



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

Department of Agricultural Economics



Kansas State University Agricultural Experiment Station and Cooperative Extension Service

James D. Sartwelle, III
Extension Agricultural Economist,
SW

Curtis R. Thompson
Extension Specialist,
Crops and Soils, SW

Daniel M. O'Brien
Extension Agricultural Economist,
NW

The 1996 Federal Agricultural Improvement and Reform Act grants near-complete planting flexibility to Western Kansas grain producers. This legislative change, along with advances in intensive wheat-summer crop-fallow systems, has many producers reviewing 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. Due to the lack of a liquid cash grain market for barley in Western Kansas, this crop is likely best suited for diversified farms that include livestock feeding as an enterprise.

Yield Goals

Cost per bushel and net returns in crop production are highly dependent on yields. The following estimated budget includes three different yield levels. Yield goals vary for a number of reasons such as soil type or land quality, historical weather patterns, input levels, and management. Budgeting for alternative yield goals can help producers compare the profitability of crop enterprises on farmland tracts with varying yield potentials. Multi-peril crop insurance expenses at a 65 percent yield level are included in this budget as a cost of managing production risk in an area prone to great yield variability.

Variable and Fixed Costs, Return Factors

Variable costs, such as fertilizer, repairs and fuel-oil, are costs that may vary with 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. Land values have been adjusted for alternative yield goals. In customizing this

budget to fit your farm, attention should be given to using land values representative of your farm's productive capacity. 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.)	45	70	95	\$0.17/lb
N (Dry)	0	0	0	\$0.31/lb
P	30	30	30	\$0.28/lb
K	0	0	0	\$0.13/lb
Lime	0	0	0	\$0.005/lb
Seed, lbs	72	84	96	
Seed price, \$/lb	\$0.10	\$0.10	\$0.10	
Labor hours	1.15	1.20	1.25	
Labor price/hour				\$10.80
Land value/acre*	\$420	\$525	\$630	
Land interest rate				6.00%
Land real estate tax rate				0.50%
Machinery investment**				\$191
Machinery life				10 yrs
Salvage value				35.00%
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 Farm
	40	55	70	
VARIABLE COSTS PER ACRE: ¹				
1. Labor	\$ 12.38	\$ 12.96	\$ 13.54	
2. Seed	7.49	8.74	9.98	
3. Herbicide	7.28	7.28	7.28	
4. Insecticide				
5. Fertilizer and Lime	16.05	20.30	24.55	
6. Fuel and Oil	6.18	6.47	6.77	
7.				
8. Machinery and Equipment Repairs	11.84	12.40	12.96	
9.				
10. Crop Insurance	5.58	5.54	7.10	
11. Drying				
12. Custom Hire				
13. Crop Consulting				
14. Miscellaneous	5.00	5.00	5.00	
15. Interest on 1/2 Variable Costs	3.59	3.93	4.36	
A. TOTAL VARIABLE COSTS	\$ 75.39	\$ 82.63	\$ 91.54	
FIXED COSTS PER ACRE: ¹				
16. Real Estate Taxes	3.15	3.94	4.73	
17 Interest on Land ²	37.80	47.25	56.70	
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	\$ 66.74	\$ 76.97	\$ 87.21	
C. TOTAL COSTS (A + B)	\$142.12	\$159.60	\$178.75	
D. YIELD PER ACRE	40	55	70	
E. PRICE PER BUSHEL ⁴	\$ 2.80	\$ 2.80	\$ 2.80	
F. NET GOVERNMENT PAYMENT ⁴	\$ 12.18	\$ 13.23	\$ 14.29	
G. INDEMNITY PAYMENTS	\$	\$	\$	
H. MISCELLANEOUS INCOME	\$	\$	\$	
I. RETURNS PER ACRE [(D × E) + F + G + H]	\$ 124.18	\$ 167.23	\$210.29	
J. RETURNS OVER VARIABLE COSTS (I – A)	\$ 48.79	\$ 84.60	\$118.75	
K. RETURNS OVER TOTAL COSTS (I – C)	\$-17.94	\$ 7.63	\$ 31.54	
L. VARIABLE COSTS PER BUSHEL (A ÷ D)	\$ 1.88	\$ 1.50	\$ 1.31	
M. TOTAL COSTS PER BUSHEL (C ÷ D)	\$ 3.55	\$ 2.90	\$ 2.55	
N. NET RETURN ON INVESTMENT				
[(K+15+17+20) ÷ INVESTMENT] ⁵	4.43%	7.33%	9.29%	

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.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan, Kansas

MF-2097 (Revised)

October 1997

Issued in furtherance of Cooperative Extension Work, acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, Richard D. Wootton, Associate Director. All educational programs and materials available without discrimination on the basis of race, color, national origin, sex, age, or disability.

File Code: Farm Management 3-1

10-97—1.5M