SAMPLE COSTS TO

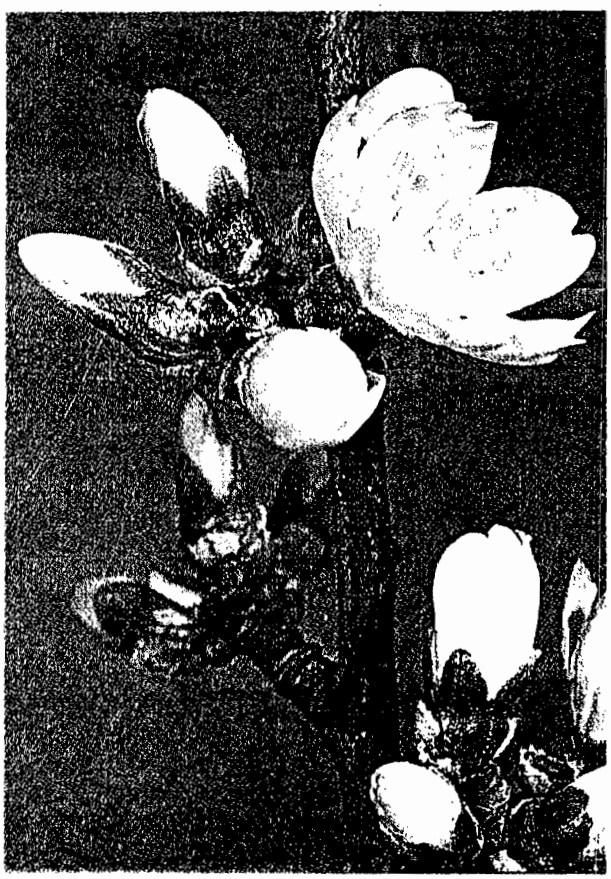
AM-VN-90

PRODUCE ALMONDS

in the

Northern San Joaquin Valley

1990



University of California Cooperative Extension

SAMPLE COSTS TO PRODUCE ALMONDS IN THE NORTHERN SAN JOAQUIN VALLEY - 1990

by

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Introduction

This cost study is designed to provide almond orchardists or prospective growers the estimated costs to produce almonds in a mature orchard. This study is based on actual cash costs in better than average orchards with good management. The costs may be above average and also reflect practices that are not necessary for all growers or in all years. The production estimates are above average, but are typical of very good orchards.

This study assumes that the farm has good soil, good water, very good equipment, and top management. Used equipment is often purchased for orchard use. This will reduce capital investment, depreciation and interest, but will likely increase repair costs, operating costs, and down time. This study uses costs based on 60% of new costs to reflect this mix of new and used equipment.

In this study, harvest costs are based on current custom harvest charges when equipment is hired, and on operating costs where the equipment is owned. Hulling is assumed to be custom, therefore interest and depreciation for hulling is not included.

There are four separate studies included in this cost study. Each reflects a slightly different set of assumptions. The 4 studies are:

Study #	Cultural	Irrigation	Equipment
1	Non-cultivation	Solid-set Sprinkler	Owns all
2	Non-cultivation	Solid-set Sprinkler	Hires all
3	Non Cultivation	Basin Flood	Owns all x/Harvest
4	Disk and Float	Basin Flood	Owns all x/Harvest

General Assumptions For Producing Almonds
Northern San Joaquin Valley - 1990

The following is a description of some general assumptions pertaining to sample costs of almond production in the Northern San Joaquin Valley.

1. **LAND:**
   Land is valued at $5263 per acre. Orchard is assumed to be 100 acres. Land is not depreciated.

2. **TREES:**
   Trees are planted at 24' x 24' spacings, with 75 trees per acre.

3. **IRRIGATION:**
   The orchard is irrigated by one of two different systems. The sprinkler irrigated orchards are solid-set and are serviced by two 100 hp pumps. Electric costs for pumping are $80/acre (electric).

   The flood irrigated orchards are serviced by irrigation district canals, and have the pumps as standby.

4. **LABOR:**
   Hourly wages for workers are $8.00/hr and $5.75/hr for skilled and field labor respectively. Costs include 34% for SDI, FICA, insurance and other benefits.

5. **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 $5000/year for the whole ranch and include office supplies, phone, bookkeeping, accounting, legal fees, etc.

6. **INTEREST:**
   Interest on operating capital is based on cash costs and is calculated at a rate of 12% per year. Interest is also charge on investment at 12% per year to account for income forgone that could be received from an alternative investment (opportunity cost) and is based on the value of the land plus the average value of the trees over the life of the orchard, buildings and equipment.

7. **EQUIPMENT COSTS:**
In allocating equipment costs per acre, the following calculations were made: (a) Original Cost of equipment is the cost of the new equipment plus sales tax; (b) Depreciation is straight line with no 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.

