

Center-Pivot-Irrigated Dry-Edible Bean Cost-Return Budget in Western Kansas

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Cost-Return Budget

Dry-edible bean production in Kansas is mostly concentrated in the northwest and west central irrigated areas of the state. Since 1990, yields under irrigation have ranged from 14 to 30 hundredweight (cwt) per acre. While the particular variety of bean grown is an important factor in achieving optimum yield and quality, producers should first decide which market class of dry edible bean to grow – pinto, great northern, kidney, or navy. This decision will depend on local market availability, costs of production, yield potential, and prices available for the specific market classes. Kansas producers grow primarily pinto beans, with a limited amount of great northern and small white beans produced. The quantity and quality of dry-edible beans is highly dependent upon environmental conditions and the production and pest management practices used to produce the crop.

Dry-edible bean prices are highly volatile. Average annual selling prices for Kansas growers during the 1990 to 91 through 2001 to 02 marketing years have ranged from approximately \$15 to \$28 per cwt. Prices have been above \$20 per cwt three times during this period (in 1993 to 94, 1996 to 97, and 2001 to 02). To manage price risk with this crop, producers may consider forward contracting a portion of their production.

Table 1. Production Inputs — Center-Pivot-Irrigated Dry-Edible Bean

Item	Yield Level (lbs)			
	1,500	2,000	2,500	
Seed, lbs	65	65	65	\$0.48/lb
Fertilizer:				
N (anhydrous)	0	0	0	\$0.29/lb
N	53	71	89	\$0.50/lb
P	21	28	35	\$0.39/lb
K	0	0	0	\$0.23/lb
Lime	0	0	0	\$0.01/lb
Herbicide				
Prowl	2.4	2.4	2.4	\$3.03/pt
Insecticide / Fungicide				
Champ	2.0	2.0	2.0	\$3.44/pt
Bravo Weather Stik	1.4	1.4	1.4	\$5.96/pt
Irrigation water, in	13	15	17	\$4.80/in

Table 2. Machinery and Land Resources — Center-Pivot-Irrigated Dry-Edible Bean

Item	Yield Level (lbs)			Custom Rate
	1,500	2,000	2,500	
Tillage/Planting/Chemical Applications:				
Chisel	1	1	1	\$9.21/a
Disk	1	1	1	\$7.88/a
Field cultivate	1	1	1	\$7.46/a
Plant	1	1	1	\$10.45/a
Anhydrous application	1	1	1	\$6.83/a
Fertilizer application	0	0	0	\$4.20/a
Herbicide application	2	2	2	\$4.45/a
Insecticide / fungicide application	1.2	1.2	1.2	\$4.56/a
Harvest				
Base charge	1	1	1	\$19.78/a
Extra charge for yields exceeding	1200	1200	1200	\$0.002/cwt
Hauling	1,500	2,000	2,500	\$0.003/cwt
Non-machinery labor	0.87	0.88	0.89	\$10.00/hr
Irrigation labor	0.50	0.50	0.50	\$10.00/hr
Land charge/rent	\$40.00	\$50.00	\$60.00	
Interest on capital				8.5%
Irrigation Equipment				
Well, pump and gearhead value	Investment, \$/a		Years	Salvage value
Power unit and meter	\$424.00		25	0%
Irrigation system	\$98.00		7	0%
	\$476.00		25	25%

Income Per Acre

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

Costs Per Acre

Production costs at the three production levels are shown on lines 1 through 13. Kansas Custom Rates for specific field operations are used to represent fuel and labor costs as well as machinery repair, depreciation, and interest expenses in these budgets. Table 1 identifies the typical seed, fertilizer, herbicide, insecticide, and irrigation water requirements (rate and cost/unit) for center-pivot-irrigated dry-edible beans. Herbicide requirements include both pre-crop and in-crop treatments. Table 2 outlines the machinery, irrigation equipment, and land resources used for center-pivot-irrigated dry-edible beans. Each tillage, planting, and harvest operation is identified.

COST-RETURN PROJECTION — CENTER-PIVOT-IRRIGATED DRY-EDIBLE BEANS

	Yield Level (lbs)			Your Farm
	1,500	2,000	2,500	
INCOME PER ACRE				
A. Yield per acre	1,500	2,000	2,500	_____
B. Price per hundredweight	\$ 28.00	\$ 28.00	\$ 28.00	_____
C. Net government payment.....	\$ 29.92	\$ 32.53	\$ 35.13	_____
D. Indemnity payments.....	\$ _____	\$ _____	\$ _____	_____
E. Miscellaneous income	\$ _____	\$ _____	\$ _____	_____
F. Returns/acre ((A × B) + C + D + E)	\$ 449.92	\$ 592.53	\$ 735.13	_____
COSTS PER ACRE				
1. Seed	\$ 31.20	\$ 31.20	\$ 31.20	_____
2. Herbicide.....	7.27	7.27	7.27	_____
3. Insecticide / Fungicide	15.22	15.22	15.22	_____
4. Fertilizer and Lime.....	34.59	46.28	57.98	_____
5. Crop Consulting.....	6.50	6.50	6.50	_____
6. Crop Insurance	_____	_____	_____	_____
7. Drying	_____	_____	_____	_____
8. Miscellaneous	10.00	10.00	10.00	_____
9. Custom Hire / Machinery Expense	76.63	77.64	78.66	_____
10. Non-machinery Labor	8.66	8.77	8.89	_____
11. Irrigation	_____	_____	_____	_____
a. Labor.....	5.00	5.00	5.00	_____
b. Fuel and Oil	62.40	72.00	81.60	_____
c. Repairs and Maintenance	4.29	4.95	5.61	_____
d. Depreciation on Equipment and Well.....	45.24	45.24	45.24	_____
e. Interest on Equipment.....	47.47	47.47	47.47	_____
12. Land Charge / Rent	40.00	50.00	60.00	_____
G. SUB TOTAL.....	\$ 394.47	\$ 427.55	\$ 460.64	_____
13. Interest on ½ Nonland Costs.....	11.12	12.11	13.09	_____
H. TOTAL COSTS	\$ 405.59	\$ 439.66	\$ 473.73	_____
I. RETURNS OVER COSTS (F - H).....	\$ 44.33	\$ 152.86	\$ 261.40	_____
J. TOTAL COSTS/CWT ((H ÷ A) × 100)	\$ 27.04	\$ 21.98	\$ 18.95	_____
K. RETURN TO ANNUAL COST (I + 13) ÷ G	14.06%	38.58%	59.59%	_____

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