

1961

DEVELOPMENT  
COSTS *for*

**APPLES**

*UN*  
NEVADA COUNTY

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UNIVERSITY OF CALIFORNIA  
AGRICULTURAL EXTENSION SERVICE  
GRASS VALLEY, NEVADA COUNTY  
AUGUST 1961

UC Cooperative Extension

AN ANALYSIS OF ORCHARD DEVELOPMENT  
COSTS OF APPLES IN NEVADA COUNTY

AUGUST 1961

THE COSTS OF DEVELOPING AN ORCHARD UP TO THE AGE WHERE THE INCOME COVERS THE COSTS OF PRODUCTION FOR A GIVEN CROP, VARIES WIDELY FROM AREA TO AREA IN CALIFORNIA. DANGER OF SPRING FROSTS, LOW INHERENT SOIL FERTILITY, MORE THAN ADEQUATE SOIL WATER DRAINAGE, HILLSIDE GROUND, AND VARYING DEPTH OF TOP SOIL ARE LIMITING FACTORS TO DEVELOPING FRUIT ORCHARDS IN THE 2000 TO 3000 FEET ELEVATION IN THIS AREA.

THESE NORMALLY CONTRIBUTE TO HIGHER DEVELOPMENT AND MAINTENANCE COSTS. YIELDS ARE SOMETIMES BELOW THOSE OF OTHER AREAS DUE TO CONDITIONS BEYOND THE CONTROL OF THE OPERATOR.

THE FIGURES PRESENTED IN THIS ANALYSIS ARE NOT THOSE OF ANY ONE GROWER BUT ARE BASED ON COSTS OF SEVERAL TYPICAL GROWERS IN THE AREA. THE INCOME AND COSTS USED REPRESENT GOOD OR NORMAL MANAGEMENT FOR ORCHARDS WHICH MAY BE PROFITABLE WHEN FINALLY DEVELOPED.

THE DATA IS BASED ON RECENT DETAILED INFORMATION FROM LOCAL GROWERS. THE IRRIGATION DATA IS BASED ON RECENT STUDIES BY THE AGRICULTURAL EXTENSION SERVICE IN NEVADA COUNTY.

THE DATA ON PRUNING AND TRAINING APPLE TREES IS BASED ON RECENT TESTS.

THE TAX INFORMATION IS THE LATEST AVAILABLE FROM THE COUNTY ASSESSOR'S OFFICE.

THE YIELD DATA DOES NOT REPRESENT THE HIGHEST OR THE LOWEST BUT IS A REALISTIC AVERAGE FOR THIS AREA. HARVESTABLE YIELDS BEGIN IN THE 6TH YEAR. THEY SHOULD REACH 9 TONS IN THE 10TH YEAR AND 12 TONS BY THE 12TH YEAR.

THE FOLLOWING COMPARATIVE INFORMATION WILL BE OF INTEREST:

	AVERAGE FOR CALIFORNIA 1951-1960		PRICES USED IN THIS ANALYSIS	AVERAGE YIELD AT 10TH YEAR
	<u>YIELD</u>	<u>PRICE</u>		
APPLES	9.7 TONS	\$56.00	\$150	9 TONS

SUMMARY

	<u>RANGE IN YEARS TO SELF-SUSTAINING CROP</u>	<u>YEARS TO SELF- SUSTAINING CROP IN THIS ANALYSIS</u>	<u>COST TO DEVELOP ORCHARD</u>
APPLES	7-12	8	\$1267.13

THE FINAL COST OF DEVELOPING AN ORCHARD IS A FUNCTION OF THE YIELDS OBTAINED DURING THE GROWING YEARS, THE PRICE RECEIVED FOR THE CROP, AND THE COSTS OF DEVELOPMENT. DISCREPANCIES BETWEEN DEVELOPMENT COSTS OF CROPS BECOMING SELF-SUFFICIENT IN THE SAME YEAR MAY RESULT FROM ONE OR ALL OF THESE FACTORS.