8. **FUEL AND 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 # column.

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

SAMPLE COSTS TO PRODUCE ALMONDS - NORTHERN SAN JOAQUIN VALLEY - 1990
STRIP WEED CONTROL - MOWED CENTERS - SOLID SET SPRINKLERS
ASSUMES GROWER OWNS ALL EQUIPMENT

LABOR COSTS:(TOTAL TO GROWER) SKILLED $8.00/hr FIELD $5.75/hr
COSTS ARE FOR A 100 ACRE ORCHARD 24' X 24' SQUARE 75 TREES/A YIELD @ 2000 lbs MEATS/A

OPERATION	TRACTOR #	EQUIPMENT #	HOURS	LABOR COST/A	FUEL& REPAIRS	MATERIAL COST	CUSTOM /RENT	TOTAL COST/A	WHEN COST OCCURS	YOUR COSTS
PRUNING (75 TREES/A)		8	11	63.25				63.25	NOV-JAN	
STACK BRUSH			2	11.50				11.50	NOV-JAN	
BUCK BRUSH	1	6	.3	2.40	2.94			5.34	NOV-JAN	
WINTER SANITATION										
KNOCK MUMMIES		12	1	8.00	22.11			30.11	DEC-JAN	
BLOW & RAKE		13	.5	4.00	5.10			9.10	DEC-JAN	
SHRED	1	5	.25	2.00	2.45			4.45	DEC-JAN	
TREE REPLACEMENT (1/ACRE)									WINTER	
REMOVE TREE		8	1	5.75			14.25	20.00		
NEW TREE						3.75		3.75		
PLANT,CARTON,TANK		9	.3	1.75		0.25		2.00		
FERTILIZE										
50# N	2		.4	3.20	1.28	25.00	4.00	33.48	SPRING	
150# N	2		.4	3.20	1.28	50.00	4.00	58.48	FALL	
IRRIGATION (8 X 3")		10&11	2.4	13.80		80.00		93.80	SPRING/SUMMER	
IRRIGATION (FROST 3X)		10&11	.5	2.88		10.00		12.88	SPRING	
MOW CENTERS (7X)	1	5	1.75	14.00	17.15			31.15	SPRING/SUMMER	
WEED CONTROL										
WINTER STRIP	2	3	.3	2.40	1.65	23.00		27.05	WINTER	
SPRING SPOT	2	3	.3	2.40	1.65	20.00		24.05	SPRING	
PREHARVEST		7	.2	1.60	0.24	6.00		7.84	SUMMER	
SPRAYS										
DORMANT	2	4	.4	3.20	9.48	30.00		42.68	DEC-JAN	
PINKBUD	2	4	.4	3.20	9.48	25.00		37.68	FEB	
FULL BLOOM	2	4	.4	3.20	9.48	25.00		37.68	FEB-MAR	
SHOTHOLE/NUTRIENTS	2	4	.4	3.20	9.48	20.00		32.68	MAR	
WORM/MITE	2	4	.4	3.20	9.48	25.00		37.68	MAY OR JULY	
ANT CONTROL			.2	1.08		10.00		11.08	JUNE-JULY	
POLLINATION (2 HIVES/A)						60.00		60.00	FEB	
MISCELLANEOUS										
BROKEN LIMBS	1	6&8	.1	1.80	0.81			2.61	SUMMER	
ATTN REPLANTS		9	.25	1.44	1.05	1.00		3.49	SPRING/SUMMER	
LEAF ANALYSIS($50/100 A)			.1	0.80			0.50	1.30	SUMMER	
RODENT CONTROL (2X)		7	.1	0.58	0.12	1.00		1.70	SPRING/SUMMER	
OTHER MISC.			2	11.50		10.00		21.50		
INTEREST ON OPERATING CAPITAL								43.70		
TOTAL CULTURAL COSTS								772.01		
SHAKE		12	1.5	12.00	34.07			46.07		
POLE			1.75	10.06				10.06		
SWEEP		13	.75	6.00	7.65			13.65		
HAND RAKE			.3	1.73				1.73		
PICKUP AND HAUL	1&2	14	1&1	16.00	16.27			32.27		
HULL & SHELL (.05/MEAT #)							100.00	100.00		
TOTAL HARVEST COSTS								203.78	AUG-SEPT	
OFFICE AND BUSINESS COSTS								50.00		
COUNTY TAXES								111.53		
EQUIPMENT INSURANCE								19.12		
TOTAL OVERHEAD COSTS								180.65		
TOTAL CASH COSTS								1156.44		
TOTAL CASH COST PER MEAT POUND	2000 MEAT LBS/ACRE							0.58		

