



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 irrigated soft white winter wheat in southeastern Idaho. Production practices are based on surveys conducted in Bingham, Bonneville, Madison and Power 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 1,500-acre farm with 1,000 acres in grain and 500 acres in potatoes. The typical crop rotation is one year of potatoes followed by two years of grain. Dry peas, alfalfa, corn or an oil seed crop may substitute for grain. The farm uses a center pivot irrigation system and surface water delivered to the farm from an irrigation district. The irrigation district charges a flat fee per acre for water.

Tillage, Fertilization, Pest Control, and Irrigation

After the stubble from the preceding grain crop is chopped, the ground is irrigated, disked, plowed and packed, and planted in the fall. Wheat is harvested in August by a custom operator and hauled to storage. Fertilizer is applied in a split fall-spring application. Fertilizer is custom applied preplant in September, but the majority is custom applied postplant in April. A tank-mix herbicide to control broadleaf weeds is custom ground applied in May. No cost for insect control is included because treatment is infrequent and unpredictable. Soft white winter

wheat receives 13 inches of water during the growing season using approximately 30 irrigations (pivot rotations), 3 inches in May, 6 inches in June, and 4 inches in July. Three inches of water applied the previous fall is also credited to the winter wheat, for a total of 16 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 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. 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 machine 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 irrigation and non-machine labor are valued at \$8.75 and \$7.70, respectively. 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. 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 Wheat
SEI Soft White Winter**

EBB4-SWW-05

	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
Gross Returns					
Wheat	115.00	bu	3.05	350.75	_____
Total Gross Returns For Wheat				350.75	=====
Operating Costs					
Irrigation:					
Irrigation Power - cp	16.00	acin	1.39	22.24	_____
Labor (irrigation)	0.80	hr	8.75	7.00	_____
Water Assessment	1.00	acre	12.40	12.40	_____
Irrigation Repairs - cp	16.00	acin	0.55	8.80	_____
Custom:					
Custom Fertilize	2.00	acre	4.95	9.90	_____
Custom Ground Spray	1.00	acre	5.15	5.15	_____
Custom Combine	1.00	acre	26.00	26.00	_____
Custom Haul	115.00	bu	0.15	17.25	_____
Fertilizer:					
Dry Nitrogen	130.00	lb	0.39	50.70	_____
Dry P2O5	52.00	lb	0.24	12.48	_____
Seed:					
Wheat Seed - SWW	100.00	lb	0.14	14.00	_____
Other:					
Crop Insurance	1.00	acre	7.50	7.50	_____
Pesticide:					
Bronate	0.50	qt	9.60	4.80	_____
Harmony Extra	0.33	oz	14.20	4.69	_____
Labor (machine)	1.54	hrs	13.15	20.22	_____
Labor (non-machine)	0.29	hrs	7.70	2.23	_____
Fuel - Gas	0.19	gal	2.29	0.44	_____
Fuel - Diesel	8.91	gal	2.08	18.53	_____
Lube				2.85	_____
Machinery Repair				6.04	_____
Interest on Operating Capital @ 7.50%				9.42	_____
Total Operating Costs per Acre				262.64	=====
Net Returns Above Operating Costs				88.11	_____
Cash Ownership Costs					
General Overhead				7.00	_____
Land Rent				90.00	_____
Management Fee				17.50	_____
Property Taxes (machinery)				0.00	_____
Property Insurance				0.81	_____
Total Cash Ownership Costs per Acre				115.31	=====
Non-Cash Ownership Costs (depreciation and interest)					
Equipment				32.90	_____
Total Non-Cash Ownership Costs per Acre				32.90	=====
Total Costs per Acre				410.85	_____
Returns to Risk				-60.10	_____

