

1992
**U.C. COOPERATIVE EXTENSION
SAMPLE COSTS TO ESTABLISH AND PRODUCE ALFALFA HAY
IN THE SACRAMENTO VALLEY**

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by

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The detailed costs for alfalfa hay establishment and production in Sacramento Valley are presented in this study. The hypothetical farm used in this report consists of 200 acres in alfalfa hay production.

Practices described 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 current figures. Some costs and practices detailed in this study may not be applicable to your situation. This study is only intended as a guide and can be used 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 Table 1, Costs Per Acre To Establish Alfalfa Hay and Table 5, Costs Per Acre To Produce Alfalfa Hay.

This study consists of **General Assumptions for Establishing and Producing Alfalfa Hay** and ten tables.

Table 1.	Costs Per Acre To Establish Alfalfa Hay
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For an explanation of calculations used for the study refer to the attached General Assumptions, call the Department of Agricultural Economics, Cooperative Extension, University of California, Davis, California, (916) 752-3589 or call the Farm Advisor in the county of interest.

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ASSUMPTIONS FOR ESTABLISHING AND PRODUCING ALFALFA HAY

Sacramento Valley - 1992
U.C. Cooperative Extension

The following is a description of some general assumptions pertaining to sample costs of alfalfa hay production in Sacramento Valley. These costs are presented on an annual, per acre basis.

1. LAND:

This cost of production study is based on a 200 acre farm growing only alfalfa hay. The land in this study is rented by the grower for \$100 per acre. Land is not depreciated.

2. STAND ESTABLISHMENT:

Table 1, Costs Per Acre To Establish Alfalfa Hay shows the cost associated with ground preparation, planting and growing an alfalfa stand until the first production year. The alfalfa stand is planted in late summer/fall and the first production year's hay is harvested over the following summer. To obtain stand establishment cost for an average production year, the total cost per acre to establish alfalfa hay in **Table 1**, is divided by 5. This becomes an investment cost in **Table 5, Costs Per Acre To Produce Alfalfa Hay**. The annual production cost in the study represents the first, second, third, fourth, or fifth year's production cost.

3. CULTURAL PRACTICES:

Cultural, pesticide and fertilizer inputs for the production of alfalfa hay vary considerably from grower to grower and field to field. While a field can produce alfalfa hay for 4 to 5 years, disease and weed infestations may reduce this period by one or more years.

ESTABLISHMENT YEAR: In July of the establishment year the ground is first chiselled deep followed by discing or plowing twice in August. Phosphorus, potassium and sulfur fertilizers are then custom applied. The field is laser planed. This laser planing will last 8 years. The field is disced lightly and landplaned in order to touch up minor high and low spots. Borders are prepared just before planting. In September the seed is flown on the field and followed by a roller and an irrigation, though some growers will seed in late winter or early spring. A total of 3 irrigations may occur during the establishment year in the months of September, October and April. Herbicides are applied to control weeds during stand establishment in December and March. Weevils are also sprayed for in March. All of these pest sprays are applied by airplane. **PRODUCTION YEAR:** Crop water requirements for alfalfa hay in the Sacramento Valley can range from 4 to 5 acre feet of water per year. For this study, 4.25 acre-feet of water is applied in twelve irrigations from March through September. Water is supplied by an irrigation district and applied to the field through an underground mainline to alfalfa valves to flood the stand between borders. Pest control is managed with four aircraft applications of insecticides. Weevils are sprayed in February and March while worms are treated in July and August. Post-emergent herbicides are applied to seedling stands when needed. Soil residual herbicides for winter weed control are applied in December to established stands. Summer grass control may be needed. The practices and inputs used in this cost study serve only as a sample or a guide. Variations of cultural practices and inputs can be significant.

4. YIELDS & RETURNS:

The crop yield used in this study is 7 tons of excellent quality dairy hay per acre from a total of six cuttings per year. All of the hay is sold to the lactating cow market for an estimated price of a \$90 per ton of hay is used in this study. Returns will vary depending on market conditions and marketing strategies. Price premiums can be received for hay sold during the winter months, but storage facilities are required. For an analysis of hay

5. HARVEST:

In this cost study the ranch owns its harvesting equipment and performs all of its harvest operations. Six cuttings of hay is normal for the valley, though an seventh cutting is possible in the late fall. If an seventh cutting is harvested, the most likely option is to have it green chopped for a dairy instead of baled. If the seventh cutting is for a dairy, the grower normally pays for the swathing and the dairy is responsible for the rest of the operations. If a green chop is not possible due to distance or other factors, then sheeping off is another possibility. The equipment for harvest operations are inventoried, and labor, fuel, repairs, depreciation, and interest on investment, are calculated as a cost of production. If a grower contracts his harvest operation, all harvest equipment and its appropriate cost should be subtracted from harvest and investment costs in Table 1 and a custom charge would then be added to harvest costs in Table 1. Rates for custom swathing, windrowing, baling and roadsiding hay range between \$26 - \$32 per ton with \$29 per ton as typical.