INVESTMENT	PER PRODUCTION ACRE	ANNUAL COST DEPRECIATION	ANNUAL COST INTEREST @ 12%	
LAND (BARE)	5263.00		632.00	632.00
EQUIPMENT & BUILDINGS	2390.00	209.00	144.00	353.00
TREES (20 YEAR DEPRECIATION)	3500.00	175.00	210.00	385.00
TOTAL INVESTMENT COSTS	11153.00	384.00	986.00	1370.00
TOTAL COST PER ACRE				2526.44
TOTAL COST PER MEAT POUND @ 2000 MEAT POUNDS/ACRE				1.26

INTEREST RATE @ 12%

EQUIPMENT AND BUILDING LIST FOR ALMONDS
NORTHERN SAN JOAQUIN VALLEY - 1990
ASSUMES GROWER OWNS ALL EQUIPMENT

FUEL COSTS PER GALLON $.85 DIESEL
$1.00 UNLEADED

ITEM #		NEW COST	ANNUAL USE (ACRES)	COST PER ACRE	LIFE (HRS)	YEARS TO TRADE	OVERHEAD* DEPREC-IATION	OVERHEAD* INTEREST	TAR*	FUEL	REPAIRS	TOTAL
1	60 HP DIESEL TRACTOR	$25,000	100	$220	12000	10	$22.00	$15.00	120	3.40	2.50	$5.90
2	30 HP DIESEL TRACTOR	15000	100	150	12000	10	15.00	9.00	120	1.70	1.50	3.20
3	100 GAL PTO WEED SPRAYER	2750	100	28	1200	10	2.75	1.65	100		2.29	2.29
4	500 GAL ORCHARD SPRAYER	38000	100	380	2000	10	38.00	22.80	80	5.30	15.20	20.50
5	10 Ft FLAIL MOWER	6500	100	65	2000	10	6.50	3.90	120		3.90	3.90
6	BUCKRAKE/FRONT END LOADER	5600	100	56	2500	10	5.60	3.36	100		2.24	2.24
7	4 WHEEL ATV & SPRAYER	6000	100	60	3000	5	12.00	3.60	60		1.20	1.20
8	PRUNING EQUIPMENT	1200	100	12		10	1.20	0.72	100			
9	1/2 TON PICKUP	14000	100	140	2000	5	28.00	8.40	60		4.20	4.20
10	SOLID SET SPRINKLER SYSTEM	103000	100	1030	27000	15	68.67	61.80	10		0.38	0.38
	(FLOOD IRRIGATION SYSTEM)	(30000)	100	(300)	7000	35	(8.57)	(36.00)				
11	TWO IRRIGATION PUMPS(100HP)	35000	100	350	35000	20	17.50	21.00	5		0.05	0.05
12	SHAKER HARVESTER	63000	100	630	2500	10	63.00	37.80	80	2.55	20.16	22.71
13	SWEEPER	18000	100	180	2500	10	18.00	10.80	100	3.00	7.20	10.20
14	PICKUP MACHINE & 4 CARTS	22400	100	224	2500	10	22.40	13.44	80		7.17	7.17
15	12 Ft OFFSET DISC	6833	100	68	2500	10	6.83	4.10	120		3.28	3.28
16	14 Ft ROLLER FLOAT	1500	100	15	2500	10	1.50	0.90	120		0.72	0
17	10 Ft SPRINGTOOTH	6000	100	60	2500	10	6.00	3.60	120		2.88	2.88
	BUILDINGS	25000	100	250		35	7.14	15.00				
	MISC. TOOLS	6000	100	60		10	6.00	3.60				
	THERMOMETERS & FROST ALARM	500	100	5		5	1.00	0.30				
➡	TOTAL COSTS (SPRINKLERS)	$401,283		$3,983			$349	$241				
	TOTAL COSTS (FLOOD)	$328,283		$3,253			$289	$215				
➡	60% OF NEW COSTS* (SPRINKLERS)	$240,770		$2,390			$209	$144				
	60% OF NEW COSTS* (FLOOD)	$196,970		$1,952			$173	$129				

* 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 MACHINES 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/GAL X 0.0667
GASOLINE FUEL, OIL AND LUBE COSTS PER HOUR = HP X COST OF GASOLINE/GAL X 0.0889
HOURLY COSTS 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

SAMPLE COSTS TO PRODUCE ALMONDS - NORTHERN SAN JOAQUIN VALLEY - 1990
STRIP WEED CONTROL - MOWED CENTERS - SOLID SET SPRINKLERS
* ASSUMES GROWER HIRES ALL EQUIPMENT

LABOR COSTS:(TOTAL TO GROWER) SKILLED $8.00/hr FIELD $5.75/hr
COSTS ARE FOR A 100 ACRE ORCHARD 24' X 24' SQUARE 75 TREES/A YIELD @ 2000 lbs MEATS/A

