



## 2025 Crop Enterprise Budget: North Idaho – Alfalfa Establishment with Barley

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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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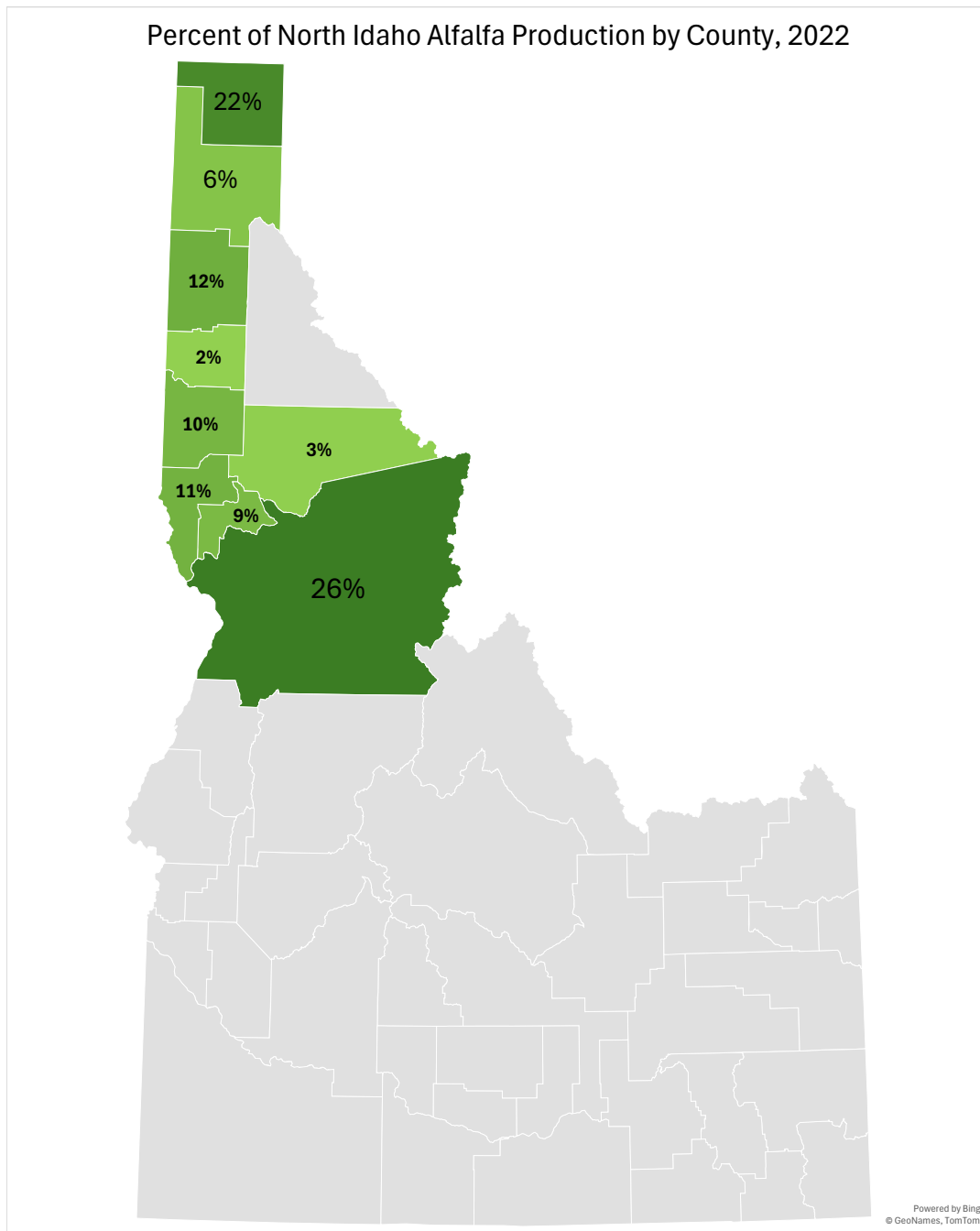
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## **Using Enterprise Budgets for Business Planning**

The crop enterprise budget presented in Table 1 is meant to represent expected costs and returns for alfalfa establishment with barley on a “model farm” in North ID during the 2025 production year (September 2024 – August 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 Idaho (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 North ID counties where alfalfa hay and feed barley are produced, including Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, and Nez Perce. The figure shows U.S. Department of Agriculture (USDA) National Agricultural Statistics Service (NASS) alfalfa production in tons per acre by county presented as percentage of total alfalfa production in the North ID counties.



Source: USDA NASS.

### Background on the Model Farm

The model farm has a total of 2,000 acres in crop production with 100 acres in alfalfa hay and the remaining 1,900 acres in grain, oilseed, and legume production. The alfalfa stand is left in production for about six years, although sometimes longer, excluding the establishment year. In the establishment year, barley and alfalfa hay are inter-seeded in May. The barley is harvested for sale as livestock feed in August.

