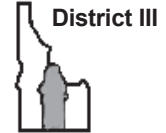


Alfalfa Hay Establishment with Oats Custer and Lemhi Counties



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Background and Assumptions

Economic costs are used in the University of Idaho costs and returns estimates. All resources are valued based on market price or opportunity cost. Input prices are based on the U of I's annual survey of agricultural supply companies. Except for contract crops, the selling price is a 10-year average. The costs and returns estimate shown here is typical for establishing alfalfa hay in Custer and Lemhi counties. Production practices are based on producer surveys conducted in the two counties. Although production practices may be similar for individual farms, each has a unique set of resources with different levels of productivity, different production problems, and therefore different costs. Farm size, crop rotation, age and type of equipment, and quality of management are all crucial factors that influence costs.

The Model Farm

This costs and returns estimate models a 475-acre ranch with 355 acres in alfalfa hay, 60 acres in barley, and 60 acres in oat hay. The crop rotation includes 6 years of alfalfa hay, followed by 1 year of barley, and 60 acres of oat hay. Approximately 60 acres of new alfalfa crop are established each year. The farm uses center pivot irrigation and surface water delivered from an irrigation district. The district charges a flat fee per acre for water.

Tillage, Fertilization, Pest Control, and Irrigation

After the harvest of grain, the ground is plowed and roller harrowed in the fall. Alfalfa and oat seed are planted shortly after a second roller harrow operation in the spring. Alfalfa-oat hay is swathed and baled one time during the summer by the farm operator. Three tons of mixed hay per acre are custom hauled and stacked. The stubble is then grazed from the middle of September through November. Fertilizer is custom applied in the spring, then incorporated by the spring harrow operation. The ranch operator performs weed control using tillage. No herbicides or insecticides are used. Alfalfa receives about 22 inches of water during the first growing season from approximately 44 irrigations (pivot rotations): 4 inches in

June, 7 inches in July, 7 inches in August, and 4 inches in September. Each irrigation generally applies .5 inch of water.

Resources: Machinery, Land, Labor, and Capital

Table 3 lists the tractors, trucks, and other equipment used for alfalfa-oat hay, along with their operating and ownership costs. All machinery except trucks is valued at 50 percent of new prices. This adjustment reduces the machinery repair operating cost, and the depreciation and interest ownership costs on equipment by 50 percent. Each truck's price includes the cost of a used truck and a new self-unloading bed.

The land charge is cash rent and covers the ownership costs (depreciation, interest, and insurance) on the irrigation system. A labor charge is made for all labor pertaining to field operations and includes a base rate plus overhead expenses. Custom charges account for those field operations that are contracted out. A management charge, 5 percent of gross returns, is included as an ownership cost.

Labor to operate machinery is valued at \$13.15 per hour, while irrigation and non-machine labor are valued at \$8.75 and \$7.70, respectively. The non-machine rate accounts for extra planting labor. Labor rates include a base wage plus a percentage for Social Security, Medicare, unemployment insurance, and other labor overhead expenses. Labor overhead amounts to 15 percent for non-machine labor, 25 percent for irrigation labor, and 30 percent for machinery labor.

Interest on operating capital is charged from the time an input is applied until the month of harvest and calculated at a nominal rate of 7.5 percent. Interest on intermediate term capital is calculated using a rate of 7.75 percent. A general overhead charge of 2.5 percent of operating expenses is included to cover unallocated costs such as office expenses, legal and accounting fees, and utilities.

**Table 1. Costs And Returns Per Acre to Establish Alfalfa Hay
Custer and Lemhi Establishment with Oats**

EBB6-AE2-05

	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
Gross Returns					
Mixed Hay	3.00	ton	65.00	195.00	_____
Stubble	1.50	aum	12.00	18.00	_____
Total Gross Returns For Mixed Hay				213.00	_____
Operating Costs					
Custom:					
Custom Ground Spray	1.00	acre	5.40	5.40	_____
Custom Fertilize	1.00	acre	5.70	5.70	_____
Custom Stack	3.00	ton	3.50	10.50	_____
Pesticide:					
Roundup Ultra RT	2.00	qt	6.60	13.20	_____
Irrigation:					
Water Assessment	1.00	acre	5.00	5.00	_____
Irrigation Repairs	22.00	acin	0.55	12.10	_____
Irrigation Power	22.00	acin	1.39	30.58	_____
Labor (irrigation)	1.10	hr	8.75	9.63	_____
Fertilizer:					
Dry Nitrogen	40.00	lb	0.39	15.60	_____
Dry P2O5	100.00	lb	0.23	23.00	_____
Seed:					
Alfalfa Seed	12.00	lb	2.75	33.00	_____
Oat Seed	60.00	lb	0.15	9.00	_____
Labor (machine)	3.28	hrs	13.15	43.19	_____
Labor (non-machine)	0.29	hrs	7.70	2.23	_____
Fuel - Gas	1.44	gal	2.26	3.25	_____
Fuel - Diesel	14.16	gal	2.07	29.32	_____
Lube				4.89	_____
Machinery Repair				9.61	_____
Interest on Operating Capital @ 7.50%				7.12	_____
Total Operating Costs per Acre				272.32	_____
Net Returns Above Operating Costs				-59.32	_____
Cash Ownership Costs					
General Overhead				7.00	_____
Land Rent				60.00	_____
Management Fee				11.00	_____
Property Taxes (machinery)				0.00	_____
Property Insurance				1.53	_____
Total Cash Ownership Costs per Acre				79.53	_____
Non-Cash Ownership Costs (depreciation and interest)					
Equipment				61.02	_____
Total Non-Cash Ownership Costs per Acre				61.02	_____
Total Costs per Acre				412.86	_____
Returns to Risk				-199.86	_____