OPERATION	TRACTOR #	EQUIPMENT #	HOURS	LABOR COST/A	FUEL& REPAIRS	MATERIAL COST	CUSTOM /RENT	TOTAL COST/A	WHEN COST OCCURS	YOUR COSTS
PRUNING (75 TREES/A)		8	11	63.25				63.25	NOV-JAN	
STACK BRUSH			2	11.50				11.50	NOV-JAN	
BUCK BRUSH			.3		*		9.00	9.00	NOV-JAN	
WINTER SANITATION										
KNOCK MUMMIES			1		*		50.00	50.00	DEC-JAN	
BLOW & RAKE			.5		*		17.50	17.50	DEC-JAN	
SHRED			.25		*		7.50	7.50	DEC-JAN	
TREE REPLACEMENT (1/ACRE)									WINTER	
REMOVE TREE			1	5.75			14.25	20.00		
NEW TREE						3.75		3.75		
PLANT,CARTON,TANK		9	.3	1.75		0.25		2.00		
FERTILIZE										
50# N			.4	3.20	*	25.00	4.00	32.20	SPRING	
150# N			.4	3.20	*	50.00	4.00	57.20	FALL	
IRRIGATION (8 X 3*)		10&11	2.4	13.80		80.00		93.80	SPRING/SUMMER	
IRRIGATION (FROST 3X)		10&11	.5	2.88		10.00		12.88	SPRING	
MOW CENTERS (7X)			1.75		*		52.50	52.50	SPRING/SUMMER	
WEED CONTROL										
WINTER STRIP			.3		*	23.00	10.00	33.00	WINTER	
SPRING SPOT			.3		*	20.00	10.00	30.00	SPRING	
PREHARVEST		7	.2	1.60	0.24	6.00		7.84	SUMMER	
SPRAYS										
DORMANT			.4		*	30.00	15.00	45.00	DEC-JAN	
PINKBUD			.4		*	25.00	15.00	40.00	FEB	
FULL BLOOM			.4		*	25.00	15.00	40.00	FEB-MAR	
SHOTHOLE/NUTRIENTS			.4		*	20.00	15.00	35.00	MAR	
WORM/MITE			.4		*	25.00	15.00	40.00	MAY OR JULY	
ANT CONTROL			.2	1.08		10.00		11.08	JUNE-JULY	
POLLINATION (2 HIVES/A)						60.00		60.00	FEB	
MISCELLANEOUS										
BROKEN LIMBS			.1		*		3.00	3.00	SUMMER	
ATTN REPLANTS		9	.25	1.44	1.05	1.00		3.49	SPRING/SUMMER	
LEAF ANALYSIS($50/100 A)			.1	0.80			0.50	1.30	SUMMER	
RODENT CONTROL (2X)		7	.1	0.50	0.12	1.00		1.62	SPRING/SUMMER	
OTHER MISC.			2	11.50		10.00		21.50		
INTEREST ON OPERATING CAPITAL								48.35		
TOTAL CULTURAL COSTS								854.26		
SHAKE			1.5		*		97.50	97.50		
POLE			1.75	10.06				10.06		
SWEEP			.75		*		26.25	26.25		
HAND RAKE			.3	1.73				1.73		
PICKUP AND HAUL			1				65.00	65.00		
HULL & SHELL (.05/MEAT #)							100.00	100.00		
TOTAL HARVEST COSTS								300.54	AUG-SEPT	
OFFICE AND BUSINESS COSTS								50.00		
COUNTY TAXES								99.07		
EQUIPMENT INSURANCE								9.15		
TOTAL OVERHEAD COSTS								158.22		
TOTAL CASH COSTS								1313.03		
TOTAL CASH COSTS PER MEAT POUND		2000 MEAT LBS/ACRE						0.66		

INVESTMENT	PER PRODUCTION ACRE	ANNUAL COST DEPRECIATION	ANNUAL COST INTEREST @ 12%	
LAND (BARE)	5263.00		631.56	631.56
EQUIPMENT AND BUILDINGS	1144.00	85.00	69.00	154.00
TREES (20 YEAR DEPRECIATION)	3500.00	175.00	210.00	385.00
TOTAL INVESTMENT COSTS	9907.00	260.00	910.56	1170.56

TOTAL COST PER ACRE	2483.59
TOTAL COST PER MEAT POUND @ 2000 MEAT POUNDS/ACRE	1.24

SAMPLE COSTS TO PRODUCE ALMONDS - NORTHERN SAN JOAQUIN VALLEY - 1990
STRIP WEED CONTROL - CULTIVATED CENTERS - FLOOD IRRIGATION
ASSUMES GROWER OWNS ALL BUT HARVEST EQUIPMENT

