

ALFALFA HAY PRODUCTION

LASSEN COUNTY

Honey Lake and Long Valley Area

1969

FLOOD AND SPRINKLER IRRIGATED

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ALFALFA

This alfalfa cost study is the result of meetings held with some Lassen County growers. The yields shown are attainable with adequate water supply, proper irrigation scheduling, and fertilization, careful land preparation, and diligent management. Cash costs only are charged to the stand establishment of alfalfa.

The usual practice would be to plant grain on the land for a season. After the grain is harvested, the land would be worked, shaped, and planted. Under this plan, it is a common practice for the grain crop to absorb the overhead costs for that year. These costs include:

- . . Depreciation on equipment and irrigation system.
- . . Interest on equipment, irrigation system, and land @ 7 percent.
- . . Taxes.
- . . Insurance

Seventy five dollars has been added to the land value under FLOOD irrigation. Unless the land is properly leveled and extra time involved, the yield shown cannot be obtained.

Grazing aftermath is not considered in this study, although some years the aftermath would have a value. This would depend, however, on weather and moisture conditions in order to prevent stand damage and soil compaction.

Stand life considered in this study for maximum production is six years.

Increased pumping depth and horsepower is assigned to the sprinkler irrigation study to assure adequate pressure at the nozzle at 60 PSI.

The size farm considered is 300 acres under irrigation from a well - 100 acres in alfalfa and 200 acres in grain. Equipment costs are spread over the entire 300 acres, except where equipment is used in the production of only one particular crop.

A 60-horsepower tractor was considered to be optimum size for most of the work needed. However, in the growers' opinion, an additional tractor (35 h.p.) would be most desirable for efficient operation of the enterprise.

Alfalfa variety used in this study was Vernal, proven to be a high yielding variety through variety trials conducted in Lassen County.

Fertilization program includes a plow-down application of 400 pounds per acre of Single Super Phosphate at planting, then annual applications of 250 pounds per acre of gypsum.

Labor costs, @ \$2.00 per hour, include Workmen's Compensation, Social Security, and other fringe costs.

ALFALFA HAY COST OF ESTABLISHMENT

Lassen County, August, 1969

Flood Irrigated - Fall Planted

Operation	Hours Per Acre	Cash and Labor Cost per Acre				Total
		Labor	Fuel and Repairs	Materials		
				Kind and Quantity	Cost	
<u>Cultural Costs:</u>						
Plow	.5	1.00	1.18			2.18
Disk 2x	.6	1.20	1.44			2.64
Landplane 3x (contract)					5.00	5.00
Run borders	.5	1.00	1.08			2.08
Plane checks	.3	.60	.65			1.25
Pre-irrig. (flood)	.6	1.20		Power to pump $\frac{1}{2}$ a/ft. @ 2.20 =	1.10	2.30
Ditch	.1	.20	.17			.37
Fertilize	.3	.60	.54	4 sks. 20% gypsum	10.00	11.14
Disk	.3	.60	.72			1.32
Drill, seed, cultipack	.5	1.00	1.38	18 sks. @ .70 =	12.60	14.98
Irrig. 3x-sprinkle	1.0	2.00		Pipe rental-6.60 $\frac{1}{2}$ a/ft. @ 44.40 =	8.80	10.80
TOTAL CULTURAL COSTS		9.40	7.16		37.50	54.06
Misc. - office, pickup truck, int. on operating capital 5% of shown						2.70

TOTAL

\$56.76

MACHINE AND EQUIPMENT INVESTMENT
FOR FLOOD IRRIGATED ALFALFA

Lassen County, August, 1969
Based on 100 Acres of Alfalfa on a 300-Acre Farm

Item	Cost	Annual Use (Acres)	Cost per Acre	Life (Yrs.)	Depreciation	7% Interest	Cash Costs per Hour		
							Fuel	Repairs	Total
Tractor-35 H.P.W.	4,200	300	14.00	10	1.40	.49	.50	.50	1.00
Tractor-60 W.D.	8,000	300	26.67	10	2.66	.93	.60	.80	1.40
Gopher bait mach.	175	300	.58	10	.06	.02	--	.25	.25
Sprayer	350	300	1.17	10	.12	.04	--	.25	.25
Side rake	750	100	7.50	10	.75	.26	--	.55	.55
Baler	4,200	100	42.00	10	4.20	1.47	--	.92	.92
Total			<u>91.92</u>		<u>9.19</u>	<u>3.21</u>			
<u>Irrig. System</u>									
Well - 400' 14" diam.	5,600	100	56.00	30	1.86	1.96			
Pump - 80' lift 1000 gpm-30 H.P.	4,000	100	40.00	20	2.00	1.40			
Total	9,600		96.00		3.86	3.36			

SAMPLE COSTS TO PRODUCE
FLOOD IRRIGATED ALFALFA HAY
Lassen County, August, 1969

(4)

