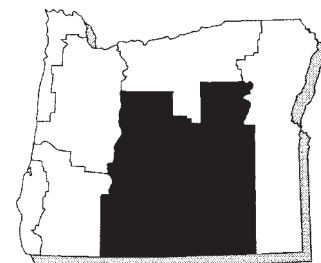


Enterprise Budget

Alfalfa Production (3 cutting), South Central Region

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This enterprise budget estimates the typical costs of producing alfalfa in Jefferson, Crook, and Deschutes counties of South Central Oregon. While efforts were made to reflect common practices, it is not representative of any particular farm and should thus be used only as a guide to estimating actual costs. The major assumptions used in constructing this budget are discussed below. Assistance was provided by producers in Crook and Jefferson counties and is greatly appreciated.

For costs and returns associated with alfalfa establishment, see *EM 8603 Enterprise Budget: Alfalfa Establishment, South Central Region*.

Cropping Pattern

This budget is based on a 350-acre farm with 75 acres in production of alfalfa following alfalfa or a grain crop. It is assumed that 25 acres of alfalfa are established every other year; thus 50 acres are in full production each year. The alfalfa crop has a 4-year life in addition to an establishment year and yields three cuttings each production year.

Land and Irrigation

A land lease charge of \$90 per acre is included to represent the cost of leasing or owning land. This charge is based on a lease of irrigated land and includes a wheel-line system and canal maintenance. The cost of irrigation water is \$24.65 per acre and is based on the North Unit Irrigation District water and construction charges for 1994. Electricity, repair, and maintenance for the sprinkler system are estimated to be \$29.55 per acre.

Labor

Labor is hired at a rate of \$8 per hour, which includes worker's compensation, unemployment insurance, and other payroll expenses. Owner/operator labor is assumed to be a cash expense of \$15 per hour. Labor hours for machinery operation are calculated by multiplying 1.21 times machine hours to allow for setup, movement, and adjustment.

Capital

Opportunity costs of capital are charged at a rate of 8 percent for current, intermediate, and long-term capital provided by the owner/operator.

Machinery and Equipment

The machinery complement is sufficient to farm 350 acres. A detailed breakdown of machinery values used in this budget is shown in Table 1. January 1994 replacement costs are used, assuming the machinery is half depreciated. The hay storage shed can store 1 year of alfalfa hay production.

Operations

Cultural operations include a fertilizer application, harrowing, and rodent control. (It is assumed in this budget that weed control, phosphorus, and potassium fertilizer are applied annually. These inputs, as well as others, may or may not be needed.) The alfalfa is irrigated 11 times, and a total of 36 inches of water is applied. An insecticide is custom applied by air for weevil control. This operation is included in the budget at half the full rate assuming the insecticide in necessary one out of every two production years.

The alfalfa hay is custom harvested (swathed, baled, and stacked) for \$30 per ton and stored in an on-farm storage shed. Three cuttings yields a total of 5.5 tons per acre. At the time of sale, the hay is loaded with tractor and front-end loader by the owner/operator.

A combination of two herbicides is custom applied for weed control in the late fall through late winter.

Other

A pickup is included for hauling supplies and general farm work. An ATV is used to monitor the irrigation system and as on-farm transportation. A general overhead charge of \$10 per acre is included to cover general insurance, tools, shop, utilities, accounting fees, office supplies, and other miscellaneous expenses.

A charge of \$84.40/acre is included in the budget to cover the amortized establishment cost of \$280. Detailed cost figures for the establishment year can be found in *EM 8603 Enterprise Budget: Alfalfa Establishment, South Central Region*.

Results

The total variable cost is \$440. The total of all costs is \$646, resulting in a net projected return of -\$124. The break-even price over variable cost is \$80 and over total cost is \$118 per ton.

Tables 3 and 4 show net returns for varying yields and prices based on a 5-year life (including the establishment year). Some growers may extend the life of the stand. Table 5 shows how net returns over total cost will change for varying yields and stand life.



