KANSAS FARM MANAGEMENT & MARKETING HANDBOOK

KSU Farm Management Guide MF-257

# Wheat Cost-Return Budget (W-F Rotation) in Western Kansas

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The traditional wheat-fallow rotation has been a mainstay crop enterprise for many years in Western Kansas. The fallow period in this rotation has traditionally served as a time for accumulating soil moisture to be used by the following wheat crop. Many producers in this region are now using more intensive wheat-spring crop-fallow rotations in an effort to increase crop income and take advantage of increased cropping flexibility in the farm program. However, the traditional wheat-fallow rotation still has a place for farmers who are uncomfortable with the more intensive crop rotations due either to the increased management required to make such intensive cropping systems work, the additional input costs of the intensive systems, or other special soil type/field conditions that limit the effectiveness of the more intensive rotations on their farms.

## Yield Level

Cost per bushel and net returns in crop production are highly dependent on yields. The following estimated budget includes three different yield levels. The three yield levels represent expected yields associated with variations in land quality, weather, input levels, and management. Budgeting for alternative expected yields can help producers compare the profitability of crop enterprises on farmland tracts with varying yield potentials. Crop insurance was not included as an input expense because yields reflect an average of all years (good and bad). If crop insurance is included as an input expense, then 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 are costs that 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. Land values have been adjusted for alternative yield levels in this budget. 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**

| | Yield Level (bu) | | | |
|---|---|---|---|---|
| **Item** | **28** | **36** | **44** | |
| Fertilizer: | | | | |
| N (Anhy.) | 30 | 50 | 60 | $0.11/lb |
| N (Dry) | 0 | 0 | 0 | $0.20/lb |
| P | 30 | 30 | 30 | $0.22/lb |
| K | 0 | 0 | 0 | $0.14/lb |
| Lime | 0 | 0 | 0 | $0.01/lb |
| Seed, lbs. | 45 | 55 | 65 | |
| Seed price, $/lb. | $0.078 | $0.078 | $0.078 | |
| Labor hours | 1.17 | 1.20 | 1.23 | |
| Labor price/hour | | | | $10.80 |
| Land value/acre* | $393 | $492 | $590 | |
| Land interest rate | | | | 6.00% |
| Land real estate tax rate | | | | 0.50% |
| Machinery investment** | | | | $190 |
| Machinery life | | | | 10 yrs |
| Salvage value | | | | 35% |
| Interest rate on machinery | | | | 9.00% |
| Insurance rate on machinery | | | | 0.25% |
| Interest on variable costs | | | | 9.00% |

*All land costs were computed and then multiplied by a factor of 2 to account for fallow land.*
**Investment required per crop and fallow acres.*

## COST-RETURN PROJECTION—WHEAT (W-F ROTATION)—WESTERN KANSAS

| | Yield Level (bu) 28 | 36 | 44 | Your Farm |
|---|---|---|---|---|
| VARIABLE COSTS PER ACRE:[1] | | | | |
| 1. Labor | $ 12.66 | $ 12.96 | $ 13.26 | |
| 2. Seed | 3.51 | 4.29 | 5.07 | |
| 3. Herbicide | 15.01 | 15.01 | 15.01 | |
| 4. Insecticide | | | | |
| 5. Fertilizer and Lime | 9.90 | 12.10 | 13.20 | |
| 6. Fuel and Oil | 5.20 | 5.33 | 5.45 | |
| 7. | | | | |
| 8. Machinery and Equipment Repairs | 10.49 | 10.74 | 10.99 | |
| 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 | 2.78 | 2.94 | 3.06 | |
| A. TOTAL VARIABLE COSTS | $ 64.56 | $ 68.37 | $ 71.03 | |
| FIXED COSTS PER ACRE:[1] | | | | |
| 16. Real Estate Taxes | 3.93 | 4.92 | 5.90 | |
| 17 Interest on Land[2] | 47.16 | 59.04 | 70.80 | |
| 18. Rent for Rented Land | | | | |
| 19. Depreciation on Crop Machinery | 12.35 | 12.35 | 12.35 | |
| 20. Interest on Crop Machinery[3] | 11.54 | 11.54 | 11.54 | |
| 21. | | | | |
| 22. | | | | |
| 23. Insurance on Machinery | 0.48 | 0.48 | 0.48 | |
| B. TOTAL FIXED COSTS | $ 75.46 | $ 88.33 | $ 101.07 | |
| C. TOTAL COSTS (A + B) | $ 140.02 | $156.70 | $ 172.10 | |
| D. YIELD PER ACRE | 28 | 36 | 44 | |
| E. PRICE PER BUSHEL[4] | $ 3.03 | $ 3.03 | $ 3.03 | |
| F. NET GOVERNMENT PAYMENT[4] | $ 10.72 | $ 11.65 | $ 12.58 | |
| G. INDEMNITY PAYMENTS | $ | $ | $ | |
| H. MISCELLANEOUS INCOME | $ | $ | $ | |
| I. RETURNS PER ACRE [(D × E) + F + G + H] | $ 95.56 | $120.73 | $ 145.90 | |
| J. RETURNS OVER VARIABLE COSTS (I – A) | $ 31.00 | $ 52.36 | $ 74.87 | |
| K. RETURNS OVER TOTAL COSTS (I – C) | $ –44.46 | $–35.97 | $ –26.20 | |
| L. VARIABLE COSTS PER BUSHEL (A ÷ D) | $ 2.31 | $ 1.90 | $ 1.61 | |
| M. TOTAL COSTS PER BUSHEL (C ÷ D) | $ 5.00 | $ 4.35 | $ 3.91 | |
| N. NET RETURN ON INVESTMENT [(K+15+17+20) ÷ INVESTMENT][5] | 1.74% | 3.20% | 4.32% | |

*[1]Totals were derived using information listed in Table 1. [2]Assumes interest rate shown in Table 1. [3]Assumes one-half the average investment [(initial investment + salvage value) ÷ 2] at the interest rate shown in Table 1. [4]See 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. [5]Investment equals total value of all fixed assets shown in Table 1.*

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