EQUIPMENT INVESTMENT  
FOR  
APPLES IN NEVADA COUNTY

BASED ON 40 ACRES      48 TREES PER ACRE (30x30)

ITEM	YEAR BOUGHT	ORIGINAL COST		YRS. LIFE	ANNUAL USE ACRES	NON-CASH OVERHEAD	
		TOTAL	PER ACRE			DEPREC.	INT. @ .06
TRACTOR, WHEEL	1ST	1800	\$45.00	15	40	\$3.00	\$1.35
MOWER, ROTARY	"	600	15.00	10	"	1.50	.45
DISC, 8'	"	500	12.50	10	"	1.25	.38
SPRAYER, USED	"	250	6.25	5	"	1.25	.19
TRAILER	"	400	10.00	15	"	.67	.30
DUSTER	"	300	<u>7.50</u>	15	"	<u>.50</u>	<u>.23</u>
TOTAL			<u>96.25</u>			<u>8.17</u>	<u>2.90</u>
IRRIGATION SYSTEM	"	6000	150.00	20	"	7.50	4.50
BUILDING 30'x60' METAL	"	6000	150.00	40	"	3.75	4.50
LAND		16,000	400 (\$100 FOR CLEARING)				24.00
20 - 10 FT. LADDERS WILL BE NEEDED IN THE 6TH YEAR		300	7.50	15	"	.50	.23
TOTAL		32,150	803.75			19.92	36.13

COMMON LABOR \$1.30 PER HOUR

SKILLED LABOR 2.00 PER HOUR

1ST YEAR - NEVADA COUNTY

OPERATION	HOURS PER ACRE	CASH AND LABOR COST PER ACRE			TOTAL	
		LABOR	FUEL & REPAIRS	MATERIALS		
<b>CULTURAL</b>						
LAND CLEARING				CONTRACT	\$100.00	\$100.00
DISC 2x	1.0	2.00	1.25			3.25
MARK & STAKE	1.5	1.95		96 STAKES @ .07=	6.72	8.67
DIG HOLES	.75	1.50	1.88			3.38
PLANT & PRUNE, 2 MEN	5.2	6.76		48 TREES @ 1.07=	51.40	58.16
TANK WATER	5.0	6.50	5.50			12.00
DISC 6x	3.0	6.00	3.75			9.75
FERTILIZER (BUCKET)	2.0	2.60		N 30# @ .15=	4.50	7.10
IRRIGATE, 12x @ 10 DAYS	12.0	15.60	2.25	1/4 MINERS IN. @ \$31.00=	7.75	25.60
HOE, 3x (4' CIRCLE)	3.0	3.90				3.90
SPRAY, 2x, SUMMER	2.0	4.00	2.40		3.00	9.40
TAXES				LAND TAX \$3.75 IRRIG. DIST \$2.=	5.75	5.75
MISC.	3.0	4.60	3.70		3.75	12.05
<b>TOTAL CULTURAL</b>		<b>55.41</b>	<b>20.73</b>		<b>182.87</b>	<b>\$259.01</b>

EM 7 GOLDEN DELICIOUS APPLES COST \$1.25 )  
 RED DELICIOUS COST .90 ) AVERAGE: \$1.07

**TOTAL CASH & LABOR COST** **\$259.01**

INVESTMENT	PER ACRE	ANNUAL COST		TOTAL
		DEPRECIATION	INTEREST @ .06	
LAND	\$300.00		18.00	
EQUIPMENT	96.25	8.17	2.90	
SPRINKLER	150.00	7.50	4.50	
BUILDING	150.00	3.75	4.50	
<b>TOTAL</b>		<b>19.42</b>	<b>29.90</b>	<b>49.32</b>

**TOTAL COST PER ACRE**

**\$308.33**

2ND YEAR - NEVADA COUNTY

OPERATION	HOURS PER ACRE	CASH AND LABOR COST PER ACRE			TOTAL
		LABOR	FUEL AND REPAIRS	MATERIALS	
<b>CULTURAL</b>					
TRAIN	1.5	1.95			\$ 1.95
REPLANT	.2	.26		1 TREE	1.33
FERTILIZE (BUCKET)	2.5	3.25		N 30# @ .15=	7.75
HOE 3x (4' CIRCLE)	3.0	3.90			3.90
DISC 6x	3.0	6.00	3.75		9.75
IRRIGATE 12x	12.0	15.60	2.25	1/4 MINERS IN. @ \$31	25.60
SPRAY 2x SUMMER	2.0	4.00	2.40		9.40
TAXES					7.00
MISC	1.0	1.30	1.25		2.93
<b>TOTAL CULTURAL</b>		<b>36.26</b>	<b>9.65</b>		<b>69.66</b>