6. LABOR:

Basic hourly wages for workers are \$7.00 and \$5.25 per hour for machine operators and field workers (irrigator), respectively. Adding 34% for SDI, FICA, insurance and other benefits increases the labor rates shown to \$9.38 per hour for machine labor and \$7.04 per hour for non-machine labor. The labor hours for operations involving machinery are 10% higher than the machine hours to account for extra labor involved in equipment set-up, moving, maintenance and repair.

7. INVESTMENT:

The investments shown in Table 7 are those that are partially or completely allocated to the alfalfa hay operation. Costs of investments such as stand establishment are attributed only to alfalfa hay and cannot be spread over the rest of the farms operations. Annual investments shown in Tables 1 and 5 represent depreciation and opportunity cost for each investment on an annual per acre basis.

8. OVERHEAD:

County taxes are assessed at 1% of the average value of equipment, buildings and improvements. Insurance is charged at 0.5% of the average value of the equipment over its useful life. Office and business costs are estimated at \$30 per acre for the ranch. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road maintenance, etc.

9. INTEREST:

Interest on operating capital is based on cash costs and is calculated monthly for eleven months until the last harvest at the rate of 11.75% per year. Interest is also charged on investment at 12.05% per year to account for income foregone that could be received from an alternative investment (opportunity cost).

10. EQUIPMENT COSTS:

In allocating the equipment costs per acre, the following calculations were made and shown in Table 3 and Table 7: (a) **Original Cost** of equipment is the cost of the new equipment plus sales tax. (b) **Depreciation** is straight line with a 10% salvage value. (c) **Interest** on investment is calculated as the average value per acre of the equipment during its useful life (average value equals (new cost + salvage value) / 2 on a per acre basis) multiplied by an interest rate of 12.05%. (d) The total investment costs are also calculated as 40% of the depreciation and the interest costs for all new equipment to reflect a mix of the new

and used equipment. These values are also used in **Table 1** and **Table 5**. Hourly equipment costs are shown in **Table 4**.

11. FUEL & REPAIR:

The fuel and repair cost per acre for each operation in **Tables 1** and **5**, is determined by multiplying the total hourly operating cost for each piece of equipment in **Tables 4** and **8**, by the number of hours per acre for that operation. Prices for on-farm delivery of gasoline and diesel are \$0.79 and \$1.00 per gallon respectively.

Table 1.

**U.C. COOPERATIVE EXTENSION
COSTS PER ACRE TO ESTABLISH ALFALFA HAY
SACRAMENTO VALLEY - 1992**

Labor Rate: \$ 9.38/hr. machine labor Interest Rate: 11.75%
 \$ 7.04/hr. non-machine labor Stand Life: 5 years

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre				Total Cost	Your Cost
		Labor Cost	Fuel & Repairs	Material Cost	Custom/ Rent		
Cultural:							
Deep chisel	0.29	3.22	6.58	0.00	0.00	9.80	
Disc stubble or plow - 2X	0.46	5.16	10.76	0.00	0.00	15.91	
Fertilize - custom	0.00	0.00	0.00	80.60	14.25	94.85	
Laser plane - 1 out of 8 years	0.00	0.00	0.00	0.00	37.50	37.50	
Finish discing	0.19	2.15	1.26	0.00	0.00	3.41	
Land plane field	0.14	1.55	3.20	0.00	0.00	4.75	
Border preparation	0.46	5.16	2.80	0.00	0.00	7.96	
Plant - custom	0.00	0.00	0.00	40.00	4.50	44.50	
Roll field	0.14	1.61	0.89	0.00	0.00	2.50	
Irrigate	0.54	3.80	0.00	26.21	0.00	30.01	
Weed control - custom	0.00	0.00	0.00	42.05	10.00	52.05	
Weevil control - custom	0.00	0.00	0.00	11.26	5.00	16.26	
Pickup use	0.37	4.13	1.54	0.00	0.00	5.67	
TOTAL CULTURAL COSTS	2.58	26.78	27.02	200.12	71.25	325.16	
Interest on operating capital @ 11.75%						23.12	
TOTAL OPERATING COSTS/ACRE		26.78	27.02	200.12	71.25	348.28	
OVERHEAD:							
Land rent						100.00	
Office expense						30.00	
Property Taxes						1.96	
Equipment Insurance						0.98	
Investment Repairs						2.00	
TOTAL CASH OVERHEAD COSTS						134.94	
TOTAL CASH COSTS/ACRE						483.22	
NON-CASH OVERHEAD:							
Investment	Per producing Acre	Annual Cost					
		Depreciation	Interest @ 12.25%				
Shop Building	185.00	9.25	11.33	20.58			
ATV, 4wd	32.50	5.85	2.19	8.04			
Shop tools	50.00	3.00	3.37	6.37			
Equipment	32.50	5.85	2.19	8.04			
TOTAL NON-CASH OVERHEAD COSTS	373.28	26.19	24.02	50.20			
TOTAL COSTS/ACRE						533.42	
TOTAL COSTS/ACRE						543.72	