Production data:
7 tons

Operation	Hrs. Per Acre	Cash and Labor Cost per Acre				Total
		Labor	Fuel & Repairs	Materials Kind & Quantity	Cost	
<u>Cultural Costs:</u>						
Gopher control	.1	.20	.13	Bait	.80	1.13
Irrigate 6x	3.0	6.00		Power to pump 2.20 x 4 a/ft.	8.80	14.80
Weevil control	.2	.40	.25	Malathion-1 lb.	2.30	2.95
Fertilize	.3	.60	.36	250 lbs. gypsum		2.34
TOTAL CULTURAL COSTS		7.20	.74		13.28	21.22
<u>Harvest Costs:</u>						
Swath 3x (contract)				\$3/a ea. time	9.00	9.00
Rake 3x	.8	1.60	1.56			3.16
Bale 3x	1.0	2.00	2.32	Wire @ \$1/ton	7.00	11.32
Haul (contract)				7 tons @ \$2.50	17.50	17.50
TOTAL HARVEST COSTS		3.60	3.88		33.50	40.98
<u>Cash Overhead:</u>						
Misc., office, etc.						3.10
Taxes				Real Estate & equip.		6.00
TOTAL CASH OVERHEAD						9.10
TOTAL CASH COST						71.30
Management - 5% of 7 tons @ 25.00						8.75
<u>Investment</u>						
		<u>Per Acre</u>	<u>Annual Cost</u>			
			<u>Depreciation</u>	<u>Interest</u>		
Land		300.00	--	21.00		
Land grading		75.00	--	5.25		
Well and pump		96.00	3.86	3.36		
Stand		56.76	9.46	1.99		
Equipment		91.92	9.19	3.21		
Total		619.68	22.51	34.81		57.32
TOTAL COST PER ACRE						137.37
Cost per ton @ 7 ton yield						19.62

ALFALFA HAY COST OF ESTABLISHMENT

Lassen County, August, 1969

Sprinkler Irrigated-Fall Planted

Operation	Hours Per Acre	Cash and Labor Cost per Acre				Total
		Labor	Fuel and Repairs	Materials		
				Kind and Quantity	Cost	
<u>Cultural Costs:</u>						
Plow	.5	1.00	1.18			2.18
Disk 2x	.6	1.20	1.44			2.64
Landplane 3x (contract)					5.00	5.00
Pre-irrigate, sprinkle	.5	1.00		Power to pump $\frac{1}{2}$ a/ft. @ 5.55	2.78	3.78
Fertilizer	.3	.60	.54	4 sks 20% gypsum	10.00	11.14
Drill, seed, & cultipack	.5	1.00	1.38	18 lbs. @ .70	12.60	14.98
Irrig. 3x sprinkler	1.0	2.00		Power to pump $\frac{1}{2}$ a/ft. @ 5.55	2.78	4.78
TOTAL CULTURAL COSTS		6.80	4.54		33.16	44.50
Misc. - Office, pickup truck, interest on operating capital - 5% of above						2.23

TOTAL

46.73

MACHINERY AND EQUIPMENT INVESTMENT
FOR SPRINKLER IRRIGATED ALFALFA

Lassen County, August, 1969

Based on 100 Acres of Alfalfa on a 300-Acre Farm

Item	Cost	Annual Use (Acres)	Cost Per Acre	Life (Yrs.)	Depreciation	Interest	Cash costs per Hour		
							Fuel	Repairs	Total
Tractor 35 HPW	4200	300	14.00	10	1.40	.49	.50	.50	1.00
Tractor 60 W.D.	8000	300	26.67	10	2.66	.93	.60	.80	1.40
Gopher bait mach.	175	300	.58	10	.06	.02	--	.25	.25
Sprayer	350	300	1.17	10	.12	.04	--	.25	.25
Side rake	750	100	7.50	10	.75	.26	--	.55	.55
Baler	4200	100	<u>42.00</u>	10	<u>4.20</u>	<u>1.47</u>	--	.92	.92
Total			91.92		9.19	3.21			
Irrig. system									
Well-400' 14" diam.	5600	100	56.00	30	1.87	1.96			
Pump - 230 ft. lift 750 gpm. 75 HP	7000	100	70.00	20	3.50	2.45			
Sprinkler Pipe			126.00		5.37	4.41			
Main line-8" 2640 ft. @ 2.00	5280	100	165.00	15	11.00	5.78			
Joints-66 @ 6.00	396								
Valves-3 @ 13.00	39								
3 wheel lines @ 3,600	10800								
	\$16,515								

SAMPLE COSTS TO PRODUCE
SPRINKLER IRRIGATED ALFALFA HAY

Lassen County

Production data:
7 ton

Operation	Hrs. Per Acre	Cash and labor cost per acre				Total
		Labor	Fuel & Repairs	Materials Kind & Quantity	Cost	
<u>Cultural Costs</u>						
Gopher control	.1	.20	.13	Bait	.80	1.13
Irrigate 8x	2.5	5.00		Power to pump 3.3 a/ft @ 5.55	18.32	23.32
Weevil control	.2	.40	.25	Malathion-1 lb.	2.30	2.95
Fertilize	.3	.60	.36	250 lb.gypsum	1.38	2.34
TOTAL CULTURAL COSTS		6.20	.74		22.80	29.74
<u>Harvest Costs</u>						
Swath 3x contract				\$3 per a. ea tm.	9.00	9.00
Rake 3x	.8	1.60	1.56			3.16
Bale 3x	1.0	2.00	2.32	Wire @ \$1/ton	7.00	11.32
Haul - contract				7 tons @ 2.50	17.50	17.50
TOTAL HARVEST COSTS		3.60	3.88		33.50	40.98
<u>Cash overhead</u>						
Misc., office, etc.						3.54
Taxes - real estate and equip.						6.25
Rent						
TOTAL CASH OVERHEAD						9.79
TOTAL CASH COST						80.51
Management - 5% of 7 tons @ 25.00						8.75
<u>INVESTMENT</u>						
	<u>Per Acre</u>		<u>Annual Cost</u>			
			<u>Depreciation</u>	<u>Interest-7%</u>		
Land	300.00		-	21.00		
Stand	46.73-6 yr.		7.79	1.64		
Well and pump	126.00		5.37	4.41		
Sprinklers	165.00		11.00	5.78		
Equipment	91.92		9.19	3.21		
Total	729.65		33.35	36.04		69.39
TOTAL COST PER ACRE						158.65
Cost per ton @ 7 ton yield						22.66