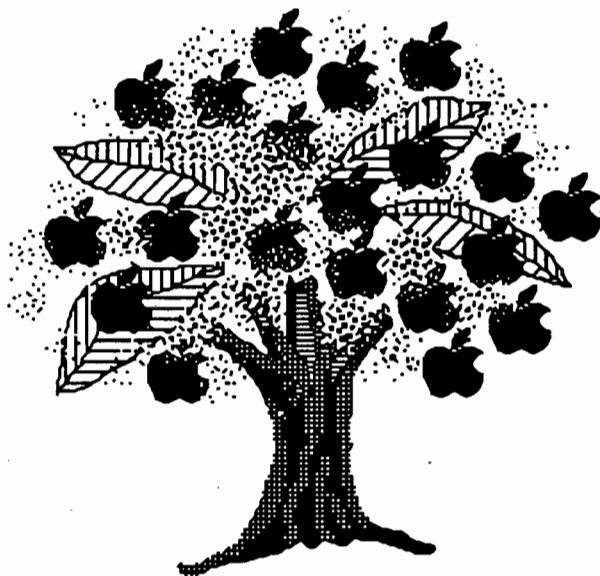


COST ANALYSIS FOR GRANNY SMITH APPLES, FREE-STANDING

Santa Cruz County - 1987



UC Cooperative Extension

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Since Granny Smith is relatively new to California this cost study is based on many assumptions. The cost study is based on semi-dwarf size Granny Smith trees. Actual costs may vary considerably based on type of tree, yield, selection of spray materials, size and amount of equipment, irrigation method, land, terrain and other practices. The cultural methods listed are intended to promote productivity and produce fruit mainly for the fresh market. The study includes three tables 1) "Establishment Costs", 2) "Production Costs" and 3) "Equipment and Building List." The following assumptions were used in this study:

ASSUMPTIONS

1. Pre-Plant Investment - Land valued at \$3000/acre plus new machinery, irrigation systems, well, and buildings. Property taxes are 1% per year. Trees are planted in 20 acre blocks.
2. Planting - 340 trees/acre, 8' x 16'. Tree replacement at 10 trees/acre 2nd yr; 6 trees/acre 3rd yr; and 3 trees/acre the 4th yr.

3. Irrigation - A drip irrigation system is used. Water is pumped from a 400 foot well, and is applied according to the following schedule:

YEAR	ACRE INCHES/ACRE
1st	10 inches
2nd	12 inches
3rd	16 inches
4th	20 inches
Mature	20 inches

4. Fertilizer - Fertilizer is applied in the following amounts:

YEAR	MATERIAL/TREE	MATERIAL/ACRE
1st	1/4 lbs actual N	85 lbs actual N
2 +	1/2 lbs actual N	170 lbs actual N *

* If vigorous growth or bitter pit are a problem the amount of nitrogen applied may need to be reduced.

5. Herbicide - Strip application is made annually after the first year's growth. Hand hoeing is done around the tree base the first year only.
6. Cover Crop - A natural cover is used during the winter. Clean cultivate three times during the season.

7. Insect and Disease Control -
 PESTICIDE APPLICATION FOR GRANNY SMITH APPLES

YEAR	TIME	PEST	MATERIAL	COST
1-2	Dormant	1.San Jose Scale	Lorsban 4E, 1 pt/ac	\$5.38
		Mites Aphids	Supreme/Superior Oil, 4 gal/ac	11.80
	Green Tip	2.Scab	Lime Sulfur, 8 gal/ac	7.30
Pink Bud	3.Scab Mildew		Cyprex 65W, 2 lb/ac	14.60
			Karathane, 16 oz/ac	3.80
Rains	4.Scab		Cyprex 65W, 3 lb/ac	21.90
			Karathane, 16 oz/ac	<u>3.80</u>
TOTAL				\$68.58
3+	Dormant	1.San Jose Scale	Lorsban 4E, 1 pt/ac	\$5.38
		Mites Aphids	Superior/Supreme Oil, 6 gal/ac	17.70
	Green Tip	2.Scab Pandemus	Cyprex 65W, 1 lb/ac	7.30
Pink Bud	3.Scab Mildew		Cyprex 65W, 1 lb/ac	7.30
			Karathane, 16 oz/ac	3.80
Rains	4.Scab infection		Cyprex 65W, 3 lb/ac	21.90
			Karathane, 16 oz/ac	3.80
April	5.Codling Moth		Guthion 50W, 1 lb/ac	8.20
Summer	6.Orange Tortrix Apple Pandemus		Lorsban 50W, 6 lb/ac	28.40
Fall	7.Coddling moth		Sevin, 6 lb/ac	<u>16.50</u>
TOTAL				\$120.28

Per acre application Costs @ 1/2 hour per application using
 50 HP tractor and speedsprayer = \$11.43 per application.

8. Pruning, Training, and Suckering : - Flowers and fruits are removed by hand the first two years to encourage vigorous growth.

Labor hours include pruning for all years.

YEAR	PRUNING, TRAINING, AND SUCKERING HRS/ACRE
1	10 hrs skilled labor + 3 hrs unskilled
2	30 hrs skilled labor + 2 hrs unskilled
3	40 hrs skilled labor
4+	50 hrs unskilled + 5 hrs supervisory labor

9. Thinning - For the mature orchard, 30 hrs/acre of hand thinning is required, plus three hours of supervision.

10. Pollination - 1-2 hives per acre starting in the third year, at \$20/hive

11. Gopher Control - \$20/acre, which includes \$1/acre for bait, \$7/acre for machine, and \$2/acre for labor to run gopher machine and \$10/acre in labor for trapping.

12. Yields - The assumed gross yields are:

YEAR	TONS/ACRE
3	3
4	6
5	9
6	12
7	16
8	20

The yields in the third and fourth years are included in the establishment study as a credit to offset the costs incurred that year. The income from the apples is subtracted from the costs to calculate total costs.

13. Packout - From limited experience, it appears that because of sun damage as well as other factors, not all fruit will be packable. While actual packouts may depend on management, training system, location of orchard, etc., a typical packout might be 75% (25% of fruit going to processing).

14. Packing, Processing and Marketing - Costs are not included in this study.

