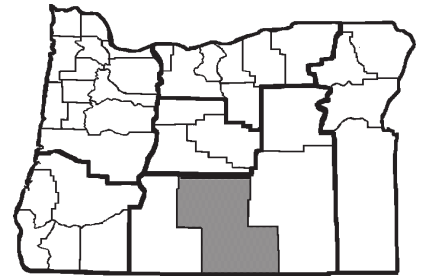


Enterprise Budget

Alfalfa Establishment, Christmas Valley Area

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EM 8352, Revised July 1998

This enterprise budget estimates the typical costs and returns of establishing alfalfa in the Christmas Valley 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.

Alfalfa establishment takes 2 years in the Christmas Valley. The first year is referred to as the rotation year, and the second year is referred to as the establishment year. Following the establishment year are 8 years of production. The costs and returns of alfalfa production may be found in *Alfalfa Production/Christmas Valley Area, EM 8353*.

Land

This budget is based on five 160-acre fields of which 125 acres of each field is center pivot irrigated. Thus, one-half circle or 62.5 acres is started in establishment each year. The land is valued at \$800 per irrigated acre, and property taxes are \$18.50 per irrigated acre. An established alfalfa stand at the end of its productive life is assumed as the starting land condition for the rotation year. A hay shed valued at \$100,000 provides storage for almost 2,200 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 five fields 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.

Each center pivot irrigation system includes a 50-hp pump and low-pressure nozzles with a remaining life of 15 years. Depreciation and interest is charged for irrigation equipment at a rate of \$70 per acre.

The hours of annual use for machinery are calculated based on the machinery's field capacity in acres per hour. The total annual use values in Table 1 represent the hours the machinery is used to establish, maintain, and harvest the five fields. The costs of machinery operations for the rotation year are shown in Table 2, while those for the establishment year are given in Table 3.

Rotation Year Operations

The rotation year budget is shown on page 2. The rotation year consists of operations to plow under the established alfalfa stand, prepare the field for seeding, and plant oats. The oat crop typically is planted in May and harvested in September as oat hay. Fifteen acre inches of water is applied over a period of 75 days. The irrigation labor requirement is 2 hours per day per center pivot, or 1.2 hours per acre annually. Four tons of oat hay is sold for \$80 per ton. The net loss of \$125.56 is carried forward to the establishment year with an interest charge of 10 percent.

Establishment Year Operations

The establishment year budget is shown on page 4. The establishment year consists of operations to till, fertilize, and plant the alfalfa along with an oat nurse crop. Planting is done in June, followed by application of 20 acre inches of water for 90 days. Irrigation labor again requires 2 hours per day per center pivot, or 1.44 hours per acre annually. The oat and alfalfa hay yields 4 tons per acre, and is sold for \$90 per ton. The net loss of \$264.14 per acre is amortized over 8 years at an interest rate of 10 percent and included as a noncash cost of \$49.51 per acre in the alfalfa production budget.



OREGON STATE UNIVERSITY EXTENSION SERVICE

EM 8352 Enterprise Budget

ECONOMIC COSTS and RETURNS
South Central Region: Christmas Valley
 Irrigated Alfalfa Rotation Costs (\$/acre)

<u>GROSS INCOME Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>	<u>Your Cost</u>
Oat Hay	4.0	ton	80.00	320.00	_____
Total GROSS Income				320.00	_____
<u>VARIABLE COST Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>	<u>Your Cost</u>
PREHARVEST					
Rototill	6.45	13.37	0.00	19.82	_____
Plow	2.42	3.63	0.00	6.05	_____
Disk (2x)	3.88	5.54	0.00	9.42	_____
Land Level	1.61	2.23	0.00	3.85	_____
Plant	1.94	2.25	20.00	24.19	_____
Oat Seed	100.00 lb x 0.20 = 20.00				
Irrigate	9.60	0.00	30.00	39.60	_____
Irrigate - Elec.	1.00 ac x 20.00 = 20.00				
Repairs & Maint.	1.00 ac x 10.00 = 10.00				
Total PREHARVEST				102.92	_____
HARVEST					
Cut Hay	1.47	6.39	0.00	7.86	_____
Bale Hay	2.77	8.06	0.00	10.82	_____
Stack Hay	1.47	17.03	0.00	18.50	_____
Load Hay	0.00	0.00	12.00	12.00	_____
Load Hay	4.00 tn x 3.00 = 12.00				
Total HARVEST				49.18	_____
OTHER					
Pickup-4WD	4.27	2.11	0.00	6.38	_____
ATV	4.27	0.87	0.00	5.13	_____
Operating Capital Interest	0.00	0.00	6.21	6.21	_____
Total OTHER				17.72	_____
Total VARIABLE COST				169.82	_____
GROSS INCOME minus VARIABLE COST				150.18	_____

