KANSAS FARM MANAGEMENT & MARKETING HANDBOOK

KSU Farm Management Guide MF-2159

Dryland Grain Sorghum in North Central Kansas

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Cost-Return Projections

The cost-return projection estimates the cost of producing dryland grain sorghum in north central Kansas. Its purpose is to provide estimated costs and returns for forward farm planning. Production costs for individual farmers will vary considerably due to the amounts of fertilizer and chemicals applied, the type and amount of farm machinery owned, and land costs.

Yield Levels

Cost per bushel and net returns in crop production are highly dependent on yields. The following estimated budget includes three different yield levels. Yield levels vary for a number of reasons such as soil type/land quality, weather, input levels, and management. The three yield levels included in this estimated budget reflect yield variability due to input levels and management as opposed to land quality since land values are held constant. Budgeting at multiple yield levels can help producers examine the financial risk of a crop enterprise that is directly related to production risk.

Variable Costs

Variable costs are costs that vary with level of production such as fertilizer, repairs, and fuel oil. Labor requirements include time for management and marketing, whether operator or hired labor. Interest on variable costs is estimated by using one-half of the accumulated variable costs for the year.

Fixed Costs

Fixed costs do not vary with level of production and are incurred by virtue of owning assets such as land and machinery. If the land is rented, use line 17 in lieu of lines 15 and 16.

Machinery investment was estimated for an average size farm to meet tillage, planting, and harvest requirements. Interest on machinery was estimated on one-half the original cost plus salvage value of machinery.

Profit and Return Factors

Net return on investment is the percentage return on investment. This measure enables comparisons to be made between other enterprises as well as other investment alternatives. Asset turnover is the percentage of investment recovered by total returns. Inverting this measure allows different enterprises to be compared on the basis of capital required to generate a dollar of gross income.

Table 1. Factors Used for Cost-Return Budget

	Yield Level (bu)			
Item	**50**	**70**	**90**	
Fertilizer:				
N (Anhy.)	50	50	70	$0.19/lb
N (Dry)	10	10	10	$0.29/lb
P	25	25	25	$0.27/lb
K	15	15	15	$0.13/lb
Lime	0	0	0	$0.01/lb
Seed, lbs	3	3	3	
Seed price, $/lb	$0.80	$1.00	$1.20	
Labor Hours	2.15	2.15	2.15	
Labor Price/Hour				$9.00
Land Value/Acre				$630.00
Land Interest Rate				6.00%
Machinery Investment				$235.00
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%

COST-RETURN PROJECTION—GRAIN SORGHUM—NORTH CENTRAL KANSAS

	Yield Level (bu)			Your Farm
	50	70	90	
VARIABLE COSTS PER ACRE:				
1. Labor (2.15 × $9.00 per hr)	$19.35	$19.35	$19.35	
2. Seed (3.0 lbs × $_____ per lb)	2.40	3.00	3.60	
3. Herbicide and Insecticide	14.41	25.16	25.16	
4. Fertilizer and Lime	21.10	21.10	24.90	
5. Fuel and Oil	8.10	8.35	8.60	
6.				
7. Machinery & Equipment Repairs	12.00	12.00	12.00	
8.				
9. Crop Insurance	3.60	3.60	3.60	
10. Drying	5.00	7.00	9.00	
11. Custom Hire				
12. Crop Consulting				
13. Miscellaneous	5.00	5.00	5.00	
14. Interest on ½ Variable Costs @ 10%	4.55	5.23	5.56	
A. TOTAL VARIABLE COSTS	$95.51	$109.79	$116.77	
FIXED COSTS PER ACRE:				
15. Real Estate Taxes @ .5%	3.15	3.15	3.15	
16. Interest on Land ($630/A × 6%)[1]	37.80	37.80	37.80	
17. Rent for Rented Land				
18. Depreciation on Crop Machinery	15.28	15.28	15.28	
19. Interest on Crop Machinery[2] @10%	15.86	15.86	15.86	
20.				
21.				
22. Insurance on Machinery @ .25%	0.59	0.59	0.59	
B. TOTAL FIXED COSTS	$72.68	$72.68	$72.68	
C. TOTAL COSTS (A + B)	$168.18	$182.46	$189.45	
D. YIELD PER ACRE	50	70	90	
E. PRICE PER BUSHEL	$2.15	$2.15	$2.15	
F. NET GOVERNMENT PAYMENT[1]	$14.03	$19.64	$25.25	
G. RETURNS PER ACRE ((D × E) + F)	$121.53	$170.14	$218.75	
H. RETURNS OVER VARIABLE COSTS (G-A)	$26.02	$60.35	$101.98	
I. RETURNS OVER TOTAL COSTS (G-C)	($46.66)	($12.33)	$29.30	
J. VARIABLE COSTS PER BUSHEL (A ÷ D)	$1.91	$1.57	$1.30	
K. FIXED COSTS PER BUSHEL (B ÷ D)	$1.45	$1.04	$0.81	
L. TOTAL COSTS PER BUSHEL (C ÷ D)	$3.36	$2.61	$2.10	
M. ASSET TURNOVER (G ÷ INVESTMENT)[4]	14.05%	19.67%	25.29%	
N. NET RETURN ON INVESTMENT ((I+14+16+19) ÷ INVESTMENT)[4]	1.34%	5.38%	10.23%	

[1]*Assumes interest rate shown in Table 1.*
[2]*Assumes one-half the (original cost plus salvage value) at the interest rate shown in Table 1.*
[3]*Net government payment equals yield per acre (D) times expected deficiency payment minus prorated cost of set-aside acres. Based on 15% flex acres and 5% ARP. The price used was a five-year average price. The twelve month national average price for the crop year. The 1995 farm program may have major changes.*
[4]*Investment equals total value of all fixed assets shown in Table 1.*

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