LABOR COSTS:(TOTAL TO GROWER) SKILLED $8.00/hr FIELD $5.75/hr
COSTS ARE FOR A 100 ACRE ORCHARD 24' X 24' SQUARE 75 TREES/A YIELD @ 2000 lbs MEATS/A

OPERATION	TRACTOR #	EQUIPMENT #	HOURS	LABOR COST/A	FUEL& REPAIRS	MATERIAL COST	CUSTOM /RENT	TOTAL COST/A	WHEN COST OCCURS	YOUR COSTS
PRUNING (75 TREES/A)		8	11	63.25				63.25	NOV-JAN	
STACK BRUSH			2	11.50				11.50	NOV-JAN	
BUCK BRUSH	1	6	.3	2.40	2.94			5.34	NOV-JAN	
WINTER SANITATION										
KNOCK MUMMIES			1	X	X		50.00	50.00	DEC-JAN	
BLOW & RAKE			.5	X	X		17.50	17.50	DEC-JAN	
SHREAD	1	5	.25	2.00	2.45			4.45	DEC-JAN	
TREE REPLACEMENT (1/ACRE)									WINTER	
REMOVE TREE		8	1	5.75			14.25	20.00		
NEW TREE						3.75		3.75		
PLANT,CARTON,TANK		9	.3	1.75		0.25		2.00		
FERTILIZE										
50# N	2		.4	3.20	1.28	25.00	4.00	33.48	SPRING	
150# N	2		.4	3.20	1.28	50.00	4.00	58.48	FALL	
IRRIGATION (8 X 5")			2	11.50		10.00		21.50	SPRING/SUMMER	
MOW CENTERS (4X)	1	5	1	8.00	9.80			17.80	SPRING/SUMMER	
DISC (2X)	1	15	1.30	10.00	11.93			21.93	SUMMER	
SPRINGTOOTH (1X)	1	17	1	5.81	8.78			14.59	SUMMER	
ROLLER FLOAT	1	16	1.5	10.64	9.93			20.57	SUMMER	
WEED CONTROL										
WINTER STRIP	2	3	.3	2.40	1.65	23.00		27.05	WINTER	
SPRING SPOT	2	3	.3	2.40	1.65	20.00		24.05	SPRING	
PREHARVEST						10.00		10.00	SUMMER	
SPRAYS										
DORMANT	2	4	.4	3.20	9.48	30.00		42.68	DEC-JAN	
PINKBUD	2	4	.4	3.20	9.48	25.00		37.68	FEB	
FULL BLOOM	2	4	.4	3.20	9.48	25.00		37.68	FEB-MAR	
SHOTHOLE/NUTRIENTS	2	4	.4	3.20	9.48	20.00		32.68	MAR	
WORM/MITE	2	4	.4	3.20	9.48	25.00		37.68	MAY OR JULY	
ANT CONTROL			.2	1.08		10.00		11.08	JUNE-JULY	
POLLINATION (2 HIVES/A)						60.00		60.00	FEB	
MISCELLANEOUS										
BROKEN LIMBS	1	6&8	.1	1.80	0.81			2.61	SUMMER	
ATTN REPLANTS		9	.25	1.44	1.05	1.00		3.49	SPRING/SUMMER	
LEAF ANALYSIS($50/100 A)			.1	0.80			0.50	1.30	SUMMER	
RODENT CONTROL (2X)		7	.1	0.58	0.12	1.00		1.70	SPRING/SUMMER	
OTHER MISC.			2	11.50		10.00		21.50		
INTEREST ON OPERATING CAPITAL								43.04		
TOTAL CULTURAL COSTS								760.36		
SHAKE			1.5	X	X		97.50	97.50		
POLE			1.75	10.06	X			10.06		
SWEEP			.75	X	X		26.25	26.25		
HAND RAKE			.3	1.73	X			1.73		
PICKUP AND HAUL	1&2		1&1	16.00	9.10		90.00	115.10		
HULL & SHELL (.05/MEAT #)							100.00	100.00		
TOTAL HARVEST COSTS								350.64	AUG-SEPT	
OFFICE AND BUSINESS COSTS								50.00		
COUNTY TAXES								100.94		
EQUIPMENT INSURANCE								10.65		
TOTAL OVERHEAD COSTS								161.59		
TOTAL CASH COSTS/ACRE								1272.59		
TOTAL CASH COSTS PER MEAT POUND	2000 MEAT POUNDS/ACRE							0.64		

INVESTMENT	PER PRODUCTION ACRE	ANNUAL COST DEPRECIATION	ANNUAL COST INTEREST @ 12%	
LAND (BARE)	5263.00		631.56	631.56
EQUIPMENT & BUILDINGS	1331.00	111.00	92.00	203.00
TREES (20 YEAR DEPRECIATION)	3500.00	175.00	210.00	385.00
TOTAL INVESTMENT COSTS	10094.00	286.00	933.56	1219.56
TOTAL COSTS PER ACRE				2492.15
TOTAL COST PER MEAT POUND @ 2000 MEAT POUNDS/ACRE				1.25