EM 8352 Enterprise Budget

ECONOMIC COSTS and RETURNS
South Central Region: Christmas Valley
Irrigated Alfalfa Rotation Costs (\$/acre)

<u>FIXED COST Description</u>	<u>Unit</u>	<u>Total</u>	<u>Your Cost</u>
CASH Cost			
Machinery & Equipment Insurance	acre	10.17	_____
Land	acre	18.50	_____
Total CASH Cost		<u>28.67</u>	_____
NONCASH Cost			
Irrigation System	acre	70.00	_____
Machinery & Equipment Depreciation & Interest	acre	97.07	_____
Land	acre	80.00	_____
Total NONCASH Cost		<u>247.07</u>	_____
Total FIXED Cost		275.74	_____
Total of ALL Cost		445.56	_____
NET PROJECTED RETURNS		-125.56	_____

EM 8352 Enterprise Budget

ECONOMIC COSTS and RETURNS
South Central Region: Christmas Valley
 Irrigated Alfalfa Establishment Costs (\$/acre)

<u>GROSS INCOME Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>	<u>Your Cost</u>
Oat/Alfalfa Hay	4.0	ton	90.00	360.00	_____
Total GROSS Income				360.00	_____
<u>VARIABLE COST Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>	<u>Your Cost</u>
PREHARVEST					
Disk	1.94	2.77	0.00	4.71	_____
Land Level	1.61	2.23	0.00	3.85	_____
Disk	1.94	2.77	0.00	4.71	_____
Fertilize	0.00	0.00	48.00	48.00	_____
Di-Ammonium	0.10 tn x 275.00 = 27.50				
Sulfur	0.10 tn x 150.00 = 15.00				
Fertilizer Applic.	1.00 ac x 5.50 = 5.50				
Cultipack	1.94	1.88	0.00	3.82	_____
Rodent Control Custom	0.00	0.00	10.00	10.00	_____
Rodent Control	1.00 ac x 10.00 = 10.00				
Plant	1.94	2.25	51.00	55.19	_____
Alfalfa Seed	20.00 lb x 2.25 = 45.00				
Oat Seed	30.00 lb x 0.20 = 6.00				
Irrigate	11.52	0.00	35.00	46.52	_____
Irrigate-Elec.	1.00 ac x 25.00 = 25.00				
Repairs & Maint.	1.00 ac x 10.00 = 10.00				
Total PREHARVEST				176.79	_____
HARVEST					
Cut Hay	1.47	6.39	0.00	7.86	_____
Rake Hay	0.81	0.85	0.00	1.66	_____
Bale Hay	2.42	5.99	0.00	8.41	_____
Stack Hay	1.47	17.03	0.00	18.50	_____
Load Hay	0.00	0.00	12.00	12.00	_____
Load Hay	4.00 tn x 3.00 = 12.00				
Total HARVEST				48.42	_____
OTHER					
Pickup-4WD	4.27	2.11	0.00	6.38	_____
ATV	4.27	0.87	0.00	5.13	_____
Operating Capital Interest	0.00	0.00	0.00	6.32	_____
Total OTHER				17.83	_____
Total VARIABLE COST				243.05	_____
GROSS INCOME minus VARIABLE COST				116.95	_____

EM 8352 Enterprise Budget

ECONOMIC COSTS and RETURNS South Central Region: Christmas Valley Irrigated Alfalfa Establishment Costs (\$/acre)

<u>FIXED COST Description</u>	<u>Unit</u>	<u>Total</u>	<u>Your Cost</u>
CASH Cost			
Machinery & Equipment	acre	7.20	_____
Land	acre	18.50	_____
Total CASH Cost		25.70	_____
NONCASH Cost			
Irrigation System	acre	70.00	_____
Rotation Year Cost	acre	138.12	_____
Machinery & Equipment Depreciation & Interest	acre	67.27	_____
Land	acre	80.00	_____
Total NONCASH Cost		355.39	_____
Total FIXED Cost		381.09	_____
Total of ALL Cost		624.14	_____
NET PROJECTED RETURNS		-264.14	_____