Table 2.

U.C. COOPERATIVE EXTENSION
MONTHLY CASH COSTS PER ACRE TO ESTABLISH ALFALFA HAY
SACRAMENTO VALLEY - 1992

Beginning JUL 90	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Ending JUN 91	90	90	90	90	90	90	91	91	91	91	91	91	
Cultural:													
Deep chisel	9.8												10
Disc stubble or plow		15.9											16
Fertilize		94.9											95
Laser plane		37.5											38
Finish discing		3.4											3
Land plane field		4.7											5
Border preparation		8.0											8
Plant			44.5										44
Roll field			2.5										2
Irrigate			10.0	10.0						10.0			30
Weed control						35.0			17.1				52
Weevil control									16.3				16
Pickup use										5.7			6
TOTAL CULTURAL COSTS	9.8	164.4	57.0	10.0		35.0			33.3	15.7			325
Interest on oper. capital	0.1	1.7	2.3	2.4	2.4	2.7	2.7	2.7	3.0	3.2			23
TOTAL OPERATING COSTS/ACRE	9.9	166.1	59.3	12.4	2.4	37.7	2.7	2.7	36.3	18.9			348
OVERHEAD:													
Land rent							100.0						100
Office expense							30.0						30
Property Taxes							2.0						2
Equipment Insurance							1.0						1
Investment Repairs	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2			2
TOTAL CASH OVERHEAD COSTS	0.2	0.2	0.2	0.2	0.2	0.2	133.1	0.2	0.2	0.2			135
TOTAL CASH COSTS/ACRE	10.1	166.3	59.5	12.6	2.6	37.9	135.8	2.9	36.5	19.1			483
TOTAL CASH COSTS/TON	1.4	23.8	8.5	1.8	0.4	5.4	19.4	1.9	5.2	2.7			71

U.C. COOPERATIVE EXTENSION
 ANNUAL AND HOURLY EQUIPMENT COSTS TO ESTABLISH ALFALFA HAY
 SACRAMENTO VALLEY - 1992

Table 3. ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Total
90	270 hp crawler #1	148400	12	11130.00	9998.45	408.10	816.20	22352.75
90	80 hp 2wd tractor	42000	10	3780.00	2829.75	115.50	231.00	6956.25
90	Borderscraper	1800	15	108.00	121.27	4.95	9.90	244.12
90	Disc - finish 12'	4240	15	254.40	285.67	11.66	23.32	575.05
90	Disc - stubble 10'	12410	15	744.60	836.12	34.13	68.26	1683.11
90	Landplane 40'x 16'	21200	15	1272.00	1428.35	58.30	116.60	2875.25
90	Pickup, 3/4 ton	16000	7	2057.14	1078.00	44.00	88.00	3267.14
90	Roller - flat 16'	2200	15	132.00	148.23	6.05	12.10	298.38
90	Subsoiler, 8' 3 shank	10000	15	600.00	673.75	27.50	55.00	1356.25
TOTAL		258250		20078.14	17399.59	710.19	1420.38	39608.30
40% of New Cost *		103300		8031.26	6959.84	284.08	568.15	15843.32

* Used to reflect a mix of new and used equipment.