INTEREST RATE @ 12%

EQUIPMENT AND BUILDING LIST FOR ALMONDS
ALL EQUIPMENT CUSTOM HIRED
NORTHERN SAN JOAQUIN VALLEY - 1990

FUEL COSTS PER GALLON $.85 DIESEL
$1.00 UNLEADED

ITEM #		NEW COST	ANNUAL USE (ACRES)	COST PER ACRE	LIFE (HRS)	YEARS TO TRADE	OVERHEAD* DEPREC-IATION	INTEREST	TAR*	FUEL	REPAIRS	TOTAL
1	60 HP DIESEL TRACTOR	$0	0	$0	0	0	$0.00	$0.00	0	0.00	0.00	$0.00
2	30 HP DIESEL TRACTOR	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
3	100 GAL PTO WEED SPRAYER	0	0	0	0	0	0.00	0.00	0		0.00	0.00
4	500 GAL ORCHARD SPRAYER	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
5	10 Ft FLAIL MOWER	0	0	0	0	0	0.00	0.00	0		0.00	0.00
6	BUCKRAKE/FRONT END LOADER	0	0	0	0	0	0.00	0.00	0		0.00	0.00
7	4 WHEEL ATV & SPRAYER	6000	100	60	3000	5	12.00	3.60	60		1.20	1.20
8	PRUNING EQUIPMENT	1200	100	12		10	1.20	0.72	100			
9	1/2 TON PICKUP	14000	100	140	2000	5	28.00	8.40	60		4.20	4.20
10	SOLID SET SPRINKLER SYSTEM	103000	100	1030	27000	15	68.67	61.80	10		0.38	0.38
	(FLOOD IRRIGATION SYSTEM)	(30000)	100	(300)	7000	35	(8.57)	(36.00)				
11	TWO IRRIGATION PUMPS(100HP)	35000	100	350	35000	20	17.50	21.00	5		0.05	0.05
12	SHAKER HARVESTER	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
13	SWEEPER	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
14	PICKUP MACHINE & 4 CARTS	0	0	0	0	0	0.00	0.00	0		0.00	0.00
15	12 Ft OFFSET DISC	0	0	0	0	0	0.00	0.00	0		0.00	0.00
16	14 Ft ROLLER FLOAT	0	0	0	0	0	0.00	0.00	0		0.00	0.00
17	10 Ft SPRINGTOOTH	0	0	0	0	0	0.00	0.00	0		0.00	0.00
	BUILDINGS	25000	100	250		35	7.14	15.00				
	MISC. TOOLS	6000	100	60		10	6.00	3.60				
	THERMOMETERS & FROST ALARM	500	100	5		5	1.00	0.30				
➡	TOTAL COSTS (SPRINKLERS)	$190,700		$1,907			$142	$114				
	TOTAL COSTS (FLOOD)	$117,700		$1,177			$81	$89				
➡	60% OF NEW COSTS* (SPRINKLERS)	$114,420		$1,144			$85	$69				
	60% OF NEW COSTS* (FLOOD)	$70,620		$706			$49	$53				

* DEFINITIONS

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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 MACHINES 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/GAL X 0.0667
GASOLINE FUEL, OIL AND LUBE COSTS PER HOUR = HP X COST OF GASOLINE/GAL X 0.0889
HOURLY COSTS 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

SAMPLE COSTS TO PRODUCE ALMONDS - NORTHERN SAN JOAQUIN VALLEY - 1990
STRIP WEED CONTROL - MOWED CENTERS - FLOOD IRRIGATION
ASSUMES GROWER OWNS ALL BUT HARVEST EQUIPMENT

LABOR COSTS:(TOTAL TO GROWER) SKILLED $8.00/hr FIELD $5.75/hr
COSTS ARE FOR AN 80 ACRE ORCHARD 24' X 24' SQUARE 75 TREES/A YIELD @ 2000 lbs MEATS/A