### *Schedule of Operations*

The table below shows the schedule of operations during the 2024 – 2025 growing season. Note that for the planting in May 2025 the seed quantities are listed in lbs/acre. Current U of I Extension Agronomists recommend seeding based on target plant population density, which varies by seed type. So, the seeding rate listed in the table can be viewed as an average seeding rate across seed types rather than a recommended rate. The fertilizer amounts would also vary across farms and conditions and so can also be viewed as average amounts rather than specific recommendations.

<b>Month</b>	<b>Operation</b>	<b>Materials/Service (per acre)</b>
<b>September 2024</b>	Plow	
<b>April 2025</b>	Cultivate	
<b>April 2025</b>	Fertilize	90 lbs N; 30 lbs P; 20 lbs S
<b>April 2025</b>	Cultivate	
<b>May 2025</b>	Harrow	
<b>May 2025</b>	Plant	14 lbs non-GMO alfalfa seed; 80 lbs barley seed
<b>August 2025</b>	Custom harvest (barley)	

### **Cost and Returns Components and Sources**

#### *Returns*

Gross returns are equal to the quantity sold and 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, North ID county average barley yields were obtained from USDA NASS. These yield data are in bu/acre and were converted to tons/acre using the ratio of 48 lb/bu from the U.S. Grains Council (<https://grains.org/markets-tools-data/tools/converting-grain-units/>). At 48 lbs/bu, this implies 41.7 bu/ton. Average yields for North ID counties have averaged between 1.1 tons/acre to 1.9 tons/acre between 2018 and 2023. The yield included in the enterprise budget of 1.5 tons/acre reflects an average level. The sales price data were obtained from the Idaho Barley Commission “Idaho Grain Market Reports” for the growing season 2025, which reported feed barley prices in Southern ID averaging near \$8.50/cwt (or ~\$4.08/bu). This implies a per ton sales price of \$170. Combining the yield in ton/acre and price in \$/ton provides the estimated gross return of \$255/acre.

Actual yields and sales prices will likely be higher and/or lower than those used in the overall 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*

<b>Item</b>	<b>Data Type</b>	<b>Source</b>
Seeds	Price in \$/lb	Regional seed dealers
Fertilizer	Price in \$/lb	Regional farm input sellers and USDA AMS Pacific Northwest Production Cost Report
Custom	Custom harvest via combine	University of Idaho Custom Rates for Idaho Agricultural Operations: 2025
Fuel – Farm Diesel	Farm diesel price in \$/gal.; Weighted price for September 2024, April – May 2025	USDA AMS Pacific Northwest Production Cost Report
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	Premium cost per acre	USDA RMA
Operating interest	Variable interest rates: Operating loans	Federal Reserve Bank of Kansas City Ag Credit Survey

### *Cash Overhead Costs*

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

### **Discussion**

In comparison to the 2015 crop enterprise budget (CEB) for establishing alfalfa hay with barley by Kathleen Painter, our budget for 2025 had higher total operating costs but also higher gross returns. Specifically, the 2015 CEB had net returns above operating costs estimated at negative \$166.83/acre (or -59% of total operating costs), while that for 2025 is negative \$82.43/acre (or -24% of total operating costs). This difference is largely due to a

higher yield and barley sales price, which offset higher costs of fertilizer, custom operations, machinery, labor, crop insurance, and interest.

While it appears that establishing alfalfa with barley is a bit more profitable (or less unprofitable) in 2025 than 2015, it is important to consider that the 2025 growing season has been particularly dry. The lack of rainfall in many areas has particularly impacted spring planted crops that had not emerged before the drought conditions were strongest. So, there may be many North ID producers who have lower than average 1.5 ton/acre yields. The “ranging analysis” results in Table 2 show that yields of about 1 ton/acre and an average sales price of \$170/ton would provide net returns at the same level as in the 2015 budget. However, there is substantial climatic heterogeneity in North ID, so some producers may have had higher than average yields. The ranging analysis shows that positive net returns above operating costs are achievable at yields of 2 tons/acre and an average sale price of \$170/ton or higher yields and sales prices.

