



## Feed Barley: High Rainfall Dryland

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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 producing dryland spring barley in the higher rainfall areas of southeastern Idaho. Production practices most closely represent those in Caribou, Fremont, Madison and Teton 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 2,100-acre dryland farm following a traditional continuous cropping rotation of spring barley or spring wheat. Rotation can vary by field and moisture availability. A typical year would have 200 acres planted to spring wheat and 1,900 acres planted to spring barley.

#### Tillage, Fertilization, and Pest Control

No tillage occurs in the fall after the previous spring crop is harvested. The ground is sprayed with glyphosate in the spring prior to planting. No tillage operations are done prior to planting. In April wheat is direct-seeded into stubble and fertilizer is applied using an air-seeder hoe drill. A ground application of herbicide to control broad-leaf weeds is made in June. No wild oat herbicide is applied and no cost for insect control is included because

treatment is infrequent and unpredictable. Barley is harvested and hauled to on-farm storage in August by a custom operator.

#### Resources: Machinery, Land, Labor, and Capital

Table 3 lists the tractors, trucks, and other equipment used to produce spring wheat, along with their operating and ownership costs. All machinery except trucks and one tractor are valued at 75 percent of replacement cost new prices shown in Table 3. This adjustment reduces the machinery repair operating cost and the depreciation and interest ownership costs on equipment by 25 percent. A land charge is made on a cash rent equivalent basis. A machinery labor charge is made for all field operations except those performed on a custom basis. Custom operations are listed separately. The non-machine labor accounts for extra planting labor. Labor to operate machinery is valued at \$13.15 per hour, while non-machine labor is valued at \$7.70 per hour. 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 and 30 percent for machinery labor. A management fee, 5 percent of gross returns, is included as an ownership cost. 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. An 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 Produce Barley  
SEI High Rainfall Dryland Spring Feed Barley**

**EBB4-FBD2-05**

	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>Gross Returns</b>					
Barley	24.00	cwt	4.55	109.20	_____
Total Gross Returns For Barley				109.20	_____
<b>Operating Costs</b>					
Other:					
Crop Insurance	1.00	acre	3.00	3.00	_____
Pesticide:					
Roundup	10.00	oz	0.32	3.20	_____
2,4-D Ester (LV4)	0.25	qt	4.05	1.01	_____
Express	0.20	oz	20.75	4.15	_____
Seed:					
Feed Barley Seed	60.00	lb	0.13	7.80	_____
Fertilizer:					
Dry Nitrogen	55.00	lb	0.39	21.45	_____
Dry P2O5	15.00	lb	0.24	3.60	_____
Sulfur	10.00	lb	0.12	1.20	_____
Custom:					
Custom Combine	1.00	acre	17.50	17.50	_____
Custom Haul	24.00	bu	0.15	3.60	_____
Labor (machine)	0.61	hrs	13.15	7.96	_____
Labor (non-machine)	0.07	hrs	7.70	0.54	_____
Fuel - Diesel	4.06	gal	2.08	8.45	_____
Lube				1.27	_____
Machinery Repair				16.96	_____
Interest on Operating Capital @ 7.50%				8.30	_____
Total Operating Costs per Acre				109.98	_____
Net Returns Above Operating Costs				-0.78	_____
<b>Cash Ownership Costs</b>					
General Overhead				3.00	_____
Land Rent				27.00	_____
Management Fee				5.50	_____
Property Taxes (machinery)				0.00	_____
Property Insurance				0.51	_____
Total Cash Ownership Costs per Acre				36.01	_____
<b>Non-Cash Ownership Costs (depreciation and interest)</b>					
Equipment				19.80	_____
Total Non-Cash Ownership Costs per Acre				19.80	_____
Total Costs per Acre				165.78	_____
Returns to Risk				-56.58	_____