OPERATION	TRACTOR #	EQUIPMENT #	HOURS	LABOR COST/A	FUEL& REPAIRS	MATERIAL COST	CUSTOM /RENT	TOTAL COST/A	WHEN COST OCCURS	YOUR COSTS
PRUNING (75 TREES/A)		8	11	63.25				63.25	NOV-JAN	
STACK BRUSH			2	11.50				11.50	NOV-JAN	
BUCK BRUSH	1	6	.3	2.40	2.94			5.34	NOV-JAN	
WINTER SANITATION										
KNOCK MUMMIES			1		X		50.00	50.00	DEC-JAN	
BLOW & RAKE			.5		X		17.50	17.50	DEC-JAN	
SHRED	1	5	.25	2.00	2.45			4.45	DEC-JAN	
TREE REPLACEMENT (1/ACRE)									WINTER	
REMOVE TREE		8	1	5.75			14.25	20.00		
NEW TREE						3.75		3.75		
PLANT,CARTON,TANK		9	.3	1.75		0.25		2.00		
FERTILIZE										
50# N	2		.4	3.20	1.28	25.00	4.00	33.48	SPRING	
150# N	2		.4	3.20	1.28	50.00	4.00	58.48	FALL	
IRRIGATION (8 X 5")			2	11.50		10.00		21.50	SPRING/SUMMER	
MOW CENTERS (7X)	1	5	1.75	14.00	17.15			31.15	SPRING/SUMMER	
WEED CONTROL										
WINTER STRIP	2	3	.3	2.40	1.65	23.00		27.05	WINTER	
SPRING SPOT	2	3	.3	2.40	1.65	20.00		24.05	SPRING	
PREHARVEST		7	.2	1.60	0.24	6.00		7.84	SUMMER	
SPRAYS										
DORMANT	2	4	.4	3.20	9.48	30.00		42.68	DEC-JAN	
PINKBUD	2	4	.4	3.20	9.48	25.00		37.68	FEB	
FULL BLOOM	2	4	.4	3.20	9.48	25.00		37.68	FEB-MAR	
SHOTHOLE/NUTRIENTS	2	4	.4	3.20	9.48	20.00		32.68	MAR	
WORM/MITE	2	4	.4	3.20	9.48	25.00		37.68	MAY OR JULY	
ANT CONTROL			.2	1.08		10.00		11.08	JUNE-JULY	
POLLINATION (2 HIVES/A)						60.00		60.00	FEB	
MISCELLANEOUS										
BROKEN LIMBS	1	6&8	.1	1.80	0.81			2.61	SUMMER	
ATTN REPLANTS		9	.25	1.44	1.05	1.00		3.49	SPRING/SUMMER	
LEAF ANALYSIS($50/100A)			.1	0.80			0.50	1.30	SUMMER	
RODENT CONTROL (2X)		7	.1	0.58	0.12	1.00		1.70	SPRING/SUMMER	
OTHER MISC.			2	11.50		10.00		21.50		
INTEREST ON OPERATING CAPITAL								40.29		
TOTAL CULTURAL COSTS								711.71		
SHAKE		X	1.5		X		97.50	97.50		
POLE			1.75	10.06	X			10.06		
SWEEP		X	.75		X		26.25	26.25		
HAND RAKE			.3	1.73	X			1.73		
PICKUP AND HAUL	1&2	X	1&1	16.00	9.10		90.00	115.10		
HULL & SHELL (.05/MEAT #)							100.00	100.00		
TOTAL HARVEST COSTS								350.64	AUG-SEPT	
OFFICE AND BUSINESS COSTS								50.00		
COUNTY TAXES								100.94		
EQUIPMENT INSURANCE								10.65		
TOTAL OVERHEAD COSTS								161.59		
TOTAL CASH COSTS								1223.93		

TOTAL CASH COSTS PER MEAT POUND 2000 MEAT POUNDS/ACRE : 0.61

INVESTMENT	PER PRODUCTION ACRE	ANNUAL COST DEPRECIATION	ANNUAL COST INTEREST @ 12%	
LAND (BARE)	5263.00		631.56	631.56
EQUIPMENT AND BUILDINGS	1331.00	111.00	92.00	203.00
TREES (20 YEAR DEPRECIATION)	3500.00	175.00	210.00	385.00
TOTAL INVESTMENT COSTS	10094.00	286.00	933.56	1219.56