OREGON STATE UNIVERSITY EXTENSION SERVICE



EM 8604 Enterprise Budget

ECONOMIC COSTS and RETURNS SOUTH CENTRAL REGION Alfalfa Production (3 cutting), 50 acres (\$/acre)

<u>GROSS INCOME Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>	<u>Your Income</u>
Alfalfa	5.50	ton	95.00	522.50	_____
Total GROSS Income				522.50	_____
<u>VARIABLE COST Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>	<u>Your Cost</u>
Soil Test	0.00	0.00	0.30	0.30	_____
Soil Test			0.02 ac x 15.00 = 0.30		
Weed Control	0.00	0.00	38.97	38.97	_____
Herbicide			3 pt x 8.875 = 26.62		
Herbicide			1.5 pt x 4.56 = 6.84		
Custom Application			1 ac x 5.50 = 5.50		
Fertilizer	0.00	0.00	38.55	38.55	_____
Gypsum			400 lb x 0.055 = 22.00		
Murated Potash			50 lb x 0.081 = 4.05		
Triple Phosphate			50 lb x 0.12 = 6.00		
Custom Application			1 ac x 6.50 = 6.50		
Harrow	3.63	1.55	0.00	5.18	_____
Rodent Control	12.00	0.00	5.00	17.00	_____
Gas Pills			1 ac x 5.00 = 5.00		
Irrigate	44.00	0.00	54.20	98.20	_____
Repair & Maint.			1 ac x 4.55 = 4.55		
Electricity			1 ac x 25.00 = 25.00		
Water/Constr. Charge			1 ac x 24.65 = 24.65		
Weevil Control	0.00	0.00	8.86	8.86	_____
Insecticide			0.5 pt x 10.375 = 5.18		
Sticker			0.015 gal x 27.00 = 0.42		
Custom Air Application			0.5 ac x 6.50 = 3.25		
Harvest	0.00	0.00	165.00	165.00	_____
Custom Harvest			5.5 tn x 30.00 = 165.00		
Load Hay	9.08	9.03	0.00	18.11	_____
MISCELLANEOUS					
Storage Shed Repair & Maint.	0.37	0.00	0.50	0.87	_____
Operating Capital Interest	0.00	0.00	11.78	11.78	_____
General Overhead	0.00	0.00	10.00	10.00	_____
Pickup	15.00	4.34	0.00	19.34	_____
ATV	7.50	0.20	0.00	7.70	_____
Total MISCELLANEOUS				49.69	_____
Total VARIABLE COST				439.86	_____
GROSS INCOME minus VARIABLE COST				82.64	_____
<u>FIXED COST Description</u>			<u>Unit</u>	<u>Total</u>	<u>Your Cost</u>
CASH Cost					
Machinery & Equipment Insurance			acre	4.25	_____
Land Lease			acre	90.00	_____
Total CASH Cost				94.25	_____
NONCASH Cost					
Amortized Establishment Cost			acre	84.40	_____
Machinery & Equipment Interest & Depreciation			acre	27.89	_____
Total NONCASH Cost				112.29	_____
Total FIXED Cost				206.54	_____
Total of ALL Cost				646.40	_____
NET PROJECTED RETURNS				-123.90	_____
Break-even Price, Total Variable Cost			\$ 79.97 per ton		
Break-even Price, Total Cost			\$117.52 per ton		

EM 8604 Enterprise Budget

Table 1. Machinery Cost Assumptions

Item	Size	List Price	Current Market Value	Salvage Value	Useful Life	Remaining Life	Annual Use
Tractor	100 hp	\$50,000	\$32,500	\$15,000	10,000 hr	5,000 hr	28 hr
Tractor	50 hp	21,500	13,975	6,450	10,000 hr	5,000 hr	11 hr
Front-end Loader		7,500	4,500	1,500	2,000 hr	1,000 hr	25 hr
Pasture Harrow	12 ft	800	480	160	2,000 hr	1,000 hr	10 hr
ATV		3,500	2,100	700	1,500 mi	750 mi	38 mi
Pickup	1/2 ton	15,000	9,000	3,000	100,000 mi	50,000 mi	1,750 mi
Hay Shed			12,000			15 yr	

Table 2. Machinery & Equipment Cost Calculations

Machine	Size	Costs per Hour or Mile					Total Cost	Hours or Miles per Acre	Costs per Acre		
		Variable		Fixed		Total			Variable	Fixed	Total
		Fuel & Repair & Lube	Repair & Maint.	Depr. & Interest	Insurance						
Tractor	100 hp	\$6.76	\$6.30	\$8.43	\$0.65	\$22.14	0.55	\$7.18	\$4.99	\$12.17	
Tractor	50 hp	2.70	2.66	6.04	0.47	11.87	0.22	1.18	1.43	2.61	
Front-end Loader		0.00	2.56	10.22	0.64	13.42	0.50	1.28	5.43	6.71	
Pasture Harrow	12 ft	0.00	0.43	1.05	0.07	1.55	0.20	0.09	0.22	0.31	
ATV		0.06	0.20	1.48	0.08	1.83	0.75	0.20	1.17	1.37	
Pickup	1/2 ton	0.08	0.04	0.20	0.06	0.38	35.00	4.34	8.86	13.20	
Hay Shed								0.87	9.99	10.86	
Total								\$15.13	\$32.10	\$47.23	