INVESTMENT	PER ACRE	ANNUAL DEPRECIATION	COST INT. @ .06
LAND	\$400.00		24.00
EQUIPMENT	96.25	8.17	2.90
SPRINKLER	150.00	7.50	4.50
BUILDING	150.00	3.75	4.50
TREES	308.33		18.43
		<b>19.42</b>	<b>54.38</b>

TOTAL

TOTAL COST PER ACRE

73.80  
143.46

3RD YEAR - NEVADA COUNTY

TRAIN	1.5	1.95			1.95
REPLANT	.2	.26		1 TREE @	1.33
FERTILIZE (BUCKET)	2.5	3.25		N 35# @ .15	8.50
HOE 3x (4' CIRCLE)	3.0	3.90			3.90
DISC 6x	3.0	6.00	3.75		9.75
IRRIGATE 12x	12.0	15.60	2.25	1/4 MINERS IN. @ \$31=	25.60
SPRAY 2x SUMMER	2.0	4.00	2.40		9.40
TAXES					7.00
MISC	1.0	1.30	1.25		3.02
<b>TOTAL CULTURAL</b>		<b>36.26</b>	<b>9.65</b>		<b>70.45</b>

INVESTMENT	PER ACRE	ANNUAL DEPRECIATION	COST INT. @ .06
LAND	\$400.00		24.00
EQUIPMENT	96.25	8.17	2.90
SPRINKLER	150.00	7.50	4.50
BUILDING	150.00	3.75	4.50
TREES	451.79		27.11
		<b>19.42</b>	<b>63.01</b>

TOTAL COST PER ACRE

82.43  
152.88

## 4TH YEAR - NEVADA COUNTY

## CASH &amp; LABOR COST PER ACRE

OPERATION	HOURS PER ACRE	CASH & LABOR COST PER ACRE			TOTAL
		LABOR	FUEL & RE REPAIRS	MATERIALS	
PRUNE 5 MIN/TREE	4.0	5.20			5.20
FERTILIZE - SPREADER	.4	.80	.40	N 40# @ .15	7.20
HOE 3X	3.0	3.90			3.90
DISC 2X	1.0	2.00	1.25		3.25
MOW 3X	1.5	3.00	2.25		5.25
IRRIGATE 12X	12.0	15.60	2.35	$\frac{1}{2}$ MINERS IN. @ \$31	33.45
SPRAY 2X	2.0	4.00	2.40		11.40
TAXES					7.00
MISC.	1.0	1.30	1.25		7.00
TOTAL CULTURAL		35.80	9.90		80.15

INVESTMENT	PER ACRE	ANNUAL COST		TOTAL
		DEPRECIATION	INTEREST	
LAND	400.00		24.00	
EQUIPMENT	96.25	8.17	2.90	
SPRINKLER	150.00	7.50	4.50	
BUILDING	150.00	3.75	4.50	
TREES	604.67		36.28	
TOTAL		19.42	72.18	91.60
TOTAL COST PER ACRE				171.75

5TH YEAR - NEVADA COUNTY

OPERATION	HOURS PER ACRE	CASH AND LABOR COST PER ACRE			TOTAL
		LABOR	FUEL & REPAIRS	MATERIALS	
<b>CULTURAL</b>					
PRUNE 15 MIN/TREE	12.0	15.60			15.60
FERTILIZE - SPREADER	.5	1.00	.50	N 50# @ .15 7.50	9.00
HOE 1x	1.0	1.30			1.30
DISC 2x	1.0	2.00	1.25		3.25
MOW 3x	1.5	3.00	2.25		5.25
IRRIGATE 12x	12.0	15.60	2.40	1/2 MINERS IN. @ \$31 \$15.50	33.50
SPRAY 5x	5.0	10.00	6.00	DELAYED DORMANT; CLUSTER BUD; 25.00	41.00
				2 SUMMER - 1 FALL	
TAXES		TREE TAX \$2; LAND TAX \$5; IRRIG. DIST TAX \$2		9.00	9.00
MISC	2.0	2.60	1.25	1.60	5.45
<b>TOTAL CULTURAL</b>		<b>51.10</b>	<b>13.65</b>	<b>58.60</b>	<b>123.35</b>