Table 4. HOURLY EQUIPMENT COSTS

Yr	Description	Actual Hours Used	-Non-Cash Over.- Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Repairs	Operating Fuel & Lube	Total Oper.	Cos
90	270 hp crawler #1	1080.6	4.12	3.70	0.15	0.30	4.95	14.24	19.19	
90	80 hp 2wd tractor	1301.7	1.16	0.87	0.04	0.07	1.68	3.57	5.25	
90	Borderscraper	165.6	0.26	0.29	0.01	0.02	0.34	0.00	0.34	
90	Disc- finish 12'	165.2	0.62	0.69	0.03	0.06	0.81	0.00	0.81	
90	Disc- stubble 10'	165.6	1.80	2.02	0.08	0.16	2.38	0.00	2.38	
90	Landplane 40'x 16'	165.6	3.07	3.45	0.14	0.28	2.05	0.00	2.05	
90	Pickup, 3/4 ton	266.4	3.09	1.62	0.07	0.13	1.89	2.30	4.19	
90	Roller- flat 16'	166.6	0.32	0.36	0.01	0.03	0.42	0.00	0.42	
90	Subsoiler, 8'3shk	165.2	1.45	1.63	0.07	0.13	1.92	0.00	1.92	

Table 5.

U.C. COOPERATIVE EXTENSION
 COSTS PER ACRE TO PRODUCE ALFALFA HAY
 SACRAMENTO VALLEY - 1992

Labor Rate: \$ 9.38/hr. machine labor Interest Rate: 11.75%
 \$ 7.04/hr. non-machine labor Yield per Acre: 7.00 ton

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre					Total Cost	Your Cost
		Labor Cost	Fuel & Repairs	Material Cost	Custom/Rent			
Cultural:								
Weevil control	0.00	0.00	0.00	11.26	5.00	16.26		
Irrigate - flood	2.16	15.21	0.00	106.08	0.00	121.29		
Worm control	0.00	0.00	0.00	11.50	5.00	16.50		
Pickup use	0.60	6.75	2.51	0.00	0.00	9.27		
TOTAL CULTURAL COSTS	2.76	21.96	2.51	128.84	10.00	163.31		
Harvest:								
Swath hay	1.20	13.51	14.12	0.00	0.00	27.62		
Windrow hay	0.92	10.39	6.07	0.00	0.00	16.46		
Bale hay	0.43	4.82	10.41	60.00	0.00	75.23		
Pickup & roadside hay	0.60	6.75	10.36	0.00	0.00	17.12		
TOTAL HARVEST COSTS	3.15	35.48	40.95	60.00	0.00	136.43		
Postharvest:								
Weed control	0.00	0.00	0.00	20.65	5.00	25.65		
TOTAL POSTHARVEST COSTS	0.00	0.00	0.00	20.65	5.00	25.65		
Invest on operating capital @ 11.75%							10.53	
TOTAL OPERATING COSTS/ACRE		57.44	43.46	209.49	15.00	335.92		
TOTAL OPERATING COSTS/TON							47.99	
CASH OVERHEAD:								
Land rent							100.00	
Office expense							30.00	
Property Taxes							5.60	
Equipment Insurance							2.80	
Investment Repairs							2.00	
TOTAL CASH OVERHEAD COSTS							140.40	
TOTAL CASH COSTS/ACRE							476.32	
TOTAL CASH COSTS/TON							68.05	
NON-CASH OVERHEAD:								
Investment	Per producing Acre	Annual Cost						
		Depreciation	Interest @ 12.05%					
Establishment cost	533.42	106.68	32.14	138.82				
Shop Building	185.00	9.25	11.15	20.40				
ATV, 4wd	32.50	5.85	2.15	8.00				
Shop tools	50.00	3.00	3.31	6.31				
Equipment	282.33	25.96	18.71	44.68				
TOTAL NON-CASH OVERHEAD COSTS	1083.25	150.75	67.46	218.21				
TOTAL COSTS/ACRE				694.53				
TOTAL COSTS/TON				99.22				

Table 6.

