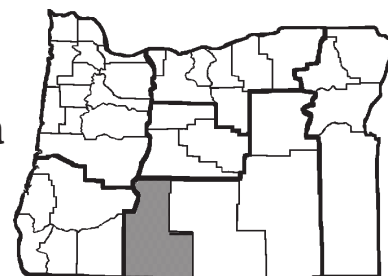


Enterprise Budget

Alfalfa Production, Klamath Basin Area

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EM 8430, Revised July 1998

This enterprise budget estimates the typical costs and returns of producing alfalfa in the Klamath Basin area of south central Oregon. It should be used as a guide to estimating costs and returns and is not representative of any particular farm. The major assumptions used in constructing this budget are discussed below. Assistance provided by area producers is greatly appreciated.

The alfalfa production budget includes the amortized cost of establishment shown in *Alfalfa Establishment, Klamath Basin Area, EM 8431*. A 7-year production life is assumed for established alfalfa. The establishment cost is based on \$305.15 net establishment cost amortized at 10 percent over 7 years, for an annual charge of \$62.68 per acre.

Land and Irrigation

This budget is based on 320 acres of alfalfa, 40 acres of which is in establishment. A land charge of \$100 per acre is included to represent the annual cost of renting land.

Irrigation system costs are based on a side-roll irrigation system valued at \$400 per acre including pump, wheel line, and main line costs. The irrigation system has a 20-year life and no salvage value. Using straight-line depreciation results in a \$15 per acre annual irrigation depreciation charge. Interest on the average investment is calculated to be 10 percent of \$200 per acre, or another \$20 per acre. Irrigation repairs are \$5 per acre including replacement of nozzles and seals as needed. A hay shed valued at \$60,000 provides storage for almost 1,300 tons of hay.

Labor

Hired labor typically costs approximately \$8 per hour including social security, FICA, and other payroll expenses. For this study, all labor is treated as owner/operator labor valued at \$8 per hour and therefore assumed to be a noncash cost.

Capital

Opportunity costs of capital are charged at a rate of 10 percent for current, intermediate, and long-term capital provided by the owner/operator.

Machinery and Equipment

The machinery complement is sufficient to establish and harvest the 320 acres of alfalfa on the farm in a timely manner. A detailed breakdown of machinery values used in these budgets is shown in Table 1. February 1998 replacement costs are used, assuming the machinery is half depreciated. Estimated machinery costs are shown in Table 2.

The hours of annual use for machinery are calculated based on the machinery's field capacity in acres per hour. The annual use values in Table 1 represent the hours the machinery is used to maintain and harvest 320 acres. Costs per acre are calculated based on these hours of use.

Operations

Fertilizer is applied in the form of 200 pounds of sulfur every third year. The sulfur is applied by a custom application. Fertilizer levels are in accordance with recommendations given in *Fertilizer Guide: Alfalfa (Eastern Oregon - East of Cascades) FG 20*.

Twenty acre-inches of water are applied throughout the growing season. Harvest consists of three cuttings with a typical yield of 5.5 tons per acre. A self-propelled swather is used to cut the hay, which is then raked. Following baling, a bale wagon is used to collect the bales in the field and stack them in the pole shed. As the hay is shipped, a squeeze is custom hired to load the trucks.

A pickup is driven 15,000 miles annually, and half of these miles are charged to the alfalfa crop. An ATV also is used to monitor the crop and irrigation system. General overhead is included to account for bookkeeping expenses, subscriptions, seminars, and other miscellaneous items related to alfalfa production.

Returns and Break-evens

The assumed yield in this budget is 5.5 tons per acre during the production years. At a price of \$110 per ton, gross revenues are \$605 per acre. Subtracting variable costs of \$292.68 gives a return of \$312.32 over variable costs. The break-even price needed to cover variable cost is \$53.21 per ton (assuming price is fixed in the establishment year). Thus as long as the price received exceeds this break-even level, it is economically worthwhile to continue producing in the short run. When the fixed costs of \$307.70 also are deducted, however, the net return is \$4.62 per acre. The break-even price to cover total costs is \$109.16 per ton. This price is sufficient to cover replacement of depreciable equipment as well as cover the opportunity cost of all capital invested in this enterprise.



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ECONOMIC COSTS and RETURNS
South Central Region: Klamath Basin Area
 Irrigated Alfalfa Production Costs (\$/acre)

