



## Soft White Winter Wheat

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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 growing irrigated soft white winter wheat in southcentral Idaho. Production practices most closely represent those in Twin Falls County. 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 1,500-acre farm with 500 acres in winter wheat, 250 acres in other grain, 375 acres in potatoes or sugarbeets, 225 acres in dry beans, and 150 acres in corn. The farm uses a center pivot irrigation system and surface water delivered to the farm from an irrigation district. The district charges a flat fee per acre for water.

#### Tillage, Fertilization, Pest Control, and Irrigation

Winter wheat acreage is disked, roller harrowed, and planted in the fall. The crop is then custom combined and hauled to on-farm storage the following August. A custom operator applies fertilizer to the wheat acreage in the fall before planting and again in the spring. The farm operator performs weed control using tillage, cultivation, and herbicides. A post-emergence herbicide is applied in the spring for broadleaf weed control. No costs are included in this budget for insect control. Soft white winter wheat receives 16 inches of water during the growing season from approximately 32 irrigations (pivot rotations): 3 inches in

May, 7 inches in June, and 6 inches in July. Three inches of water applied the previous fall is also credited to the winter wheat, for a total of 19 inches.

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

Table 3 lists the tractors, trucks, and other equipment used for wheat, along with their operating and ownership costs. All machinery except trucks is valued at 75 percent of new prices. This adjustment reduces the machinery repair operating cost, and the depreciation and interest ownership costs on equipment by 25 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 Produce Wheat  
SCI Soft White Winter**

**EBB3-SWW-05**

	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>Gross Returns</b>					
Wheat	125.00	bu	2.95	368.75	_____
Total Gross Returns For Wheat				368.75	=====
<b>Operating Costs</b>					
Custom:					
Custom Fertilize	2.00	acre	5.70	11.40	_____
Custom Combine	1.00	acre	28.00	28.00	_____
Custom Hauling	125.00	bu	0.15	18.75	_____
Fertilizer:					
Dry Nitrogen	150.00	lb	0.39	58.50	_____
Dry P2O5	50.00	lb	0.23	11.50	_____
K2O	50.00	lb	0.22	11.00	_____
Seed:					
SWWW Seed	100.00	lb	0.14	14.00	_____
Irrigation:					
Irrigation Power	19.00	acin	1.39	26.41	_____
Labor (irrigation)	0.95	hr	8.75	8.31	_____
Water Assessment	1.00	acre	30.20	30.20	_____
Irrigation Repairs	19.00	acin	0.55	10.45	_____
Other:					
Crop Insurance	1.00	acre	7.00	7.00	_____
Pesticide:					
Achieve	0.50	lb	30.90	15.45	_____
Bronate	0.75	qt	12.50	9.38	_____
Labor (machine)	1.50	hrs	13.15	19.76	_____
Labor (non-machine)	0.29	hrs	7.70	2.23	_____
Fuel - Gas	1.69	gal	2.26	3.82	_____
Fuel - Diesel	4.86	gal	2.07	10.05	_____
Lube				2.08	_____
Machinery Repair				5.74	_____
Interest on Operating Capital @ 7.50%				12.25	_____
Total Operating Costs per Acre				316.28	=====
Net Returns Above Operating Costs				52.47	_____
<b>Cash Ownership Costs</b>					
General Overhead				8.00	_____
Land Rent				110.00	_____
Management Fee				18.00	_____
Property Taxes (machinery)				0.00	_____
Property Insurance				0.53	_____
Total Cash Ownership Costs per Acre				136.53	=====
<b>Non-Cash Ownership Costs (depreciation and interest)</b>					
Equipment				20.51	_____
Total Non-Cash Ownership Costs per Acre				20.51	=====
Total Costs per Acre				473.33	_____
Returns to Risk				-104.58	=====