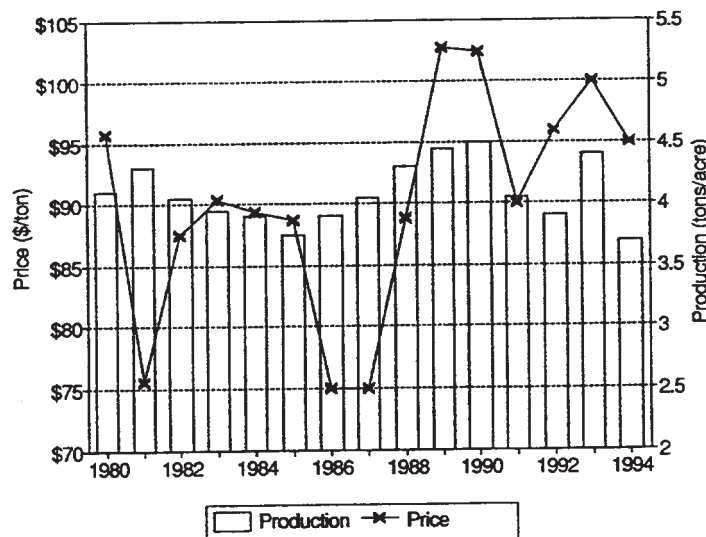


Figure 1. Alfalfa Production and Price in Crook & Deschutes Counties, Oregon, 1980-1994

EM 8604 Enterprise Budget

Table 3. Net Projected Returns over Variable Cost with Varying Yield and Price (\$/acre based on 1 establishment year and 4 production years)*

Yield (ton/acre)	\$50	\$60	\$70	\$80	\$90	\$100	\$110	\$120
4.0	-\$217	-\$173	-\$129	-\$85	-\$41	\$3	\$47	\$91
4.5	-208	-158	-109	-59	-10	40	89	139
5.0	-199	-144	-89	-34	21	76	131	186
5.5	-190	-129	-69	-8	52	113	173	234
6.0	-180	-114	-48	18	84	150	216	282
6.5	-171	-100	-28	43	115	186	258	329
7.0	-162	-85	-8	69	146	223	300	377
7.5	-153	-71	12	94	177	259	342	424
8.0	-144	-56	32	120	208	296	384	472

*Establishment year price and yield are fixed, based on Alfalfa Establishment, EM 8603.

Table 4. Net Projected Returns over Total Cost with Varying Yield and Price (\$/acre based on 1 establishment year and 4 production years)*

Yield (ton/acre)	\$50	\$60	\$70	\$80	\$90	\$100	\$110	\$120
4.0	-\$415	-\$371	-\$327	-\$283	-\$239	-\$195	-\$151	-\$107
4.5	-407	-357	-308	-258	-209	-159	-116	-60
5.0	-398	-343	-288	-233	-178	-123	-65	-25
5.5	-390	-330	-269	-209	-148	-96	-31	17
6.0	-382	-316	-250	-184	-118	-64	-4	56
6.5	-374	-302	-231	-159	-96	-31	35	96
7.0	-366	-289	-212	-135	-69	2	75	142
7.5	-357	-275	-192	-110	-41	34	112	184
8.0	-349	-261	-173	-94	-15	65	145	225

*Establishment year price and yield are fixed based on Alfalfa Establishment, EM 8603.

Table 5. Net Projected Returns per Acre over Total Cost at \$95/ton and Varying Life of Stand and Yield*

Yield (ton/acre)	Life of Stand (Years in Addition to Establishment year)						
	4	5	6	7	8	9	10
4.0	-\$217	-\$202	-\$193	-\$186	-\$181	-\$177	-\$174
4.5	-184	-169	-160	-153	-148	-144	-141
5.0	-152	-138	-128	-121	-116	-112	-109
5.5	-124	-110	-100	-93	-88	-84	-81
6.0	-91	-77	-67	-60	-55	-51	-48
6.5	-64	-49	-40	-33	-28	-24	-21
7.0	-34	-19	-10	-3	2	6	9
7.5	-4	11	20	27	32	36	39
8.0	25	39	49	56	61	65	68

*Assumes constant yields for life of stand.

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