

## Southwestern Idaho: Treasure Valley

### Soft White Winter Wheat

Ben Eborn and Jerry Neufeld



Southwestern  
Idaho

## Background & Assumptions

The University of Idaho's costs and returns estimates are based on economic costs, not accounting costs. All resources are valued at a market rate or "opportunity cost." Input prices are taken from the U of I's annual survey of agricultural supply companies. The selling price is an historical average, not a current year's price. The cost estimate shown here is typical for producing alfalfa in northern Idaho. Production practices most closely resemble those in Canyon, Payette and Owyhee counties. Although production practices may be similar for individual farms, each farm 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 the quality and intensity of management are all crucial factors that influence costs.

### The Model Farm

This costs and returns estimate models a 1,200-acre farm with 300 acres in winter wheat. In addition to winter wheat, the farm grows 300 acres of potatoes or sugarbeets, 300 acres of corn, 150 acres of dry beans or onions, and 150 acres of alfalfa seed or alfalfa hay. The farm uses a concrete ditch and siphon tube irrigation system with water delivered to the farm from an irrigation district. The district charges a flat fee per acre for water.

### Tillage, Fertilization, Pest Control & Irrigation

After harvest of the previous crop, the ground is disced, roller harrowed and planted in the fall. The field is corrugated once after planting. The crop is harvested and hauled to storage by a custom operator in July. Fertilizer is applied by a custom applicator before planting in the fall and again in the spring. A post-emergence two-way tank mix herbicide is applied by the farm operator in the spring for control weed control. No costs are included for insects or fungicides because their use is infrequent

and unpredictable. Winter wheat is irrigated once in October, and six times the following growing season: once in April, twice in May and 3 times in July.

Table 1 lists costs and returns by cost category (fertilizers, pesticides, machinery) for alfalfa production in southwestern Idaho. The cost for each operation can be found in Table 2. Costs by month can be found in Table 3.

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

Table 4 lists hourly equipment costs for the tractors, trucks, and other farm equipment, along with total annual hours of use for this crop and for all crops in the model farm. Except for trucks, machinery is valued at 75 percent of new replacement cost. In the years between equipment price surveys, which are done approximately every five years, machinery prices are adjusted using USDA's Farm Machinery Prices Paid Index. Machinery cost assumptions are listed in Table 5, and include purchase price, salvage value, annual capital recovery costs, and cash overhead costs.

Land rent for winter wheat production is estimated to be \$225 per acre. The cost of the irrigation system is included in the rent.

The University of Idaho uses the budget generator program *Budget Planner* from the University of California-Davis to produce the various tables shown in this publication. Machinery operating and ownership costs are calculated based on engineering equations in this program. Machinery operating costs include fuel, lubricants and repairs.

The cost of labor used in this study includes a base wage, plus a percentage to account for various payroll taxes (FICA, SUTA & FUTA), and workman's compensation, as well as benefits such as paid

vacation/personal leave days, health insurance and bonuses. Labor is classified by the type of work performed. Labor classifications, labor rates and payroll overhead are shown below.

### Labor Values

#### Labor Values

Labor Class	Base Rate	Payroll Overhead	Effective Rate
General Farm Labor	\$9.85	15%	\$11.35
Truck Drivers	\$13.35	15%	\$15.35
Equipment Operators	\$15.75	25%	\$19.70
Irrigation Labor			
Set Move: HL & WL	\$10.75	30%	\$14.00
Continuous Move: CP & L	\$15.75	25%	\$19.70

Set Move includes: handlines and wheellines

Continuous Move includes: center pivots and linear move

Payroll overhead for set move systems includes housing

Based on the speed, width and overall field efficiency, *Budget Planner* calculates equipment operator labor hours for all field operations except those performed on a custom basis. Custom operations are listed separately. General farm labor accounts for extra field labor used during planting or harvest.

A management fee is charged based on approximately 5% of total production costs.

### Capital and Overhead Costs

Interest on operating capital is charged from the time an input is applied until harvest and is calculated at a nominal rate of 6.25 percent. Interest on intermediate term capital, primarily equipment, is

calculated using a rate of 6.0 percent. A general overhead charge, calculated at approximately 2.5 percent of operating expenses, is included to cover unallocated whole-farm costs such as office expenses, legal and accounting fees, cell phones, internet service and utilities. Irrigation power is not included as part of general farm utilities.

### Sensitivity Analysis

Impacts of changes in crop price and yield assumptions on net returns, known as sensitivity or ranging analysis, can be found in Table 6.

University of Idaho costs and returns estimates for both crops and livestock can be found at: <http://www.uidaho.edu/idaho-agbiz>

### Authors

Ben Eborn is an Extension agricultural economist with the University of Idaho. Jerry Neufeld is an Extension Educator in Canyon County.

### Disclaimer

The practices and chemicals specified in the publication are not recommendations. Always read and follow the directions printed on the pesticide label. Due to constantly changing pesticide laws and labels, some pesticides may have been cancelled or had certain uses prohibited. The use of trade names for various products simplifies presentation of this material and should not be considered an endorsement, nor is any criticism implied of similar products not mentioned.

