. N @ .30/lb.	60	60
Mowing (3X)	1.5	9.75	12.57		22	
Irrigation (7 X 5")	3.5	17.50	11.95	Pump costs for 35 ac.in.	100	137
Costs for pick up truck			10.85			11
Interest on operating capital @ 12.00% for 6 months						39
TOTAL CULTURAL COSTS	36.5	\$193	\$70		\$381	\$683
Harvest Costs:						
Harvest				Custom harvest - \$200/acre		\$200
TOTAL HARVEST COSTS						\$200
Cash overhead:						
Office and business costs					\$70	
County Taxes					33	
Equipment Insurance					3	
TOTAL CASH OVERHEAD COSTS					\$106	
TOTAL CASH COSTS						\$989
TOTAL CASH COST PER POUND						\$.99
Investment						
		Per Production Acre		Annual Cost		
				Depreciation	Interest @ 12.00%	
Land @ \$2,500/Acre		\$2,562			\$307	\$307
Equipment & buildings		690		\$55	41	96
Trees (30 yr. depreciation)		4,600		153	276	429
TOTAL INVESTMENT COSTS		\$7,852		\$208	\$625	\$833
TOTAL COSTS PER ACRE						\$1,822
Cost per pound @ 1,000 lbs. yield						\$1.82

MONTHLY SUMMARY OF
SAMPLE COSTS TO PRODUCE ALMONDS
Yolo and Solano Counties - 1987

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Cultural costs:													
Pruning												\$52	\$52
Brush Removal												17	17
Poling (2X)								\$40				40	80
Herbicide (3X)						\$6	\$33				\$18		57
Application costs						4	6				6		16
Pest/Disease Sprays (5X)		\$31			\$31		21					31	115
Application costs		12			6		6					6	31
Bees		40											40
Rodent control				\$6									6
Fertilize thru sprinkler					60								60
Mowing (3X)			\$7			7	7						22
Irrigation (7 X 5")				20	20	39	39		\$20				137
Costs for pick up truck	\$1	1	1	1	1	1	1	1	1	\$1	1	1	11
Interest on operating capital	3	3	3	3	3	3	3	3	3	3	3	3	39
TOTAL CULTURAL COSTS	\$4	\$80	\$12	\$30	\$121	\$61	\$117	\$44	\$24	\$4	\$28	\$151	\$683
Harvest Costs:													
Harvest								200					200
TOTAL HARVEST COSTS								\$200					\$200
Cash overhead:													
Office and business costs	6	6	6	6	6	6	6	6	6	6	6	6	70
County Taxes				16								16	33
Equipment Insurance	3												3
TOTAL CASH OVERHEAD COSTS	\$9	\$6	\$6	\$22	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$22	\$106
TOTAL CASH COSTS	\$13	\$94	\$17	\$52	\$127	\$67	\$123	\$250	\$30	\$10	\$34	\$173	\$989

PRODUCTION COST ASSUMPTIONS FOR PRUNES

Yolo and Solano Counties - 1987

The following list contains a detailed description of the equipment, time requirement, amount and type of materials used and other assumptions pertaining to the sample costs of producing prunes in Yolo and Solano Counties.

1. Prune in December:

Equipment: Misc. pruning equipment - 20 hrs/acre @ \$.03/hr = \$ 0.60/acre
 Labor: \$1.25/tree x 108 trees/acre = \$135/acre

2. Brush removal in December:

Equipment: 45 HP tractor plus brush rake - .75 hr \$3.52/hr = \$ 2.64/acre
 Labor: 1.50 hours/acre @ \$6.50/hour = \$ 9.75/acre

3. Herbicides:

Nov: Strip spray - Surflan plus Roundup on 1/4 acres
 4 lbs/acre @ 64.83/gal(4 lb/gal) = \$16.21/acre
 1 qt Roundup/acre @ \$87.00/gal = \$ 5.44/acre
 Spray adjuvant = \$ 0.25/acre
 Equipment: 45 HP tractor and weed sprayer -
 0.5 hr/acre @ \$4.79/hr = \$ 2.40/acre
 Labor - 0.5 hr/acre @ \$6.50/hr = \$ 3.25/acre
 HERBICIDE TOTAL - \$27.55/acre

4. Pest and Disease Sprays:

Date	Material	Rate/acre Applied	Cost/unit	Cost/acre
Jan	Diazinon	4 lbs	\$ 4.27/lb	\$17.08
	Oil	6 gal	\$ 2.39/gal	\$14.34
Mar	Bloom spray	1 lb	\$21.32/lb	\$21.32

Application and Labor:

Date	Description	Hours/acre	\$/hour	Cost/acre
Jan	70 HP tractor	0.3	\$ 5.50	\$ 1.65
	Speed sprayer-pto	0.3	\$ 8.64	\$ 2.59
	Labor	0.3	\$ 6.50	\$ 1.95
Mar	70 HP tractor	0.3	\$ 5.50	\$ 1.65
	Speed sprayer-pto	0.3	\$ 8.64	\$ 2.59
	Labor	0.3	\$ 6.50	\$ 1.95

