



2025 Crop Enterprise Budget: Eastern Idaho – Alfalfa Hay Production

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Budget spreadsheets and associated information are available at:
<https://www.uidaho.edu/extension/food/idaho-agbiz/crop-budgets>

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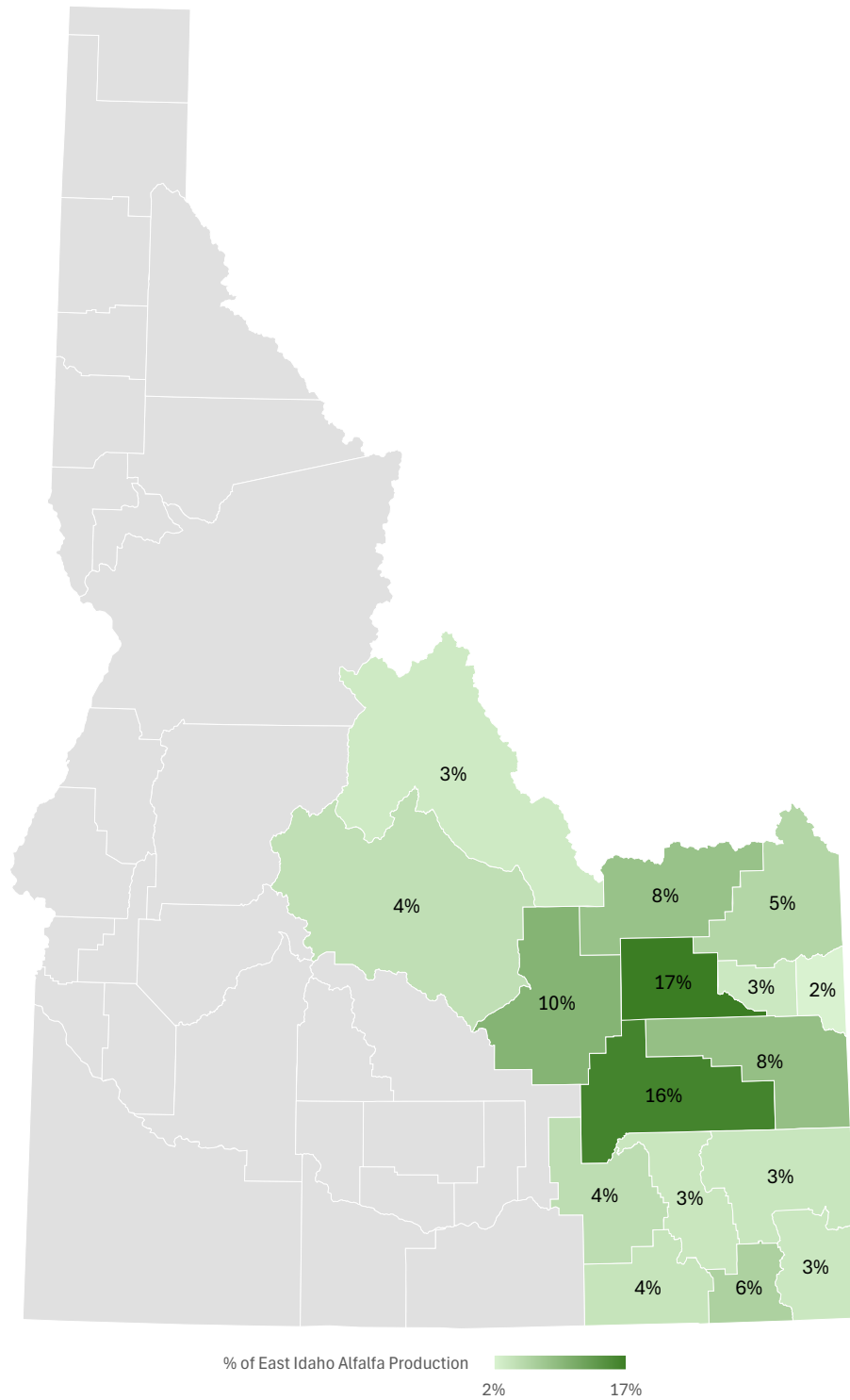
Using Enterprise Budgets for Business Planning