<u>GROSS INCOME Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$ / Unit</u>	<u>Total</u>	<u>Your Returns</u>
Alfalfa Hay	5.50	ton	110.00	605.00	_____
Total GROSS Income				605.00	_____
<u>VARIABLE COST Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>	<u>Your Cost</u>
Fertilize	0.00	0.00	14.33	14.33	_____
Sulfur	0.033 tn x 150.00 = 4.99				
11-52-0	39.99 lb x 0.187 = 7.49				
Custom Applic.	0.333 ac x 5.50 = 1.83				
PEST CONTROL					
Rodent Control	1.61	2.20	1.00	4.82	_____
Rodent Materials	1.0 ac x 1.00 = 1.00				
Insecticide	0.00	0.00	15.50	15.50	_____
Insecticide	1.0 ac x 10.00 = 10.00				
Appl Insect	1.0 ac x 5.50 = 5.50				
Weed Control	0.00	0.00	14.63	14.63	_____
Herbicide	0.75 ac x 14.00 = 10.50				
Appl Herb	0.75 ac x 5.50 = 4.12				
Harrow	1.21	1.08	0.00	2.29	_____
Total PEST CONTROL				37.23	_____
Irrigate	20.00	0.00	37.00	57.00	_____
Water	1.0 ac x 27.00 = 27.00				
Electricity	1.0 ac x 5.00 = 5.00				
Repairs	1.0 ac x 5.00 = 5.00				
HARVEST					
Swath (3x)	4.40	18.87	0.00	23.27	_____
Rake (3x)	2.42	2.55	0.00	4.97	_____
Bale (3x)	7.26	20.62	15.00	42.88	_____
Baling Wire	3.0 ac x 5.00 = 15.00				
Stack-Field to Shed (3x)	4.40	50.68	0.00	55.08	_____
Load Hay	0.00	0.00	16.50	16.50	_____
Load Hay	5.5 tn x 3.00 = 16.50				
Total HARVEST				142.69	_____
OTHER					
Pickup-4WD	6.25	3.09	0.00	9.34	_____
ATV	8.33	1.69	0.00	10.03	_____
General Overhead	0.00	0.00	15.00	15.00	_____
Operating Capital Interest	0.00	0.00	7.05	7.05	_____
Total OTHER				41.42	_____
Total VARIABLE COST				292.68	_____
GROSS INCOME minus VARIABLE COST				312.32	_____

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ECONOMIC COSTS and RETURNS
South Central Region: Klamath Basin Area
 Irrigated Alfalfa Production Costs (\$/acre)

<u>FIXED COST Description</u>	<u>Unit</u>	<u>Total</u>	<u>Your Cost</u>
CASH Cost			
Machinery & Equipment Insurance	acre	10.57	_____
Land Lease	acre	100.00	_____
Total CASH Cost		110.57	_____
NONCASH Cost			
Amortized Establishment Cost	acre	62.68	_____
Irrigation Depreciation & Interest	acre	35.00	_____
Machinery & Equipment Depreciation & Interest	acre	99.45	_____
Total NONCASH Cost		197.13	_____
Total FIXED Cost		307.70	_____
Total of ALL Cost		600.38	_____
NET PROJECTED RETURNS		4.62	_____
Break-even Price, Total Variable Cost		\$53.21 per tn	_____
Break-even Price, Total Cost		\$109.16 per tn	_____

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Table 1. Machinery Cost Assumptions

No. Machine	Size	List Price	Current Market Value	Salvage Value	Useful Life	Remaining Life	Annual Use	Total Use	
1	Tractor	120 hp	\$75,000	\$45,000	\$15,000	12,000 hr	7,200 hr	400 hr	282 hr
2	Tractor	50 hp	22,000	13,200	4,400	6,000 hr	3,600 hr	125 hr	116 hr
3	Bale Wagon		90,000	54,000	18,000	2,000 hr	1,200 hr	160 hr	140 hr
4	Swather	14 ft	60,000	36,000	12,000	4,000 hr	2,400 hr	160 hr	140 hr
5	Baler	3-tie	40,000	24,000	8,000	2,000 hr	1,200 hr	230 hr	210 hr
6	Gopher Getter	12 ft	1,000	600	200	2,000 hr	1,200 hr	50 hr	47 hr
7	Harrow	12 ft	2,000	1,200	400	2,000 hr	1,200 hr	35 hr	35 hr
8	Rake		10,000	6,000	2,000	3,000 hr	1,800 hr	110 hr	104 hr
9	ATV		5,000	3,000	1,000	25,000 mi	15,000 mi	5,000 mi	4,375 mi
10	Pickup	3/4 ton	20,000	12,000	4,000	100,000 mi	60,000 mi	15,000 mi	6,562 mi
11	Hay Shed	12,000 sq ft	60,000			30 yr	15 yr		

Table 2. Cost of Machinery Operations (\$/Acre) Acres: 280

Operation	Machines	Fuel & Lube	Operator Labor Cost	Repair & Maint.	Variable Cost	Deprec. & Interest	Taxes, Lic. & Insurance	Fixed Cost	Total Mach. Cost
Rodent Control	(1,6)	\$1.05	\$1.61	\$1.16	\$3.82	\$2.31	0.22	\$2.53	\$6.35
Harrow	(2,7)	0.75	1.21	0.33	2.29	1.97	0.18	2.15	4.44
Swath (3x)	(4)	3.75	4.40	15.12	23.27	11.95	1.13	13.08	36.35
Rake (3x)	(2,8)	1.49	2.42	1.06	4.97	4.78	0.48	5.26	10.22
Bale (3x)	(5)	4.72	7.26	15.89	27.88	19.53	1.71	21.24	49.11
Stack (3x)	(3)	2.50	4.40	48.18	55.08	16.88	1.69	18.56	73.64
Pickup Truck	(10)	1.97	6.26	1.13	9.35	8.16	0.33	8.48	17.84
ATV	(9)	0.78	8.33	0.91	10.02	3.31	0.47	3.78	13.80
Hay Shed	(11)	0.00	0.00	0.00	0.00	30.63	4.38	35.00	35.00
TOTAL		\$17.00	\$35.89	\$83.78	\$136.67	\$99.51	10.57	\$110.08	\$246.75



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