## **Acknowledgments**

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**Table 1. 2025 Costs and Returns for Alfalfa Hay Establishment with Barley – North Idaho**

Alfalfa Hay Establishment with Barley 2025 North Idaho				Number of acres: 100	
Item	Quantity per acre	Unit	Price or cost	Total value or cost	Value or cost per acre
<b>GROSS RETURNS</b>					
Barley	1.5	ton	\$ 170.00	\$ 25,500.00	\$ 255.00
<b>TOTAL GROSS RETURNS</b>				<b>\$ 25,500.00</b>	<b>\$ 255.00</b>
<b>OPERATING COSTS</b>					
<b>Seed:</b>				<b>\$ 8,190.00</b>	<b>\$ 81.90</b>
Barley Seed	80	lb	\$ 0.28	\$ 2,240.00	\$ 22.40
Alfalfa Seed (non-GMO)	14	lb	\$ 4.25	\$ 5,950.00	\$ 59.50
<b>Fertilizer:</b>				<b>\$ 10,070.00</b>	<b>\$ 100.70</b>
Nitrogen (dry)	90	lb	\$ 0.69	\$ 6,210.00	\$ 62.10
Phosphorus	30	lb	\$ 1.02	\$ 3,060.00	\$ 30.60
Sulfur	20	lb	\$ 0.40	\$ 800.00	\$ 8.00
<b>Pesticides:</b>				<b>\$ -</b>	<b>\$ -</b>
<b>Custom:</b>				<b>\$ 4,050.00</b>	<b>\$ 40.50</b>
Custom harvest (combine)	1	acre	\$ 40.50	\$ 4,050.00	\$ 40.50
<b>Machinery:</b>				<b>\$ 4,280.30</b>	<b>\$ 42.80</b>
Fuel - Farm Diesel	7.3	gal	\$ 3.61	\$ 2,635.30	\$ 26.35
Lubricants	1	acre	\$ 3.45	\$ 345.00	\$ 3.45
Machinery repairs	1	acre	\$ 13.00	\$ 1,300.00	\$ 13.00
<b>Labor:</b>				<b>\$ 2,634.50</b>	<b>\$ 26.13</b>
Equipment Operator Labor	1.1	hrs	\$ 23.75	\$ 2,612.50	\$ 26.13
<b>Other:</b>				<b>\$ 22.00</b>	<b>\$ 22.00</b>
Crop insurance (feed barley)	1	acre	\$ 22.00	\$ 22.00	\$ 22.00
<b>Interest on Operating Loan @ 8%</b>				<b>\$ 2,339.74</b>	<b>\$ 23.40</b>
	0.08	months 12	\$ 29,246.80		
<b>TOTAL OPERATING COSTS</b>				<b>\$ 31,586.54</b>	<b>\$ 337.43</b>
<b>OPERATING COSTS PER TON</b>					<b>\$ 224.95</b>
<b>NET RETURNS ABOVE OPERATING COSTS</b>					<b>\$ (82.43)</b>

**cont. Table 1. 2025 Costs and Returns for Alfalfa Hay Establishment with Barley – North Idaho**

<b>Cash Overhead Costs:</b>			
General Overhead	\$	16.87	\$ 16.87
Land Rent	\$	75.00	\$ 75.00
Management Fee	\$	12.75	\$ 12.75
<b>TOTAL CASH OVERHEAD COSTS</b>			<b>\$ 104.62</b>
<b>OWNERSHIP COSTS PER TON</b>			<b>\$ 69.75</b>
<b>TOTAL COSTS PER ACRE</b>			<b>\$ 442.05</b>
<b>TOTAL COSTS PER TON</b>			<b>\$ 294.70</b>
<b>NET RETURNS ABOVE TOTAL COSTS</b>			<b>\$ (187.05)</b>



**Table 2. Ranging Analysis – 2025 Alfalfa Hay Establishment with Barley – North Idaho**

NET RETURN PER ACRE ABOVE OPERATING COSTS										
Alfalfa Establishment with Barley - 2025 North Idaho										
Price (\$/ton)		Yield (tons/acre)								
Barley		0.75	1.00	1.25	1.50	1.75	2.00	2.25		
\$	185.00	\$ (198.68)	\$ (152.43)	\$ (106.18)	\$ (59.93)	\$ (13.68)	\$ 32.57	\$ 78.82		
\$	180.00	\$ (202.43)	\$ (157.43)	\$ (112.43)	\$ (67.43)	\$ (22.43)	\$ 22.57	\$ 67.57		
\$	175.00	\$ (206.18)	\$ (162.43)	\$ (118.68)	\$ (74.93)	\$ (31.18)	\$ 12.57	\$ 56.32		
\$	170.00	\$ (209.93)	\$ (167.43)	\$ (124.93)	\$ (82.43)	\$ (39.93)	\$ 2.57	\$ 45.07		
\$	165.00	\$ (213.68)	\$ (172.43)	\$ (131.18)	\$ (89.93)	\$ (48.68)	\$ (7.43)	\$ 33.82		
\$	160.00	\$ (217.43)	\$ (177.43)	\$ (137.43)	\$ (97.43)	\$ (57.43)	\$ (17.43)	\$ 22.57		
\$	155.00	\$ (221.18)	\$ (182.43)	\$ (143.68)	\$ (104.93)	\$ (66.18)	\$ (27.43)	\$ 11.32		