The crop enterprise budget presented in Table 1 is meant to represent expected costs and returns for alfalfa production on a “model farm” in Eastern ID during the 2025 production year (September 2024 – September 2025). It is important to note that enterprise costs and returns vary across farms and over time for a given farm. Such variation results from differences in geographic location and associated growing conditions (e.g., annual rainfall and temperature), sizes of farm operations, typical yields, sales prices, management experience and expertise, input prices, and other factors. Thus, the budget calculations provided in this budget may provide an estimate of general conditions for a particular region and time. They do not reflect University of ID (UI) recommendations for type and quantity of applications of fertilizer and pesticides. We recommend contacting a local UI Extension Educator or another agronomist for such advice. Adapting the budget for an operation with different characteristics is important if this budget were used in business planning for a specific operation. Such adaptation would include adjusting variables such as the types of inputs and quantities used as well as the prices paid for them.

Region of Analysis

This crop enterprise budget is meant to represent production conditions in the Eastern ID counties where alfalfa hay is produced, including Bannock, Bear Lake, Bingham, Bonneville, Butte, Caribou, Clark, Custer, Franklin, Fremont, Jefferson, Lemhi, Madison, Oneida, Power, and Teton counties. The figure shows U.S. Department of Agriculture (USDA) National Agricultural Statistics Service (NASS) alfalfa production by county presented as percentage of total alfalfa production across all Eastern ID counties.

Percent of Total Alfalfa Production by County for Eastern ID, 2022



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Source: USDA NASS.

Background on the Model Farm

The model farm has a total of 1,250 acres in crop production with 1,000 acres in alfalfa hay and the remaining 250 acres in grain. The alfalfa stand is left in production for five years with 250 acres established each year. The alfalfa hay is cut and baled three times by a custom operator during the growing season, in June, August, and September. It is assumed that the farm planted conventional rather than “Roundup ready” seed. Stakeholders have indicated that both types of seed are popular among growers in the region.

The model farm has a center pivot irrigation system. Irrigation power costs are based only on pressurization (no lift). Irrigation power costs (\$/ac-in) were provided by staff at Idaho Power based on the Schedule I24S – Agricultural Irrigation Secondary sheet for 2025. Irrigation operations occur monthly from May through September. The total amount of water applied is 28 acre-inches (ac-in), and monthly quantities are in the Schedule of Operations table below.

Schedule of Operations

The table below shows the schedule of operations during the 2024 – 2025 growing season. Note that the fertilizer amounts will vary based on farm characteristics and conditions and so can be viewed as average amounts rather than specific recommendations.

Month	Operation	Materials/Service (per acre)
September 2024	Apply herbicide	Apply 0.75 lbs Metribuzin 75DF
April 2025	Fertilize, apply pesticide	Custom fertilize: 90 lbs P; 70 lbs K; 15 lbs S
May - August 2025	Irrigate	Irrigate monthly: May, 3 ac-in; June, 7 ac-in; July, 7 ac-in; August, 7 ac-in; September, 4 ac-in Apply 3 fl oz Warrior II (early summer)
June, August, September 2025	Custom harvest	Cut, rake, and bale

Cost and Returns Components and Sources

Returns

Gross returns are equal to the quantity sold multiplied by the sales price. The quantity sold is the quantity produced minus any shrinkage. The quantity produced (tons) is equal to the yield (tons/acre) multiplied by the number of acres. For this enterprise budget, Eastern ID counties’ average alfalfa hay yields were obtained from USDA NASS. There is variation in average yields for Eastern ID counties as reflected in the range in averages of 2 and 4.9 tons/acre between 2014 and 2018 (the last year for which county level estimates are available). The yield included in the enterprise budget reflects the average yield of 4.2 tons/acre for the consistently higher yielding counties, including Bingham, Butte, Clark, Franklin, Fremont, Jefferson, Madison, and Power. The sales price data were obtained from USDA AMS Idaho Direct Hay Reports. The prices used are averages from June (after first

cutting) to August 2025 for alfalfa hay of “fair/good” quality, which was \$160/ton. Combining the yield in ton/acre and price in \$/ton provides the estimated gross return of \$672/acre.

Actual yields and sales prices will likely be higher and/or lower than those used in the enterprise budget in Table 1. Thus, we have included the “ranging analysis” in Table 2, which reflects the potential differences in net returns above operating costs under various yield and price scenarios.