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

**EBB3-SWW-05**

	Mar 04	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	
<b>Preharvest:</b>																			
Disk								5.51											
Fertilize								47.70					44.70						
Harrow								6.90											
Seed Hauling								2.91											
Plant								23.67											
Irrigate								5.48							5.48	12.79	10.96		
Crop Insurance														7.00					
Assessments														30.20					
Repairs														10.45					
Ground Spray															27.48				
General Pickup Use	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34						
<b>Total Preharvest Costs</b>	<b>1.34</b>	<b>1.34</b>	<b>1.34</b>	<b>1.34</b>	<b>1.34</b>	<b>1.34</b>	<b>1.34</b>	<b>93.51</b>	<b>1.34</b>	<b>1.34</b>	<b>1.34</b>	<b>1.34</b>	<b>44.70</b>	<b>47.65</b>	<b>32.96</b>	<b>12.79</b>	<b>10.96</b>		
<b>Harvest:</b>																			
Combine																			28.00
Crop Hauling																			18.75
<b>Total Harvest Costs</b>																			<b>46.75</b>
Interest on Operating Capital	0.01	0.02	0.03	0.03	0.04	0.05	0.06	0.64	0.65	0.66	0.67	0.68	0.96	1.25	1.46	1.54	1.61	1.90	
<b>Operating Costs per Acre</b>	<b>1.35</b>	<b>1.35</b>	<b>1.36</b>	<b>1.37</b>	<b>1.38</b>	<b>1.39</b>	<b>1.40</b>	<b>94.15</b>	<b>1.99</b>	<b>2.00</b>	<b>2.01</b>	<b>2.01</b>	<b>45.66</b>	<b>48.90</b>	<b>34.42</b>	<b>14.33</b>	<b>12.57</b>	<b>48.65</b>	
<b>Cash Ownership</b>																			
General Overhead	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67							
Land Rent	110.00																		
Management Fee	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50							
Property Insurance		0.53																	
<b>Cash Ownership Costs</b>	<b>112.17</b>	<b>2.70</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>	<b>2.17</b>							
<b>Total Cash Costs per Acre</b>	<b>113.51</b>	<b>4.05</b>	<b>3.53</b>	<b>3.54</b>	<b>3.55</b>	<b>3.55</b>	<b>3.56</b>	<b>96.32</b>	<b>4.16</b>	<b>4.16</b>	<b>4.17</b>	<b>4.18</b>	<b>45.66</b>	<b>48.90</b>	<b>34.42</b>	<b>14.33</b>	<b>12.57</b>	<b>48.65</b>	

**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 Costs/Hr.
					Cap. Rec.	Insur.	Taxes	Repairs	Fuel & Lube	Total Oper.		
4-wheeler	6500	10	1920	350	1.76	0.05	0.00	0.11	3.40	3.51	5.31	
Grain Drill - 12'	9700	12	1344	165	5.45	0.13	0.00	4.17	0.00	4.17	9.74	
Pickup - Used 3/4t	11000	8	3839	200	5.74	0.14	0.00	0.91	5.95	6.86	12.74	
Pickup 1 - 3/4 ton	37000	8	12913	300	12.89	0.31	0.00	3.59	10.40	13.99	27.20	
Pickup 2 - 3/4 ton	37000	8	12913	300	12.89	0.31	0.00	3.59	10.40	13.99	27.20	
Roller-harrow -16'	20000	15	1920	165	10.16	0.25	0.00	4.36	0.00	4.36	14.77	
Sprayer - 30'	3800	15	365	115	2.77	0.07	0.00	1.28	0.00	1.28	4.12	
Tandem Disk - 18'	22000	15	2112	130	14.20	0.35	0.00	4.06	0.00	4.06	18.61	
Tractor - 160hp	113000	15	21999	475	19.23	0.53	0.00	3.46	22.10	25.56	45.32	
Tractor - 95hp	68000	15	13238	400	13.75	0.38	0.00	1.76	11.11	12.87	27.00	
Truck 1 - 5 ton	55000	15	10708	400	11.12	0.31	0.00	7.35	11.90	19.25	30.68	

		Net Returns Per Acre Above Operating Costs For Wheat Yield (bu/acre)						
		87.50	100.00	112.50	125.00	137.50	150.00	162.50
Price (dollars/bu)	2.06	-130	-107	-83	-59	-35	-11	13
	2.36	-104	-77	-49	-21	6	34	62
	2.65	-79	-48	-16	15	46	77	109
	2.95	-52	-18	17	52	87	122	157
	3.25	-26	12	51	90	129	167	206
	3.54	-1	41	84	126	169	211	253
	3.83	25	70	116	162	208	254	300

		Net Returns Per Acre Above Cash Costs For Wheat Yield (bu/acre)						
		87.50	100.00	112.50	125.00	137.50	150.00	162.50
Price (dollars/bu)	2.06	-267	-243	-219	-195	-171	-148	-124
	2.36	-241	-213	-185	-158	-130	-103	-75
	2.65	-215	-184	-153	-122	-90	-59	-28
	2.95	-189	-154	-119	-84	-49	-14	21
	3.25	-163	-124	-85	-47	-8	31	70
	3.54	-137	-95	-53	-10	32	74	117
	3.83	-112	-66	-20	26	72	118	164

		Net Returns Per Acre Above Total Costs For Wheat Yield (bu/acre)						
		87.50	100.00	112.50	125.00	137.50	150.00	162.50
Price (dollars/bu)	2.06	-287	-264	-240	-216	-192	-168	-144
	2.36	-261	-234	-206	-178	-151	-123	-95
	2.65	-236	-205	-173	-142	-111	-80	-48
	2.95	-210	-175	-140	-105	-70	-35	0
	3.25	-183	-145	-106	-67	-28	10	49
	3.54	-158	-116	-73	-31	12	54	96
	3.83	-133	-87	-41	5	51	97	143

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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