**Table 2. Monthly Summary of Cash Expenses per Acre**

**EBB4-FBD2-05**

	Apr 04	May 04	Jun 04	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	Jul 05	Aug 05	Sep 05	
<b>Preharvest:</b>																			
Crop Insurance	3.00																		
Ground Spray	4.51													6.47					
Seed Hauling													2.06						
Plant	58.15																		
General Pickup Use	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53							
<b>Total Preharvest Costs</b>	<b>66.19</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>0.53</b>	<b>2.06</b>	<b>6.47</b>					
<b>Harvest:</b>																			
Combine																			17.50
Crop Hauling																			3.60
<b>Total Harvest Costs</b>																			<b>21.10</b>
Interest on Operating Capital	0.41	0.42	0.42	0.42	0.43	0.43	0.43	0.44	0.44	0.44	0.45	0.45	0.46	0.50	0.50	0.50	0.50	0.50	0.64
<b>Operating Costs per Acre</b>	<b>66.61</b>	<b>0.95</b>	<b>0.95</b>	<b>0.96</b>	<b>0.96</b>	<b>0.96</b>	<b>0.97</b>	<b>0.97</b>	<b>0.97</b>	<b>0.98</b>	<b>0.98</b>	<b>0.98</b>	<b>2.52</b>	<b>6.98</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>21.74</b>
<b>Cash Ownership</b>																			
General Overhead	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25							
Land Rent													27.00						
Management Fee	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46							
Property Insurance	0.51																		
<b>Cash Ownership Costs</b>	<b>1.21</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>0.71</b>	<b>27.71</b>							
<b>Total Cash Costs per Acre</b>	<b>67.82</b>	<b>1.66</b>	<b>1.66</b>	<b>1.66</b>	<b>1.67</b>	<b>1.67</b>	<b>1.67</b>	<b>1.68</b>	<b>1.68</b>	<b>1.68</b>	<b>1.69</b>	<b>28.69</b>	<b>2.52</b>	<b>6.98</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>21.74</b>

**Table 3. Machinery and Equipment Costs per Hour**

Description	Purchase Price	Years to Trade	Salvage Value	Hours Used	<-Non-Cash->		<-----Cash----->		<-----Operating----->			Total Costs/Hr.
					Ownership Cap. Rec.	Insur.	Taxes	Repairs	Fuel & Lube	Total Oper.		
Air Seeder - Hoe	122000	15	11713	285	35.79	0.88	0.00	116.78	0.00	116.78	153.45	
Pickup - used 3/4t	11000	8	2500	200	6.22	0.13	0.00	0.91	5.98	6.89	13.23	
Pickup 1 - 3/4 ton	37000	8	5000	300	14.75	0.26	0.00	3.59	9.57	13.16	28.17	
Sprayer - 60'	9000	15	864	110	6.85	0.17	0.00	2.98	0.00	2.98	10.00	
Tractor 2 - 300hp	158000	15	30760	310	41.21	1.14	0.00	1.35	41.65	43.00	85.36	
Tractor 3 - 200hp	134000	15	26087	120	90.47	2.51	0.00	1.03	27.76	28.80	121.78	
Truck 1 - 5 ton	55000	15	10708	400	11.10	0.31	0.00	7.35	1.59	8.94	20.35	

Net Returns Per Acre Above Operating Costs For Barley  
Yield (cwt/acre)

	16.80	19.20	21.60	24.00	26.40	28.80	31.20
3.19	-56	-49	-41	-33	-26	-18	-10
3.64	-49	-40	-31	-23	-14	-5	4
4.10	-41	-31	-21	-12	-2	8	18
4.55	-34	-23	-12	-1	10	21	32
5.01	-26	-14	-2	10	22	34	46
5.46	-18	-5	8	21	34	47	60
5.92	-11	4	18	32	46	61	75

Net Returns Per Acre Above Cash Costs For Barley  
Yield (cwt/acre)

	16.80	19.20	21.60	24.00	26.40	28.80	31.20
3.19	-92	-85	-77	-69	-62	-54	-46
3.64	-85	-76	-67	-59	-50	-41	-32
4.10	-77	-67	-57	-48	-38	-28	-18
4.55	-70	-59	-48	-37	-26	-15	-4
5.01	-62	-50	-38	-26	-14	-2	10
5.46	-54	-41	-28	-15	-2	11	24
5.92	-47	-32	-18	-4	10	25	39

Net Returns Per Acre Above Total Costs For Barley  
Yield (cwt/acre)

	16.80	19.20	21.60	24.00	26.40	28.80	31.20
3.19	-112	-105	-97	-89	-82	-74	-66
3.64	-105	-96	-87	-78	-70	-61	-52
4.10	-97	-87	-77	-67	-58	-48	-38
4.55	-89	-78	-68	-57	-46	-35	-24
5.01	-82	-70	-58	-46	-34	-21	-9
5.46	-74	-61	-48	-35	-22	-9	5
5.92	-66	-52	-38	-24	-9	5	19

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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