U.C. COOPERATIVE EXTENSION
MONTHLY CASH COSTS PER ACRE TO PRODUCE ALFALFA HAY
SACRAMENTO VALLEY - 1992

Beginning FEB 91	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	TOTAL
Ending JAN 92	91	91	91	91	91	91	91	91	91	91	91	92	
Cultural:													
Weevil control	8.1	8.1											16
Irrigate - flood		10.1	10.1	20.2	20.2	20.2	20.2	20.2					121
Worm control						8.3	8.3						16
Pickup use											9.3		9
TOTAL CULTURAL COSTS	8.1	18.2	10.1	20.2	20.2	28.5	28.5	20.2			9.3		163
Harvest:													
Swath hay			4.6	4.6	4.6	4.6	4.6	4.6					28
Windrow hay			2.7	2.7	2.7	2.7	2.7	2.7					16
Bale hay			12.5	12.5	12.5	12.5	12.5	12.5					75
Pickup & roadside hay			2.9	2.9	2.9	2.9	2.9	2.9					17
TOTAL HARVEST COSTS			22.7	22.7	22.7	22.7	22.7	22.7					136
Postharvest:													
Weed control											25.7		26
TOTAL POSTHARVEST COSTS											25.7		26
Interest on oper. capital	0.1	0.3	0.6	1.0	1.4	1.9	2.4	2.8					11
TOTAL OPERATING COSTS/ACRE	8.2	18.5	33.4	44.0	44.4	53.1	53.6	45.8			34.9		336
TOTAL OPERATING COSTS/TON	1.2	2.6	4.8	6.3	6.3	7.6	7.7	6.5			5.0		48
OVERHEAD:													
Land rent								100.0					100
Office expense								30.0					30
Property Taxes					5.6								6
Equipment Insurance					2.8								3
Investment Repairs	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		2
TOTAL CASH OVERHEAD COSTS	0.2	0.2	0.2	0.2	8.6	0.2	0.2	130.2	0.2	0.2	0.2		140
TOTAL CASH COSTS/ACRE	8.4	18.7	33.6	44.1	53.0	53.3	53.8	176.0	0.2	0.2	35.1		476
TOTAL CASH COSTS/TON	1.2	2.7	4.8	6.3	7.6	7.6	7.7	25.1	0.0	0.0	5.0		68

ANNUAL EQUIPMENT, INVESTMENT AND OVERHEAD COSTS TO PRODUCE ALFALFA HAY
SACRAMENTO VALLEY - 1992

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Total
90	60 hp 2wd tractor	38200	10	3438.00	2531.71	105.05	210.10	6284.86
90	80 hp 2wd tractor	42000	10	3780.00	2783.55	115.50	231.00	6910.05
90	Baler, engine, #1	42000	10	3780.00	2783.55	115.50	231.00	6910.05
90	Baler, engine, #2	42000	10	3780.00	2783.55	115.50	231.00	6910.05
90	Balewagon, SP	73000	10	6570.00	4838.07	200.75	401.50	12010.32
90	Pickup, 3/4 ton	16000	7	2057.14	1060.40	44.00	88.00	3249.54
90	Rake, CD 20'	13000	10	1170.00	861.57	35.75	71.50	2138.82
90	Swather, SP 14'	44000	10	3960.00	2916.10	121.00	242.00	7239.10
TOTAL		310200		28535.14	20558.50	853.05	1706.10	51652.79
40% of New Cost *		124080		11414.06	8223.40	341.22	682.44	20661.12

* Used to reflect a mix of new and used equipment.

ANNUAL INVESTMENT COSTS

Yr	Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Repairs	Total
INVESTMENT									
	ATV, 4wd	6500	5	1170.00	430.79	17.88	35.75	50.00	1704.42
	Establishment cost	106684	5	21336.80	6427.71	266.71	533.42	0.00	28564.64
	Shop Building	37000	20	1850.00	2229.25	92.50	185.00	250.00	4606.75
	Shop tools	10000	15	600.00	662.75	27.50	55.00	100.00	1445.25
TOTAL INVESTMENT		160184		24956.80	9750.50	404.59	809.17	400.00	36321.06

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Land rent	200.00	acre	100.00	20000.00
Office expense	200.00	acre	30.00	6000.00

U.C. COOPERATIVE EXTENSION
 HOURLY EQUIPMENT COSTS
 SACRAMENTO VALLEY - 1992

Table 8.

Yr Description	Actual Hours Used	----- COSTS PER HOUR -----							Total Oper.	Total Costs/Hr.
		-Non-Cash Depreciation	Over.- Interest	- Cash Insur- ance	Overhead - Taxes	Repairs	Operating Fuel & Lube			
90 60 hp 2wd tractor	1069.6	1.29	0.95	0.04	0.08	1.40	2.68	4.08	6.43	
90 80 hp 2wd tractor	1309.8	1.15	0.85	0.04	0.07	1.68	3.57	5.25	7.36	
90 Baler, engine #1	264.8	5.71	4.20	0.17	0.35	4.07	2.30	6.37	16.81	
90 Baler, engine #2	264.8	5.71	4.20	0.17	0.35	4.07	2.30	6.37	16.81	
90 Balewagon, SP	261.8	10.04	7.39	0.31	0.61	9.34	6.36	15.70	34.05	
90 Pickup, 3/4 ton	267.0	3.08	1.59	0.07	0.13	1.89	2.30	4.19	9.06	
90 Rake, CD 20'	249.6	1.87	1.38	0.06	0.11	2.09	0.00	2.09	5.52	
90 Swather, SP 14'	264.0	6.00	4.42	0.18	0.37	7.06	3.63	10.69	21.66	

U.C. COOPERATIVE EXTENSION
RANGING ANALYSIS
SACRAMENTO VALLEY - 1992

Table 9.