INVESTMENT	PER ACRE	ANNUAL COST	
		DEPRECIATION	INTEREST
LAND	400.00		24.00
EQUIPMENT	96.25	8.17	2.90
SPRINKLER	150.00	7.50	4.50
BUILDING	150.00	3.75	4.50
TREES	776.42		46.60
		<b>19.42</b>	<b>82.50</b>
			<b>101.92</b>
			<b>225.27</b>

TOTAL  
TOTAL COST PER ACRE

6TH YEAR - NEVADA COUNTY

CASH & LABOR COST PER ACRE

OPERATION	HOURS PER ACRE	CASH & LABOR COST PER ACRE			
		LABOR	FUEL & REPAIRS	MATERIALS	TOTAL
CULTURAL					
PRUNE .50/TREE	18.4	24.00			24.00
FERTILIZE - SPREADER	.5	1.00	.50	N 50# @ .15 = 7.50	9.00
HOE 1x	1.0	1.30			1.30
DISC 2x	1.0	2.00	1.25		3.25
MOW 3x	1.5	3.00	2.25		5.25
IRRIGATE 12x	12.0	15.60	2.40	1/2 MINERS IN. @ \$31= 15.50	33.50
SPRAY 5x	5.0	10.00	6.00	DELAYED DORM; CLUSTER BUD 25.00	41.00
TAXES				2 SUMMER - 1 FALL 9.00	9.00
MISC.	2.0	3.30	2.00	.95	6.25
<b>TOTAL CULTURAL</b>		<b>60.20</b>	<b>14.40</b>	<b>57.95</b>	<b>132.55</b>
HARVEST					
BOX, PICK, HAUL 1/2 TON @ \$16/TON					8.00
<b>TOTAL CASH &amp; LABOR COST</b>					<b>140.55</b>

	INVESTMENT	PER ACRE	ANNUAL COST	
			DEPRECIATION	INTEREST
	LAND	400.00		24.00
	EQUIPMENT + LADDERS	103.75	8.67	3.13
	SPRINKLER	150.00	7.50	4.50
	BUILDING	150.00	3.75	4.50
	TREES	1001.69		60.12
			19.92	96.25
<b>TOTAL</b>				<b>116.17</b>
<b>TOTAL COST PER ACRE</b>				<b>256.72</b>
			CREDIT 1/2 TON @ \$150/TON	75.00
			<b>NET</b>	<b>181.72</b>



7<sup>TH</sup> YEAR - NEVADA COUNTY

OPERATION	HOURS PER ACRE	CASH AND LABOR COST PER ACRE				TOTAL
		LABOR	FUEL REPAIRS	MATERIALS		
<b>CULTURAL</b>						
PRUNE @ .60/TREE	27	28.80				28.80
FERTILIZE - SPREADER	.5	1.00	.50	N 50# @ .15=	7.50	9.00
BRUSH REMOVAL	1.0	2.00	1.10			3.10
HOE 1x	1.0	1.30				1.30
DISC 2x	1.0	2.00	1.25			3.25
MOW 3x	1.5	3.00	2.25			5.25
IRRIGATE 12x	12.0	15.60	2.40	1/2 MINEPS IN. @ \$31	15.50	33.50
SPRAY 5x	5.0	10.00	6.00	DELAYED DORM, CLUSTER, 2 WORM HORMONE.	40.00	56.00
TAXES					9.00	9.00
MISC.	2.00	3.30	2.00		2.90	8.20
<b>TOTAL CULTURAL</b>		<b>67.00</b>	<b>15.50</b>		<b>74.90</b>	<b>157.40</b>

<b>HARVEST</b>						
BOX, PICK, HAUL -	1 1/2 TONS @ \$16/TON					24.00
<b>TOTAL CASH &amp; LABOR COST</b>						<b>181.40</b>