Pest and Disease Spray Summary:

Date	Materials	Application	Labor	Total
Jan	\$31.42	\$ 4.24	\$ 1.95	\$37.61
Mar	<u>\$21.32</u>	<u>\$ 4.24</u>	<u>\$ 1.95</u>	<u>\$27.51</u>
TOTAL	\$52.74	\$ 8.48	\$ 3.90	\$65.12

5. Bees - 1 hive @ \$11/hive in March.

6. Tie trees in April: (every other year)
 Rope: $\$0.15/\text{tree} \times 108 \text{ trees/acre} = \$16.20/\text{acre} / 2 = \$8.10/\text{acre}.$
 Labor: $3 \text{ hours/acre} @ \$5.00/\text{hr} = \$15.00/\text{acre} / 2 = \$7.50/\text{acre}.$
7. Fertilizer:
 May: (through sprinkler) 100 pounds N @ $\$0.30/\text{lb} = \$30/\text{acre}$
 Sep: 1,500 lbs/acre Potassium Sulfate -
 1/4 acreage every 4 years - $\$262/\text{acre} / 4 \text{ yrs} = \$65.50/\text{acre/yr}$
 Equipment: Rent machine @ $\$2.50/\text{acre} / 4 \text{ yrs} = \$0.63/\text{acre/yr}$
 45 HP tractor x 1 hr/acre @ $\$3.12/\text{hr} / 4 = \$0.78/\text{acre/yr}$
 Labor: $1 \text{ hr/acre} / 4 \text{ yrs} = 0.25 \text{ hr/acre/yr} @ \$6.50/\text{hr} = \$1.63/\text{acre/yr}$
8. Mow weeds in April and July:
 Equipment: 70 HP tractor & mower $0.5 \text{ hr/acre} @ \$8.38/\text{hr} \times 2 = \$8.38/\text{acre}$
 Labor: $0.5 \text{ hrs/acre} @ \$6.50 \times 2 = \$6.50/\text{acre}$
9. Irrigation:
- | <u>Month</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>September</u> | <u>Total</u> |
|-----------------|--------------|------------|-------------|-------------|------------------|--------------|
| # Irrigations | 1x | 1x | 2x | 2x | 2x | 7x |
| Amount (ac.in.) | 5 | 5 | 10 | 10 | 5 | 35 |
10. Harvest in August:
 Custom harvest and haul (9 green tons/acre) $\$27.50/\text{ton green}$
 Dehydrate - $\$64.50/\text{ton green}$
11. Establishment costs = $\$5300/\text{acre}.$

The establishment costs are divided by 30 years. Interest on investment is calculated at 12%. The annual costs of investment in the trees are: $\$176.67$ depreciation + $\$318.00$ interest per acre.

SAMPLE COSTS TO PRODUCE PRUNES
Yolo and Solano Counties - 1987

Labor Rate: \$6.50 /hr. skilled labor Interest Rate: 12.00%
 \$5.00 /hr. field labor Yield: 9 tons/acre (green)

Operation	Hours per Acre	Cash and Labor Costs per Acre				Total Cost	Your Cost
		Labor	Fuel & Repairs	Materials Kind and Quantity	Cost		
Cultural costs:							
Pruning	28.0	\$135.00	\$6.00	\$1.25/tree		\$136	
Brush Removal	1.5	9.75	2.64			12	
Herbicide (1X)				Materials	\$22	22	
Application costs	.5	3.25	2.40			6	
Pest/Disease Sprays (2X)				Materials	53	53	
Application costs	.6	3.90	8.40			12	
Bees				1 Hive @ \$11	11	11	
Tie trees	1.5	7.50		Rope @ \$0.15/tree	8	16	
Fertilize				UN32 + K2SO4	96	96	
Application costs	.3	1.63	.78	Rent machine	1	3	
Mowing (2X)	1.0	6.50	8.38			15	
Irrigation (7 X 5")	3.5	17.50	11.95	Pump costs for 35 ac.in.	100	137	
Costs for pick up truck			10.85			11	
Interest on operating capital @ 12.00% for 6 months						32	
TOTAL CULTURAL COSTS	28.9	\$185	\$46		\$298	\$561	
Harvest Costs:							
Custom harvest and haul				@ \$27.50/ton green		\$248	
Dehydrate				@ \$64.50/ton green		581	
TOTAL HARVEST COSTS						\$828	
Cash overhead:							
Office and business costs						\$70	
County Taxes						33	
Equipment Insurance						3	
TOTAL CASH OVERHEAD COSTS						\$106	
TOTAL CASH COSTS						\$1,495	
TOTAL CASH COST PER TON						\$166	
Investment							
		Per Production Acre	Annual Cost				
			Depreciation	Interest @ 12.00%			
Land @ \$2,500/Acre		\$2,562		\$307		\$307	
Equipment & buildings		690	\$55	41		96	
Trees (30 yr. depreciation)		5,300	177	318		495	
TOTAL INVESTMENT COSTS		\$8,552	\$231	\$667		\$898	
TOTAL COSTS PER ACRE						\$2,393	
Cost per pound @	9 tns. green yield					\$266	