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE ALFALFA HAY

	YIELD (TON/ACRE)						
	5.50	6.00	6.50	7.00	7.50	8.00	8.50
OPERATING COSTS/ACRE:							
Cultural Cost	163	163	163	163	16	167	167
Harvest Cost	129	131	134	136	13	142	144
Postharvest Cost	26	26	26	26	2	26	26
Interest on operating capital	10	10	10	11	1	11	11
TOTAL OPERATING COSTS/ACRE	328	330	333	336	33	345	348
TOTAL OPERATING COSTS/TON	59.59	55.08	51.26	47.99	45.1	43.15	40.93
CASH OVERHEAD COSTS/ACRE	140	140	140	140	14	140	140
TOTAL CASH COSTS/ACRE	468	471	474	476	47	486	488
TOTAL CASH COSTS/TON	85.12	78.48	72.86	68.05	63.8	60.70	57.45
NON-CASH OVERHEAD COSTS/ACRE	218	218	218	218	21	218	219
TOTAL COSTS/ACRE	686	689	692	695	69	704	707
TOTAL COSTS/TON	124.73	114.81	106.42	99.22	92.9	88.00	83.16

U.C. COOPERATIVE EXTENSION
RANGING ANALYSIS Table 9 continued

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR ALFALFA HAY

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE)						
	5.5	6.0	6.5	7.0	7.5	8.0	8.5
75.00	85	120	154	189	224	259	293
80.00	112	150	187	224	261	299	336
85.00	140	180	219	259	299	339	378
90.00	167	210	252	294	336	379	421
95.00	195	240	284	329	374	419	463
100.00	222	270	317	364	411	459	506
105.00	250	300	349	399	449	499	548

NET RETURNS PER ACRE ABOVE CASH COSTS FOR ALFALFA HAY

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE)						
	5.5	6.0	6.5	7.0	7.5	8.0	8.5
75.00	-56	-21	14	49	83	118	153
80.00	-28	9	46	84	121	158	195
85.00	-1	39	79	119	158	198	238
90.00	27	69	111	154	196	238	280
95.00	54	99	144	189	233	278	323
100.00	82	129	176	224	271	318	365
105.00	109	159	209	259	308	358	408

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR ALFALFA HAY

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE)						
	5.5	6.0	6.5	7.0	7.5	8.0	8.5
75.00	-274	-239	-204	-170	-135	-100	-66
80.00	-246	-209	-172	-135	-97	-60	-23
85.00	-219	-179	-139	-100	-60	-20	19
90.00	-191	-149	-107	-65	-22	20	62
95.00	-164	-119	-74	-30	15	60	104
100.00	-136	-89	-42	5	53	100	147
105.00	-109	-59	-9	40	90	140	189

Table 10.

U.C. COOPERATIVE EXTENSION
 COSTS AND RETURNS / BREAKEVEN ANALYSIS
 SACRAMENTO VALLEY - 1992

COSTS AND RETURNS - PER ACRE BASIS

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Alfalfa	630	336	294	476	154	695	-65

COSTS AND RETURNS - TOTAL ACREAGE

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Alfalfa	126000	67185	58815	95264	30736	138907	-12907
TOTAL	126000	67185	58815	95264	30736	138907	-12907

BREAKEVEN PRICES PER YIELD UNIT

CROP	Base Yield (Units/Acre)	Yield Units	----- Breakeven Price To Cover -----		
			Operating Costs	Cash Costs	Total Costs
Alfalfa	7.0	ton	47.99	68.05	99.22

----- \$ per Yield Unit -----

BREAKEVEN YIELDS PER ACRE

CROP	Yield Units	Base Price (\$/Unit)	----- Breakeven Yield To Cover -----		
			Operating Costs	Cash Costs	Total Costs
Alfalfa	ton	90.00	3.7	5.3	7.7

----- Yield Units / Acre -----