TOTAL COSTS PER ACRE : 2443.49

TOTAL COST PER MEAT POUND @ 2000 MEAT POUNDS/ACRE : 1.22

INTEREST RATE @ 12%

EQUIPMENT AND BUILDING LIST FOR ALMONDS
NORTHERN SAN JOAQUIN VALLEY - 1990
ASSUMES GROWER OWNS ALL BUT HARVEST EQUIPMENT

FUEL COSTS PER GALLON $.85 DIESEL
$1.00 UNLEADED

ITEM #		NEW COST	ANNUAL USE (ACRES)	COST PER ACRE	LIFE (HRS)	YEARS TO TRADE	-----OVERHEAD*---- DEPREC-IATION	INTEREST	TAR*	FUEL	REPAIRS	TOTAL
1	60 HP DIESEL TRACTOR	$25,000	100	$220	12000	10	$22.00	$15.00	120	3.40	2.50	$5.90
2	30 HP DIESEL TRACTOR	15000	100	150	12000	10	15.00	9.00	120	1.70	1.50	3.20
3	100 GAL PTO WEED SPRAYER	2750	100	28	1200	10	2.75	1.65	100		2.29	2.29
4	500 GAL ORCHARD SPRAYER	38000	100	380	2000	10	38.00	22.80	80	5.30	15.20	20.50
5	10 Ft FLAIL MOWER	6500	100	65	2000	10	6.50	3.90	120		3.90	3.90
6	BUCKRAKE/FRONT END LOADER	5600	100	56	2500	10	5.60	3.36	100		2.24	2.24
7	4 WHEEL ATV & SPRAYER	6000	100	60	3000	5	12.00	3.60	60		1.20	1.20
8	PRUNING EQUIPMENT	1200	100	12		10	1.20	0.72	100			
9	1/2 TON PICKUP	14000	100	140	2000	5	28.00	8.40	60		4.20	4.20
10	SOLID SET SPRINKLER SYSTEM	103000	100	1030	27000	15	68.67	61.80	10		0.38	0.38
	(FLOOD IRRIGATION SYSTEM)	(30000)	100	(300)	7000	35	(8.57)	(36.00)				
11	TWO IRRIGATION PUMPS(100HP)	35000	100	350	35000	20	17.50	21.00	5		0.05	0.05
12	SHAKER HARVESTER	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
13	SWEEPER	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
14	PICKUP MACHINE & 4 CARTS	0	0	0	0	0	0.00	0.00	0		0.00	0.00
15	12 Ft OFFSET DISC	6833	100	68	2500	10	6.83	4.10	120		3.28	3.28
16	14 Ft ROLLER FLOAT	1500	100	15	2500	10	1.50	0.90	120		0.72	0.72
17	10 Ft SPRINGTOOTH	6000	100	60	2500	10	6.00	3.60	120		2.88	2.88
	BUILDINGS	25000	100	250		35	7.14	15.00				
	MISC. TOOLS	6000	100	60		10	6.00	3.60				
	THERMOMETERS & FROST ALARM	500	100	5		5	1.00	0.30				
	TOTAL COSTS (SPRINKLERS)	$297,883		$2,949			$246	$179				
➡	TOTAL COSTS (FLOOD)	$224,883		$2,219			$186	$153				
	60% OF NEW COSTS* (SPRINKLERS)	$178,730		$1,769			$147	$107				
➡	60% OF NEW COSTS* (FLOOD)	$134,930		$1,331			$111	$92				

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2	30 HP DIESEL TRACTOR	15000	100	150	12000	10	15.00	9.00	120	1.70	1.50	3.20
3	100 GAL PTO WEED SPRAYER	2750	100	28	1200	10	2.75	1.65	100		2.29	2.29
4	500 GAL ORCHARD SPRAYER	38000	100	380	2000	10	38.00	22.80	80	5.30	15.20	20.50
5	10 Ft FLAIL MOWER	6500	100	65	2000	10	6.50	3.90	120		3.90	3.90
6	BUCKRAKE/FRONT END LOADER	5600	100	56	2500	10	5.60	3.36	100		2.24	2.24
7	4 WHEEL ATV & SPRAYER	6000	100	60	3000	5	12.00	3.60	60		1.20	1.20
8	PRUNING EQUIPMENT	1200	100	12		10	1.20	0.72	100			
9	1/2 TON PICKUP	14000	100	140	2000	5	28.00	8.40	60		4.20	4.20
10	SOLID SET SPRINKLER SYSTEM	103000	100	1030	27000	15	68.67	61.80	10		0.38	0.38
	(FLOOD IRRIGATION SYSTEM)	(30000)	100	(300)	7000	35	(8.57)	(36.00)				
11	TWO IRRIGATION PUMPS(100HP)	35000	100	350	35000	20	17.50	21.00	5		0.05	0.05
12	SHAKER HARVESTER	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
13	SWEEPER	0	0	0	0	0	0.00	0.00	0	0.00	0.00	0.00
14	PICKUP MACHINE & 4 CARTS	0	0	0	0	0	0.00	0.00	0		0.00	0.00
15	12 Ft OFFSET DISC	6833	100	68	2500	10	6.83	4.10	120		3.28	3.[illegible]
16	14 Ft ROLLER FLOAT	1500	100	15	2500	10	1.50	0.90	120		0.72	0[illegible]
17	10 Ft SPRINGTOOTH	6000	100	60	2500	10	6.00	3.60	120		2.88	2.88
	BUILDINGS	25000	100	250		35	7.14	15.00				
	MISC. TOOLS	6000	100	60		10	6.00	3.60				
	THERMOMETERS & FROST ALARM	500	100	5		5	1.00	0.30				
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