MONTHLY SUMMARY OF
SAMPLE COSTS TO PRODUCE PRUNES
Yolo and Solano Counties - 1987

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Cultural costs:													
Pruning												\$136	\$136
Brush Removal												12	12
Herbicide (1X)											\$22		22
Application costs											6		6
Pest/Disease Sprays (2X)	\$31		\$21										53
Application costs	6		6										12
Bees			11										11
Tie trees				\$16									16
Fertilize					\$30				\$65				95
Application costs									3				3
Mowing (2X)				7			\$7						15
Irrigation (7 X 5")				20	20	\$39	39		20				137
Costs for pick up truck	1	\$1	1	1	1	1	1	\$1	1	\$1	1	1	11
Interest on operating capital	3	3	3	3	3	3	3	3	3	3	3	3	32
TOTAL CULTURAL COSTS	\$41	\$4	\$42	\$46	\$53	\$43	\$50	\$4	\$92	\$4	\$31	\$152	\$561
Harvest Costs:													
Custom harvest and haul								248					248
Dehydrate								581					581
TOTAL HARVEST COSTS								\$828					\$828
Cash overhead:													
Office and business costs	6	6	6	6	6	6	6	6	6	6	6	6	78
County Taxes				16								16	33
Equipment Insurance	3												3
TOTAL CASH OVERHEAD COSTS	\$9	\$6	\$6	\$22	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$22	\$106
TOTAL CASH COSTS	\$50	\$9	\$48	\$68	\$59	\$49	\$56	\$837	\$98	\$9	\$37	\$174	\$1,495

1987 WHOLE FARM TREE MODEL
for untilled Walnuts, Almonds and Prunes
in Yolo and Solano County

EQUIPMENT AND BUILDING LIST

Interest Rate: 12.00%

Fuel Cost per Gallon: \$1.60 Diesel
\$0.75 Regular Gasoline
\$0.90 Regular Unleaded Gasoline

ITEM	NEW COST	ANNUAL USE (ACRES)	COST PER ACRE	LIFE (HRS)	YEARS TO TRADE*	—OVERHEAD*—		ANNUAL USE (HRS)	TAR* (per cent)	— HOURLY COSTS —		
						DEPRECIATION	INTEREST* 12.00%			FUEL*	REPAIRS*	TOTAL
Tractors:												
45 HP wheel diesel	\$18,000	200	\$90	12,000	10.0	\$9.00	\$5.40	450	33%	\$1.80	\$1.32	\$3.12
70 HP wheel diesel	33,000	200	165	12,000	10	16.50	9.90	550	45	2.80	2.70	5.50
3 wheel cycle (12 HP)	1,500	200	8	2,000	5.0	1.50	.45	100	9	1.29	.27	1.56
Weed sprayer on a trailer	2,000	200	10	1,200	8.0	1.25	.60	150	100		1.67	1.67
Speed sprayer - PTO	15,000	200	75	2,500	10.0	7.50	4.50	250	144		8.64	8.64
Small sprayer on a trailer	625	200	3	1,200	10.0	.31	.19	100	78		.49	.49
Mower - 8 foot	4,000	200	20	2,000	6.7	3.00	1.20	300	144		2.88	2.88
Flat bed trailer	3,000	200	15	5,000	20.0	.75	.90	200	73		.55	.55
Brush rake	1,000	200	5	2,500	12.5	.40	.30	200	100		.40	.40
2 - chain saws (\$200 each)	400	200	2	4,000	5.0	.40	.12	700	83		.09	.09
Pruning tower	5,000	200	25	7,500	10.0	2.50	1.50	750	36		.24	.24
Misc. pruning equipment	1,500	200	8	20,000	10.0	.75	.45	2000	36		.03	.03
Sprinkler irrigation system	80,000	200	400	45,000	15.0	26.67	24.00	2800	36		.67	.67
Irrigation pump and well	25,000	200	125	60,000	20.0	6.25	7.50	2800	36		.16	.16
Pick-up	12,000	200	60	2,000	6.7	9.00	3.60	300	36	5.18	2.16	7.34
Shop and tools	4,000	200	20		10.0	2.00	1.20					
Buildings for equipment	24,000	200	120		35.0	3.43	7.20					
TOTAL COST	\$230,825		\$1,150			\$91	\$69					
60% OF NEW COSTS*	\$138,015		\$690			\$55	\$41					

* DEFINITIONS:

- 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 ("YEARS TO TRADE" X "ANNUAL USE IN HOURS")
- 60% OF NEW COSTS ————— Used to reflect a mix of new and used equipment.