

Almond Orchard Establishment Costs - Underlying Assumptions
Northern San Joaquin Valley
Alternate Cover Crops

1. Trees are planted In January
2. Cover crop goes In In the Fall
3. Weed Control - A pre-emergence herbicide is applied in December or January. Two passes are made with a weedsprayer pulled by a 40 HP tractor moving at 4 mph. The time required, including fillup, is about 12 minutes per acre for the two passes. A contact weed spray is applied in May or June also made in two passes.

The materials per sprayed acre are listed below. For strip weed control only one third of each acre is sprayed.

1st & 2nd year pre-emergence herbicide materials per sprayed acre

1 qt Goal	\$17.00
5 lb Surflan	60.75
1 qt Roundup or Paraquat	22.61
Total Materials	\$100.36

1st and 2nd year contact herbicide & materials per sprayed acre

1 qt Roundup or Dinitro and Paraquat	\$22.61
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Years 3 + pre-emergence herbicide materials per sprayed acre

1 lb Simazine	3.70
3 lb Surflan	36.45
1 qt Roundup	<u>22.61</u>
TOTAL Materials	\$62.76

Years 3+ Contact weed control - same as years 1 & 2

- 3a. Strip weed control - Materials are applied to 1/3 of the acreage.

Pre-emergence strip weed control

	<u>years 1-2</u>	<u>years 3+</u>
Materials	\$33.45	\$20.92
Application	<u>\$ 2.36</u>	<u>2.36</u>
TOTAL	\$35.81	\$23.28

Contact strip weed control - all years

Materials	\$ 7.54
Application	<u>2.36</u>
TOTAL	\$ 9.90

3b. Total Herbicide plot - materials are applied to entire acre.

Pre-emergence	<u>years 1-2</u>	<u>years 3+</u>
Materials	\$100.36	\$63.00
Application	<u>2.36</u>	<u>2.36</u>
TOTAL	\$102.72	\$65.36

Contact weed control - all years

Materials	\$ 22.61
Application	<u>2.36</u>
TOTAL	\$ 24.97

3c. Chemical mow -

- Winter - 12 oz Roundup per sprayed acre
- Summer - 12 oz Roundup 2x
- Pre-harvest - 16 oz Roundup

TOTAL - 52 oz Roundup per sprayed acre, 4 applications.

35 oz Roundup per tree acre, 4 applications.

	Per Sprayed Acre	Per Tree Acre
Materials -	\$36.92	\$24.85
Application -	\$ 9.44	\$ 6.28
TOTAL COST -	\$46.36	\$31.13

3c. Pre-harvest weed control - applied through sprinkler system starting in the 4th year. It is used only when middles are cultivated or controlled by herbicides.

3 lb Eptam - \$10

4. Pest control program - is the same for all floor covers. Application is made with a PTO speedsprayer pulled by a 60 HP tractor. In the first 2 years a hand gun is used with the weed sprayer and small tractor.

Detail of Materials Applied

Year	Time	Application Method	Material	Cost	Total Cost
1st	May Summer	handgun	1 lb Diazinon	\$4.00	\$8.40
		handgun	1 lb Omite	4.40	
2nd	Dormant	handgun	1 pt Lorsban	4.50	\$20.40
			1 1/2 gal. oil	3.30	
	May	handgun	1 1/2 lb Diazinon	6.00	
	Summer	handgun	1 1/2 lb Omite	6.60	
3rd	Dormant	speed sprayer	1 1/2 pt Lorsban	6.75	\$28.00
			2 1/4 gal. oil	4.45	
	May Summer	handgun	2 lb Diazinon	8.00	
		handgun	2 lb Omite	8.80	
4th	Dormant	speed sprayer	6 lb of 25% Parathion	5.88	\$90.58
			6 gal. oil	13.20	
	Pink Bud-Feb	1.5 lb Rovral	25.00		
	Full Blossom-Feb	8 lb captan & Sticker	11.00		
	Fall-March	8 lb Ziram	12.00		
		5 lb Neutral Zn	4.00		
		1 lb Solubor	.50		
			Sticker	1.00	
	Midseason (May) or Hull split (July)	2 lb Guthion	13.00		
		1/4 lb Plictran	5.00		

Application costs - Fuel, repairs and labor

Years 3 + Application with speed sprayer,
PTO - 5 acres per hour

60 HP tractor	\$8.00
Sprayer	5.00
Tractor driver	<u>7.50</u>
	\$20.50 per hour
	\$ 4.10 per acre

Years 1 & 2
Handgun application 10 acres per hour

40 HP tractor	\$ 3.80
Weed sprayer	.50
Handgun	.01
Tractor drive	<u>7.50</u>
	\$11.81 per hour = \$1.18/acre

Cost of Pest Control

Year	Number of Sprays	Material	Application	Total
1st	2	\$ 8.40	\$ 2.36	\$10.76
2nd	3	20.40	3.54	23.94
3rd	3	28.00	12.30	40.30
4th +	5	90.58	20.50	111.08

5. Equipment costs - Costs for fuel and repairs for operating equipment are included under cultural costs. The costs per hour are listed on the equipment list table. The costs per hour are calculated by adding the cost of the labor, tractor and implement. For example, for disking the 60 HP tractor is used. The cost per hour is:

$$\$7.50 + \$8.00 + \$3.60 = \$19.10$$

To calculate the cost per time over each acre the following rates were used:

Disking	3 acres/hr
Mowing	4 acres/hr
Springtooth	4 acres/hr
Rolling	3 acres/hr
Handgun	10 acres/hr
Speedsprayer	5 acres/hr
Weedsprayer	5 acres/hr

The rate of 3 acres per hour is the same as 1/3 hr per acre. So, for disking the cost per time per acre is:

$$1/3 * 19.10 = \$6.43$$

The only difference between the equipment lists for a cover crop or no cover crop is the mower.

6. Labor Hours for Various Operations

Hours per Acre

Year	1	2	3	4	5	mature
Prune, train-skilled	0	2	4			
prune, train-unskilled				5	5	10
brush disposal-tractor driver	0	.5	.75	1	1	1
brush disposal-unskilled	0	.5	1	1	1	2
Irrigate	.5	.5	.5	.5	.5	.5

7. Cover crops planted:

Blando brome - annual cover and clover - perennial cover.
Seed in September; Fertilize in Spring.

Mowing Schedule:

- 1x pre-frost
- 1x after 1st heads
- 4x for annual grasses
- 6x Total

Fertilizer for clover:

11-48-0, 100 lbs applied in Spring through irrigation system.
Materials \$16.15

Fertilizer for Blando brome: 20 lbs N @ 30 cents/lb., \$6

Seed:

Blando brome	20 lbs/acre	\$2.70/lb.
Clover-coated	10 lbs/acre	\$3.44/lb.

8. Water costs

Costs figured at \$22.50/acre foot.

Native Cover:	40" = \$75/acre
Blando Brome:	31" = \$58/acre
Mow and Cultivate:	40" = \$75/acre
Clover:	39" = \$73/acre
Chemical Mow:	33" = \$62/acre
Cultivate Centers:	33" = \$62/acre
Total Herbicide:	34" = \$63/acre

9. Harvest costs -

Polling	\$15/acre
Shake - \$55/hr	\$45/acre
Pickup - \$60/hr	\$40/acre
Rake - \$35/hr	\$30/acre
Hull - 3 cents/lb in shell, 60% of weight is meat.	
Haul - \$7 per gross ton, \$7 per acre, minimum.	

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