**University of Idaho**  
Extension

Soft White Winter Wheat - Treasure Valley - 2017				Number of acres: 300	
Item	Quantity Per Acre	Unit	Price or Cost	Total Value	Value or Cost/Acre
<b>Gross Returns</b>					
Soft White Wheat	130.00	bu	4.00	156,000	\$520.00
				0	\$0.00
				0	\$0.00
<b>Total Gross Returns</b>				<b>\$156,000</b>	<b>\$520.00</b>
<b>Operating Inputs</b>					
<b>Seed:</b>				<b>\$5,400</b>	<b>\$18.00</b>
Wheat Seed: SWS	100.00	lb	0.18	5,400	18.00
				0	0.00
<b>Fertilizer:</b>				<b>\$31,518</b>	<b>\$105.06</b>
Dry Nitrogen	150.00	lb	0.40	18,000	60.00
Dry P2O5	50.00	lb	0.38	5,700	19.00
K2O	50.00	lb	0.31	4,650	15.50
Sulfur	48.00	lb	0.22	3,168	10.56
				0	0.00
				0	0.00
				0	0.00
<b>Pesticides:</b>				<b>\$3,297</b>	<b>\$10.99</b>
Bronate Advanced	0.80	pint	5.60	1,344	4.48
Affinity Broad Spectrum	0.60	oz	9.60	1,728	5.76
N-I Surfactant + UAN	1.00	acre	0.75	225	0.75
				0	0.00
				0	0.00
				0	0.00
<b>Custom &amp; Consultants:</b>				<b>\$22,470</b>	<b>\$74.90</b>
Custom Fertilize	2.00	acre	7.75	4,650	15.50
Custom Combine	1.00	acre	36.00	10,800	36.00
Custom Haul	130.00	bu	0.18	7,020	23.40
				0	0.00
				0	0.00
<b>Irrigation:</b>				<b>\$16,950</b>	<b>\$56.50</b>
Water Assessment	1.00	acre	53.50	16,050	53.50
Repairs - Conc. Ditch	1.00	acre	3.00	900	3.00
				0	0.00
<b>Machinery:</b>				<b>\$10,114</b>	<b>\$33.71</b>
Fuel - Gas	1.28	gal	2.55	979	3.26
Fuel - Diesel	6.64	gal	2.35	4,681	15.60
Fuel - Road Diesel	0.10	gal	2.85	86	0.29
Lube	1.00	\$	2.96	888	2.96
Machinery Repair	1.00	\$	11.60	3,480	11.60
<b>Labor:</b>				<b>\$21,713</b>	<b>\$72.38</b>
Equipment Operator Labor	1.76	hrs	19.70	10,402	34.67
Non-Machine Labor	0.30	hrs	11.35	1,022	3.41
Irrigation Labor	2.45	hrs	14.00	10,290	34.30
<b>Other:</b>				<b>\$4,500</b>	<b>\$15.00</b>
Crop Insurance	1.00	acre	15.00	4,500	15.00
				0	0.00
				0	0.00
Interest on Operating Capital a	6.25%			\$2,835	\$9.45
<b>Total Operating Costs</b>				<b>\$118,797</b>	<b>\$395.99</b>
<b>Operating Costs per Unit</b>				<b>\$914</b>	<b>\$3.05</b>
<b>Net Returns Above Operating Costs</b>				<b>\$37,203</b>	<b>\$124.01</b>

<b>Soft White Winter Wheat - Treasure Valley - 2017</b>		<b>Number of acres: 300</b>	
<b>Ownership Costs:</b>			
General Overhead		3,000	10.00
Land Rent		67,500	225.00
Management Fee		10,800	36.00
Property Taxes		0	
Property Insurance		426	1.42
Investment Repairs		0	
Capital Recovery - Equipment		13,494	44.98
		0	
<b>Total Ownership Costs</b>		<b>\$95,220</b>	<b>\$317.40</b>
<b>Ownership Costs per Unit</b>		<b>\$732</b>	<b>\$2.44</b>
<b>Total Costs per Acre</b>		<b>\$214,017</b>	<b>\$713.39</b>
<b>Total Cost per Unit</b>		<b>\$1,646</b>	<b>\$5.49</b>
<b>Returns to Risk</b>		<b>-\$58,017</b>	<b>-\$193.39</b>
Notes:			
<b>Breakeven Analysis:</b>			
	-	Base	+
	10%		10%
		<b>Yield</b>	
<u>Price</u>	<b>117</b>	<b>130</b>	<b>143</b>
Operating Cost Breakeven	\$3.38	\$3.05	\$2.77
Ownership Cost Breakeven	\$2.71	\$2.44	\$2.22
Total Cost Breakeven	\$6.10	\$5.49	\$4.99
		<b>Price</b>	
<u>Yield</u>	<b>\$3.60</b>	<b>\$4.00</b>	<b>\$4.40</b>
Operating Cost Breakeven	110.0	99.0	90.0
Ownership Cost Breakeven	88.2	79.4	72.1
Total Cost Breakeven	198.2	178.3	162.1

Issued in furtherance of cooperative extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Barbara Petty, Interim-Director University of Idaho Extension, University of Idaho, Moscow, Idaho 83843.

The University of Idaho provides equal opportunity in education and employment on the basis of race, color, national origin, religion, sex, sexual orientation, age, disability, or status as a disabled veteran, Vietnam-era veteran. as required by state and federal laws.