Operating Costs

Item	Data Type	Source
Seed	Price in \$/lb	Regional seed dealers and growers
Fertilizer	Price in \$/lb	Regional farm input sellers and USDA AMS Pacific Northwest Production Cost Report
Pesticides/chemicals	Price in \$/lb or \$/fl oz	University of Nebraska Extension 2025 Guide to Weed Management
Custom	Custom fertilize; Custom harvest (cut, rake, and bale)	University of Idaho Custom Rates for Idaho Agricultural Operations: 2025
Fuel – Farm Diesel	Farm diesel price in \$/gal.; Average of prices for September 2024 and April 2025.	USDA AMS Pacific Northwest Production Cost Report
Irrigation Power – Center Pivot	Price in \$/ac-in	Idaho Power, I24S
Irrigation Water Assessment	Rate in \$/acre	Regional irrigation districts
Irrigation Repairs – Center Pivot	Historical University of Idaho crop enterprise budgets value, indexed by PPI for maintenance and repair services for agricultural machinery	Federal Reserve Economic Data, Federal Reserve Bank of St. Louis
Lubricants	Historical University of Idaho crop enterprise budgets value, indexed by CPI for fuel oil	Federal Reserve Economic Data, Federal Reserve Bank of St. Louis
Machinery Repairs	Historical University of Idaho crop enterprise budgets value, indexed by PPI for maintenance and repair services for agricultural machinery	Federal Reserve Economic Data, Federal Reserve Bank of St. Louis
Equipment operator labor	Hourly wage in \$/hr; Added 25% of wage for payroll overhead	ID Department of Labor Crop Activity 2025 Report
Crop insurance	Catastrophic Risk Protection (CAT) insurance	USDA RMA
Operating interest	Variable interest rates: Operating loans	Federal Reserve Bank of Kansas City Ag Credit Survey

Cash Overhead Costs

Item	Data Type	Source
General Overhead	5% of operating expenses	Historical University of Idaho crop enterprise budgets
Land Rent	Cash rental rate in \$/acre	Historical University of Idaho crop enterprise budgets
Management Fee	5% of gross revenue	Historical University of Idaho crop enterprise budgets

Discussion

In comparison to the 2019 crop enterprise budget (CEB) for alfalfa production developed by Eborn, Sagers, and Findlay, our CEB for 2025 had estimated lower net returns above operating costs due to both lower gross revenues and higher total operating costs. The lower gross return in 2025 reflects different assumptions about the yields obtained on the model farm, which can vary greatly from farm-to-farm due to factors such as seed choice and other production practices. The 2019 CEB estimated net returns above operating costs estimated at positive \$503.72/acre, while those for 2025 are \$192.84/acre.

The “ranging analysis” results in Table 2 show that yields above 5 tons/acre and prices above \$175/acre would be needed to achieve the net returns above operating cost value at the level of that in 2019 of about \$504/acre. The ranging analysis also shows that net returns above operating costs would likely be negative at an average price of \$145/ton, unless yields were above 3.25 tons/acre.

Acknowledgments

The authors acknowledge the financial support provided by the U.S. Department of Agriculture Risk Management Agency under Award RMA24CPT0013666 and the Idaho Agricultural Experiment Station. We also thank the entities that provided data, including staff at Idaho Power, Idaho Barley Commission, USDA, and local stakeholders.