Table 1. Machinery Cost Assumptions

No. Machine	Size	List Price	Current Market Value	Salvage Value	Useful Life	Remaining Life	Annual Use	
1	Tractor	120 hp	\$75,000	\$45,000	\$15,000	12,000 hr	7,200 hr	250 hr
2	Tractor	50 hp	22,000	13,200	4,400	6,000 hr	3,600 hr	150 hr
3	Tractor	75 hp	33,500	20,100	6,700	6,000 hr	3,600 hr	400 hr
4	Bale Wagon	9,600	90,000	54,000	18,000	2,000 hr	1,200 hr	230 hr
5	Swather	14 ft	60,000	36,000	12,000	4,000 hr	2,400 hr	230 hr
6	Baler	3-tie	40,000	1,320	8,000	2,000 hr	1,200 hr	350 hr
7	Cultipacker	12 ft	4,000	2,400	800	2,500 hr	1,500 hr	15 hr
8	Disk	10 ft	3,000	1,800	600	2,500 hr	1,500 hr	50 hr
9	Disk Harrow	14 ft	2,000	1,200	400	2,000 hr	1,200 hr	50 hr
10	Land Plane	12 ft	2,000	1,200	400	2,000 hr	1,200 hr	20 hr
11	Plow	4 bottom	3,000	1,800	600	2,500 hr	1,500 hr	15 hr
12	Rototiller	12 ft	12,000	7,200	2,400	2,000 hr	1,200 hr	50 hr
13	Seed Drill	12 ft	9,000	5,400	1,800	1,500 hr	900 hr	25 hr
14	V-Rake	14 ft	10,000	6,000	2,000	1,200 hr	720 hr	110 hr
15	ATV		5,000	3,000	1,000	25,000 mi	15,000 mi	5,000 mi
16	Pickup	3/4 ton	20,000	12,000	4,000	100,000 mi	60,000 mi	10,000 mi
17	Hay Shed	20,000 sq ft	100,000			30 yr	15 yr	

EM 8352 Enterprise Budget

Table 2. Cost of Machinery Operations, Rotation Year (\$/Acre) Acres: 62.5

Operation	Machines	Fuel & Lube	Operator Labor Cost	Repair & Maint.	Variable Cost	Deprec. & Interest	Taxes, Lic. & Insurance	Fixed Cost	Total Mach. Cost
Rototill	(1,12)	\$4.83	\$6.45	\$8.54	\$19.82	\$22.80	2.28	\$25.08	\$44.90
Plow	(1,11)	1.81	2.42	1.82	6.05	7.95	0.80	8.75	14.79
Disk (2x)	(1,8)	2.90	3.87	2.65	9.42	9.36	0.94	10.30	19.71
Land Level	(1,10)	1.21	1.61	1.03	3.85	4.30	0.43	4.73	8.58
Plant	(3,13)	1.03	1.94	1.22	4.19	5.43	0.54	5.97	10.16
Cut Hay	(5)	1.25	1.47	5.15	7.86	2.77	0.26	3.03	10.89
Bale	(3,6)	1.80	2.77	6.26	10.82	8.37	0.76	9.13	19.95
Stack	(4)	0.83	1.47	16.20	18.50	3.91	0.32	4.23	22.73
Pickup	(16)	1.34	4.27	0.77	6.38	4.35	0.34	4.69	11.07
ATV	(15)	0.40	4.26	0.46	5.13	1.70	0.24	1.94	7.06
Hay Shed	(17)	0.00	0.00	0.00	0.00	26.13	3.20	29.33	29.33
TOTAL		\$17.39	\$30.53	\$44.09	\$92.01	\$97.07	10.10	\$107.17	\$199.18

Table 3. Cost of Machinery Operations, Establishment Year (\$/Acre) Acres: 62.5

Operation	Machines	Fuel & Lube	Operator Labor Cost	Repair & Maint.	Variable Cost	Deprec. & Interest	Taxes, Lic. & Insurance	Fixed Cost	Total Mach. Cost
Disk (2x)	(1,8)	\$2.90	\$3.87	\$2.65	\$9.42	\$9.36	0.94	\$10.30	\$19.71
Land Level	(1,10)	1.21	1.61	1.03	3.85	4.30	0.43	4.73	8.58
Cultipack	(3,7)	1.03	1.94	0.85	3.82	4.31	0.43	4.74	8.56
Plant	(3,13)	1.03	1.94	1.22	4.19	5.43	0.54	5.97	10.16
Cut Hay	(5)	1.25	1.47	5.15	7.86	2.77	0.26	3.03	10.89
Rake Hay	(2,14)	0.50	0.81	0.36	1.66	1.26	0.13	1.39	3.05
Bale Hay	(3,6)	1.80	2.77	6.26	10.82	8.37	0.76	9.13	19.95
Stack Hay	(4)	0.83	1.47	16.20	18.50	3.91	0.32	4.23	22.73
Pickup	(16)	1.34	4.27	0.77	6.38	4.35	0.34	4.69	11.07
ATV	(15)	0.40	4.26	0.46	5.13	1.70	0.24	1.94	7.06
Hay Shed	(17)	0.00	0.00	0.00	0.00	26.13	3.20	29.33	29.33
TOTAL		\$12.28	\$24.40	\$34.94	\$71.62	\$71.88	7.58	\$79.47	\$151.09



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