	INVESTMENT	PER ACRE	ANNUAL COST		
			DEPRECIATION	INTEREST	
	LAND	400.00		24.00	
	EQUIPMENT	103.75	8.67	3.13	
	SPRINKLER	150.00	7.50	4.50	
	BUILDING	150.00	3.75	4.50	
	TREES	1183.41		71.02	
			<b>19.92</b>	<b>107.15</b>	<b>127.07</b>
<b>TOTAL</b>					<b>308.47</b>
<b>TOTAL COST PER ACRE</b>					<b>225.00</b>
					<b>83.47</b>
					<b>CREDIT ON 1 1/2 TONS @ \$150/TON NET</b>

## 8TH YEAR - NEVADA COUNTY

CASH &amp; LABOR COST PER ACRE

OPERATION	HOURS PER ACRE	CASH & LABOR COST PER ACRE			TOTAL
		LABOR	FUEL & REPAIRS	MATERIALS	
PRUNE .70/TREE	26	33.60			33.60
FERTILIZE - SPREADER	.5	1.00	.50	N 50# @ .15= 7.50	9.00
BRUSH REMOVAL	1.0	2.00	1.10		3.10
HOE 1x	1.0	1.30			1.30
DISC 2x	1.0	2.00	1.25		3.25
MOW 3x	1.5	3.00	2.25		5.25
IRRIGATE 12x	12.0	15.60	2.40	1/2 MINERS IN. @ \$31= 15.50	33.50
SPRAY 5x	5.0	10.00	6.00	DELAYED DORM, CLUSTER, 2 WORM, HORMONE 40.00	56.00
TAXES				9.00	9.00
MISC.	3.0	4.60	3.00	2.05	9.55
TOTAL CULTURAL		73.10	16.50	74.05	163.65
HARVEST					
Box, PICK, HAUL,	3 TONS @ \$16/TON				48.00
TOTAL CASH & LABOR COST					211.65

	INVESTMENT	PER ACRE	ANNUAL COST		
			DEPRECIATION	INTEREST	
	LAND	400.00		24.00	
	EQUIPMENT	103.75	8.67	3.13	
	SPRINKLER	150.00	7.50	4.50	
	BUILDING	150.00	3.75	4.50	
	TREES	1266.88		76.03	
TOTAL			19.92	112.16	132.08
TOTAL COST PER ACRE					343.73
					CREDIT 3 TONS @ \$150/TON 450.00
					NET 106.27

8TH YEAR - NEVADA COUNTY

CASH & LABOR COST PER ACRE

OPERATION	HOURS PER ACRE	CASH & LABOR COST PER ACRE			TOTAL
		LABOR	FUEL & REPAIRS	MATERIALS	
PRUNE .70/TREE		33.60			33.60
FERTILIZE - SPREADER	.5	1.00	.50	N 50# @ .15=	9.00
BRUSH REMOVAL	1.0	2.00	1.10		3.10
HOE 1x	1.0	1.30			1.30
DISC 2x	1.0	2.00	1.25		3.25
Mow 3x	1.5	3.00	2.25		5.25
IRRIGATE 12x	12.0	15.60	2.40	1/2 MINERS IN. @ \$31=	33.50
SPRAY 5x	5.0	10.00	6.00	DELAYED DORM, CLUSTER, 2 WORM, HORMONE	56.00
TAXES				40.00	9.00
MISC.	3.0	4.60	3.00	9.00	9.55
TOTAL CULTURAL		73.10	16.50	74.05	163.65
HARVEST					
Box, Pick, Haul,	3 TONS @ \$16/TON				48.00
TOTAL CASH & LABOR COST					211.65

INVESTMENT	PER ACRE	ANNUAL COST		TOTAL
		DEPRECIATION	INTEREST	
LAND	400.00		24.00	
EQUIPMENT	103.75	8.67	3.13	
SPRINKLER	150.00	7.50	4.50	
BUILDING	150.00	3.75	4.50	
TREES	1266.88		76.03	
TOTAL		19.92	112.16	132.08
TOTAL COST PER ACRE				343.73
				CREDIT 3 TONS @ \$150/TON
				450.00
				NET
				106.27