Table 1. 2025 Costs and Returns for Alfalfa Hay Production – Eastern Idaho

Alfalfa Hay Production 2025 Eastern Idaho				Number of acres: 1,000	
Item	Quantity per acre	Unit	Price or cost	Total value or cost	Value or cost per acre
GROSS RETURNS					
Alfalfa hay	4.2	ton	\$ 160.00	\$ 672,000.00	\$ 672.00
TOTAL GROSS RETURNS				\$ 672,000.00	\$ 672.00
OPERATING COSTS					
Seed:				\$ -	\$ -
Fertilizer:				\$ 114,700.00	\$ 114.70
Dry P205	90	lb	\$ 0.85	\$ 76,500.00	\$ 76.50
K2O	70	lb	\$ 0.46	\$ 32,200.00	\$ 32.20
Sulfur	15	lb	\$ 0.40	\$ 6,000.00	\$ 6.00
Pesticides:				\$ 12,304.69	\$ 12.30
Metribuzin 75DF	0.75	lb	\$ 10.00	\$ 7,500.00	\$ 7.50
Warrior II w/ Zeon Technology	1.5	fl oz	\$ 3.20	\$ 4,804.69	\$ 4.80
Custom:				\$ 146,250.00	\$ 146.25
Custom fertilize	1	acre	\$ 9.75	\$ 9,750.00	\$ 9.75
Custom harvest (cut, rake, bale - 3x)	3	acre	\$ 45.50	\$ 136,500.00	\$ 136.50
Irrigation:				\$ 124,320.00	\$ 124.32
Irrigation Power - Center Pivot	28	ac-in	\$ 2.97	\$ 83,160.00	\$ 83.16
Irrigation Water Assessment	1	acre	\$ 16.80	\$ 16,800.00	\$ 16.80
Irrigation Repairs - Center Pivot	28	ac-in	\$ 0.87	\$ 24,360.00	\$ 24.36
Machinery:				\$ 13,655.20	\$ 13.66
Fuel - Farm Diesel	2.08	gal	\$ 3.44	\$ 7,155.20	\$ 7.16
Lubricants	1	acre	\$ 2.94	\$ 2,940.00	\$ 2.94
Machinery repairs	1	acre	\$ 3.56	\$ 3,560.00	\$ 3.56
Labor:				\$ 43,018.40	\$ 43.02
Equipment Operator Labor	0.82	hrs	\$ 21.88	\$ 17,941.60	\$ 17.94
Irrigation Labor	1.12	hrs	\$ 22.39	\$ 25,076.80	\$ 25.08
Other:				\$ 655.00	\$ 0.66
Crop insurance (CAT)	1	acre	\$ 0.66	\$ 655.00	\$ 0.66
		months			
Interest on Operating Loan @ 8%	0.08	8	\$ 454,903.29	\$ 24,261.51	\$ 24.26
TOTAL OPERATING COSTS				\$ 479,164.80	\$ 479.16
OPERATING COSTS PER TON					\$ 114.09
NET RETURNS ABOVE OPERATING COSTS					\$ 192.84

cont. Table 1. 2025 Costs and Returns for Alfalfa Hay Production – Eastern Idaho

Cash Overhead Costs:		
General Overhead	\$ 23.96	\$ 23.96
Land Rent	\$ 210.00	\$ 210.00
Management Fee	\$ 33.60	\$ 33.60
TOTAL CASH OVERHEAD COSTS		\$ 267.56
OWNERSHIP COSTS PER TON		\$ 63.70
TOTAL COSTS PER ACRE		\$ 746.72
TOTAL COSTS PER TON		\$ 177.79
NET RETURNS ABOVE TOTAL COSTS		\$ (74.72)

Table 2. Ranging Analysis – 2025 Alfalfa Hay Production – Eastern Idaho

NET RETURN PER ACRE ABOVE OPERATING COSTS															
Alfalfa Production - 2025 Eastern Idaho															
Price (\$/ton)		Yield (ton/acre)													
Alfalfa hay		3.25		3.50		3.75		4.20		4.5		4.75		5	
\$ 175.00	\$	89.59	\$	133.34	\$	177.09	\$	255.84	\$	308.34	\$	352.09	\$	395.84	
\$ 170.00	\$	73.34	\$	115.84	\$	158.34	\$	234.84	\$	285.84	\$	328.34	\$	370.84	
\$ 165.00	\$	57.09	\$	98.34	\$	139.59	\$	213.84	\$	263.34	\$	304.59	\$	345.84	
\$ 160.00	\$	40.84	\$	80.84	\$	120.84	\$	192.84	\$	240.84	\$	280.84	\$	320.84	
\$ 155.00	\$	24.59	\$	63.34	\$	102.09	\$	171.84	\$	218.34	\$	257.09	\$	295.84	
\$ 150.00	\$	8.34	\$	45.84	\$	83.34	\$	150.84	\$	195.84	\$	233.34	\$	270.84	
\$ 145.00	\$	(7.91)	\$	28.34	\$	64.59	\$	129.84	\$	173.34	\$	209.59	\$	245.84	