



Spring Barley Cost-Return Budget (W-B-F Rotation) in Western Kansas

Department of Agricultural Economics



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The 1996 Federal Agricultural Improvement and Reform Act granted near-complete planting flexibility to Western Kansas grain producers. Planting flexibility together with advances in intensive wheat-summer crop-fallow systems has lead many producers to review their summer crop alternatives. Spring-planted barley, either in a rotation after wheat or as a replacement to failed winter wheat, holds promise as an alternative to grain sorghum, corn, sunflowers, or cane hay for some producers. Producers considering this crop should keep in mind that greenbug and Russian wheat aphid can be more frequent problems for spring barley than for winter wheat. Because of the lack of an established cash barley market in Western Kansas, this crop is likely best suited for diversified farms that include livestock feeding as an enterprise.

Expected Yields

Crop production costs per unit and net returns are highly dependent on yields. The following estimated budget includes three different yield levels, which are intended to represent expected yields for land of varying quality for a given level of management. Alternative expected yields can help producers compare the profitability of crop enterprises on farmland tracts with varying yield potentials. Land values and government payments have been adjusted for alternative yield levels in this budget. In customizing this budget to your farm, attention should be given to using land values representative of your farm's productive capacity.

Crop insurance was not included as an input expense in this budget because yields reflect an average of all years (good and bad). If crop insurance is included as an input expense, than an expected value for indemnity payments should be included in the returns section. Historically, MPCI indemnity payments have exceeded premiums due to government subsidies.

Variable and Fixed Costs, Return Factors

Variable costs such as fertilizer, repairs, and fuel-oil may vary with the level of production. The cost columns show the interest on the variable costs (Lines 1 through 15) for one-half year. Fixed costs do not vary with level of production and are incurred by virtue of owning assets such as land and machinery. Projections of net percentage return on investment permit comparisons to be made among alternative enterprises or other investments.

Table 1. Factors Used for Cost-Return Budget

Item	Yield Level (bu)			
	40	55	70	
Fertilizer:				
N (Anhy.)	35	50	62	\$0.15/lb
N (Dry)	12	17	21	\$0.24/lb
P	17	24	30	\$0.18/lb
K	0	0	0	\$0.14/lb
Lime	0	0	0	\$0.01/lb
Seed, lbs.	72	84	96	
Seed price, \$/lb.	\$0.166	\$0.166	\$0.166	
Labor hours	1.05	1.10	1.15	
Labor price/hour				\$10.80
Land value/acre*	\$398	\$498	\$598	
Land interest rate				6.00%
Land real estate tax rate				0.50%
Machinery investment**				\$191
Machinery life				10 yrs
Salvage value				35%
Interest rate on machinery				10.00%
Insurance rate on machinery				0.25%
Interest on variable costs				10.00%

*All land costs were computed, and then multiplied by a factor of 1.5 to account for fallow land (two crops every 3 years).

**Investment required/crop and fallow acres.

**COST-RETURN PROJECTION — SPRING BARLEY — (W-B-F ROTATION)
WESTERN KANSAS**

	Yield Level (bu)			Your
	40	55	70	Farm
VARIABLE COSTS PER ACRE:¹				
1. Labor	\$ 11.35	\$ 11.88	\$ 12.41	
2. Seed	11.95	13.94	15.94	
3. Herbicide	7.38	7.38	7.38	
4. Insecticide				
5. Fertilizer and Lime	11.19	15.90	19.74	
6. Fuel and Oil	8.64	9.05	9.46	
7.				
8. Machinery and Equipment Repairs	11.41	11.95	12.49	
9.				
10. Crop Insurance				
11. Drying				
12. Custom Hire				
13. Crop Consulting				
14. Miscellaneous	5.00	5.00	5.00	
15. Interest on 1/2 Variable Costs	3.35	3.76	4.12	
A. TOTAL VARIABLE COSTS	\$ 70.27	\$ 78.86	\$ 86.54	
FIXED COSTS PER ACRE:¹				
16. Real Estate Taxes	2.99	3.74	4.49	
17. Interest on Land ²	35.82	44.82	53.82	
18. Rent for Rented Land				
19. Depreciation on Crop Machinery	12.42	12.42	12.42	
20. Interest on Crop Machinery ³	12.89	12.89	12.89	
21.				
22.				
23. Insurance on Machinery	0.48	0.48	0.48	
B. TOTAL FIXED COSTS	\$ 64.59	\$ 74.34	\$ 84.09	
C. TOTAL COSTS (A + B)	\$134.86	\$153.20	\$170.63	
D. YIELD PER ACRE	40	55	70	
E. PRICE PER BUSHEL⁴	\$ 2.26	\$ 2.26	\$ 2.26	
F. NET GOVERNMENT PAYMENT⁴	\$ 8.67	\$ 9.42	\$ 10.17	
G. INDEMNITY PAYMENTS	\$	\$	\$	
H. MISCELLANEOUS INCOME	\$	\$	\$	
I. RETURNS PER ACRE [(D × E) + F + G + H]	\$ 99.07	\$133.72	\$168.37	
J. RETURNS OVER VARIABLE COSTS (I – A)	\$ 28.80	\$ 54.86	\$ 81.83	
K. RETURNS OVER TOTAL COSTS (I – C)	\$ -35.79	\$ -19.48	\$ -2.26	
L. VARIABLE COSTS PER BUSHEL (A ÷ D)	\$ 1.76	\$ 1.43	\$ 1.24	
M. TOTAL COSTS PER BUSHEL (C ÷ D)	\$ 3.37	\$ 2.79	\$ 2.44	
N. NET RETURN ON INVESTMENT				
[(K+15+17+20) ÷ INVESTMENT] ⁵	2.06%	4.48%	6.30%	

¹Totals were derived using information listed in Table 1. ²Assumes interest rate shown in Table 1. ³Assumes one-half the average investment [(initial investment + salvage value) ÷ 2] at the interest rate shown in Table 1. ⁴See MF-1013 "Prices for Crop and Livestock Cost-Return Budgets" and MF-2236 "Government Program Payments for Crop Cost Return Budgets" for additional information on crop prices and program payments. ⁵Investment equals total value of all fixed assets shown in Table 1.

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