Table 2. Monthly Summary of Cash Expenses per Acre

EBB4-SWW-05

	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	Total
Preharvest:														
Chop Straw	7.56													7.56
Disk	5.25													5.25
Irrigate	3.65	1.83								5.48	10.96	7.31		29.24
Fertilize		29.13							43.95					73.08
Plow		13.01												13.01
Seed Hauling									2.05					2.05
Plant									20.70					20.70
Crop Insurance									7.50					7.50
Assessments									12.40					12.40
Repairs									8.80					8.80
Ground Spray										14.64				14.64
General Pickup Use	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31		15.74
Total Preharvest Costs	17.78	45.28	1.31	1.31	1.31	1.31	1.31	1.31	96.71	21.43	12.28	8.62		209.96
Harvest:														
Combine													26.00	26.00
Crop Hauling													17.25	17.25
Total Harvest Costs													43.25	43.25
Interest on Operating Capital	0.11	0.39	0.40	0.41	0.42	0.43	0.44	0.44	1.05	1.18	1.26	1.31	1.58	9.42
Operating Costs per Acre	17.89	45.67	1.71	1.72	1.73	1.74	1.75	1.75	97.76	22.61	13.54	9.93	44.83	262.64
Cash Ownership														
General Overhead	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58		7.00
Land Rent									90.00					90.00
Management Fee	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46		17.50
Property Insurance									0.81					0.81
Cash Ownership Costs	2.04	2.04	2.04	2.04	2.04	2.04	2.04	92.04	2.86	2.04	2.04	2.04		115.31
Total Cash Costs per Acre	19.93	47.71	3.76	3.76	3.77	3.78	3.79	93.80	100.61	24.65	15.58	11.98	44.83	377.95

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.	Ownership Taxes	Repairs	Fuel & Lube	Total Oper.		
4-wheeler	6500	10	1920	225	2.74	0.07	0.00	0.07	3.45	3.52	6.33	
Grain Drill - 24'	22000	10	3891	85	26.21	0.57	0.00	3.84	0.00	3.84	30.62	
Moldboard Plow 5b	9700	15	931	125	6.51	0.16	0.00	2.94	0.00	2.94	9.61	
Offset Disk - 20'	22800	15	2189	100	19.15	0.47	0.00	3.50	0.00	3.50	23.13	
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	14.77	0.26	0.00	3.59	9.57	13.16	28.20	
Pickup 2 - 3/4 ton	37000	8	5000	300	14.77	0.26	0.00	3.59	9.57	13.16	28.20	
Straw Chopper	17000	12	2355	85	18.54	0.43	0.00	2.74	0.00	2.74	21.70	
Tractor - 160hp	113000	15	21999	260	35.07	0.97	0.00	1.89	22.21	24.10	60.14	
Tractor - 200hp	134000	15	26087	450	24.06	0.67	0.00	3.89	27.76	31.65	56.37	
Truck 1 - 5 ton	55000	15	10708	400	11.12	0.31	0.00	7.35	1.59	8.94	20.37	

Net Returns Per Acre Above Operating Costs For Wheat
Yield (bu/acre)

	80.50	92.00	103.50	115.00	126.50	138.00	149.50
2.13	-91	-67	-42	-18	7	31	56
2.44	-66	-38	-10	18	46	74	102
2.74	-42	-11	21	52	84	115	147
3.05	-17	18	53	88	123	158	193
3.35	7	46	84	123	161	200	238
3.66	32	74	116	158	200	242	285
3.96	56	102	147	193	238	284	329

Net Returns Per Acre Above Cash Costs For Wheat
Yield (bu/acre)

	80.50	92.00	103.50	115.00	126.50	138.00	149.50
2.13	-206	-182	-157	-133	-109	-84	-60
2.44	-182	-153	-125	-97	-69	-41	-13
2.74	-157	-126	-94	-63	-31	0	32
3.05	-132	-97	-62	-27	8	43	78
3.35	-108	-70	-31	7	46	84	123
3.66	-83	-41	1	43	85	127	169
3.96	-59	-14	32	77	123	169	214

Net Returns Per Acre Above Total Costs For Wheat
Yield (bu/acre)

	80.50	92.00	103.50	115.00	126.50	138.00	149.50
2.13	-239	-215	-190	-166	-141	-117	-92
2.44	-214	-186	-158	-130	-102	-74	-46
2.74	-190	-159	-127	-96	-64	-33	-1
3.05	-165	-130	-95	-60	-25	10	45
3.35	-141	-103	-64	-26	13	51	90
3.66	-116	-74	-32	10	52	94	136
3.96	-92	-47	-1	45	90	136	181

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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