Table 2. Monthly Summary of Cash Expenses per Acre

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	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	Jul 05	Aug 05	Sep 05	Total
Preharvest:													
Plow	19.57												19.57
Harrow	7.75							7.75					15.50
Ground Spray							18.60						18.60
Assessments							5.00						5.00
Repairs							12.10						12.10
Fertilize								44.30					44.30
Seed Hauling								6.96					6.96
Plant								52.94					52.94
Irrigate									6.58	13.52	13.52	6.58	40.20
General Pickup Use	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	24.60
Total Preharvest Costs	29.37	2.05	2.05	2.05	2.05	2.05	37.75	114.00	8.63	15.57	15.57	8.63	239.78
Harvest:													
Swath											2.29		2.29
Bale											12.63		12.63
Crop Hauling											10.50		10.50
Total Harvest Costs											25.42		25.42
Interest on Operating Capital	0.18	0.20	0.21	0.22	0.23	0.25	0.48	1.20	1.25	1.35	1.60	-0.05	7.12
Operating Costs per Acre	29.56	2.25	2.26	2.27	2.28	2.30	38.23	115.20	9.88	16.92	42.60	8.58	272.32
Operating Costs/ton	9.85	0.75	0.75	0.76	0.76	0.77	12.74	38.40	3.29	5.64	14.20	2.86	90.77
Cash Ownership													
General Overhead	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	7.00
Land Rent						60.00							60.00
Management Fee	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	11.00
Property Insurance							1.53						1.53
Cash Ownership Costs	1.50	1.50	1.50	1.50	1.50	61.50	3.03	1.50	1.50	1.50	1.50	1.50	79.53
Total Cash Costs per Acre	31.06	3.75	3.76	3.77	3.78	63.80	41.26	116.70	11.38	18.42	44.10	10.08	351.84
Total Cash Costs/ton	10.35	1.25	1.25	1.26	1.26	21.27	13.75	38.90	3.79	6.14	14.70	3.36	117.28

Table 3. Machinery and Equipment Costs per Hour

Description	Purchase Price	Years to Trade	Salvage Value	Hours Used	<-Non-Cash-> Ownership		<-----Cash-----> Ownership		<-----Operating----->		Total Oper.	Total Costs/Hr.
					Cap. Rec.	Insur.	Taxes	Repairs	Fuel & Lube			
4-Wheeler - 1	6500	10	1920	175	2.35	0.06	0.00	0.04	3.40	3.44	5.85	
4-Wheeler - 2	6500	10	1920	175	2.35	0.06	0.00	0.04	3.40	3.44	5.85	
Grain Drill - 12'	9700	12	1344	30	19.92	0.46	0.00	0.43	0.00	0.43	20.81	
Hay Baler - 1 ton	93000	10	15350	185	34.19	0.73	0.00	15.66	0.00	15.66	50.58	
Moldboard Plow 4b	7600	15	730	60	7.05	0.17	0.00	0.86	0.00	0.86	8.07	
Pickup 1 - 3/4 ton	37000	8	12913	300	8.58	0.21	0.00	2.40	7.80	10.20	18.98	
Pickup 2 - 1 ton	44000	8	15356	300	10.21	0.25	0.00	2.85	11.90	14.75	25.20	
Roller-harrow -12'	17000	15	1632	50	18.98	0.47	0.00	1.07	0.00	1.07	20.51	
SP Swather - 16'	74000	10	13086	100	50.08	1.09	0.00	1.95	0.00	1.95	53.12	
Tractor - 145hp	102000	15	19858	350	15.71	0.44	0.00	1.53	20.03	21.57	37.71	
Truck - 5 ton	44000	15	8566	200	11.84	0.33	0.00	2.97	2.98	5.95	18.12	

The practices and chemicals specified here are based on survey information representative of typical operations. They are not recommendations. Because of constantly changing labels, laws, and regulations, the University of Idaho can assume no liability for the consequences of use of chemicals specified here. In all cases, read and follow the directions and precautionary statements on the specific pesticide product label. To simplify information, trade names have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

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