

Center-Pivot-Irrigated Soybean Cost-Return Budget

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Variety development has led to new, higher-yielding soybean varieties that respond well to irrigation. Another advantage of irrigated soybeans is that they are less input intensive and have lower production costs than some alternative irrigated crops. The addition of soybean processing plants in western Kansas offers producers a direct market and improved basis opportunities for their soybeans.

Income Per Acre

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 potential. Land values and government payments have been adjusted for alternative yield levels in the budgets. In customizing a budget to your farm, attention should be given to using land values representative of your farm's productive capacity.

Price per bushel represents an expected harvest price in Scott City, Kan., accounting for government marketing loan price support levels. Soybean producers in other regions of

Table 1. Production Inputs — Center Pivot Irrigated Soybean

Item	Yield Level (bu)			
	45	55	65	
Seed, 1,000/acre*	135	150	150	\$0.16/1,000
Fertilizer:				
N (anhydrous)	0	0	0	\$0.16/lb
N	0	0	0	\$0.23/lb
P	39	48	56	\$0.21/lb
K	0	0	0	\$0.14/lb
Lime	0	0	0	\$0.01/lb
Herbicide				
Roundup	1.0	1.0	1.0	\$10.53/qt
+ Adjuvants	1.0	1.0	1.0	\$1.00/ac
Roundup	1.0	1.0	1.0	\$10.53/qt
+ Adjuvants	1.0	1.0	1.0	\$1.00/ac
Insecticide / Fungicide				
Irrigation water, in	13	16	18	\$3.72/in

* Roundup Ready, seeding rate is based on planting in 30" rows, rates need to be increased if drilled.

Table 2. Machinery and Land Resources — Center-Pivot Irrigated Soybean

ITEM	Yield Level (bu)			
	45	55	65	
Tillage/Planting/Chemical Applications:				
Chisel	1	1	1	\$6.58/ac
Disk	1	1	1	\$5.60/ac
Field cultivate	1	1	1	\$5.74/ac
Plant	1	1	1	\$8.57/ac
Anhydrous application	0	0	0	\$5.23/ac
Fertilizer application	0	0	0	\$3.64/ac
Herbicide application	2	2	2	\$3.61/ac
Insecticide / fungicide application	0	0	0	\$3.66/ac
Harvest				
Base charge	1	1	1	\$19.47/ac
Extra charge for yields exceeding	28	28	28	\$0.122/bu
Hauling	45	55	65	\$0.118/bu
Non-machinery labor	0.50	0.50	0.50	\$10.00/hr
Irrigation labor	0.50	0.50	0.50	\$10.00/hr
Land value/acre	\$589	\$736	\$883	6.00%
Interest on capital				8.0%
Irrigation Equipment	Investment, \$/ac		Years	Salvage value
Well, pump and gearhead value	\$317.42		15	0%
Power unit and meter	\$41.27		7	0%
Irrigation system	\$360.90		10	0%

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western Kansas should use an expected price that is representative for their location.

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 soybeans. Herbicide requirements include both pre-crop and in-crop treat-

ments. Table 2 outlines the machinery, irrigation equipment, and land resources used for center-pivot-irrigated soybeans. Each tillage, planting, and harvest operation is identified.

Irrigation Costs

Any land preparation costs are included with the land charge. Capital requirements for sprinkler systems will run \$20,000 to \$40,000 higher than flood irrigation systems. Price of the energy source and Total Dynamic Head (TDH) are the major factors affecting pumping costs. See MF-836, *Irrigation Capital Requirements and Energy Costs*, for an explanation of differences in capital costs, TDH, and examples of pumping costs for natural gas, diesel, electricity and propane.

COST-RETURN PROJECTION — CENTER-PIVOT-IRRIGATED SOYBEANS

	Yield Level (bu)			Your
	45	55	65	Farm
INCOME PER ACRE				
A. Yield per acre	45	55	65	
B. Price per bushel	\$ 5.03	\$ 5.03	\$ 5.03	
C. Net government payment	\$ 14.76	\$ 16.05	\$ 17.33	
D. Indemnity payments	\$	\$	\$	
E. Miscellaneous income	\$	\$	\$	
F. Returns/acre ((A × B) + C + D + E)	\$ 241.11	\$ 292.70	\$ 344.28	
COSTS PER ACRE				
1. Seed	\$ 21.60	\$ 24.00	\$ 24.00	
2. Herbicide	23.06	23.06	23.06	
3. Insecticide / Fungicide				
4. Fertilizer and Lime	8.19	10.08	11.76	
5. Crop Consulting	6.25	6.25	6.25	
6. Crop Insurance				
7. Drying				
8. Miscellaneous	10.00	10.00	10.00	
9. Custom Hire / Machinery Expense	60.51	62.91	65.31	
10. Non-machinery Labor	5.00	5.00	5.00	
11. Irrigation				
a. Labor	5.00	5.00	5.00	
b. Fuel and Oil	48.36	59.52	66.96	
c. Repairs and Maintenance	4.29	5.28	5.94	
d. Depreciation on Equipment and Well	63.15	63.15	63.15	
e. Interest on Equipment	16.09	16.09	16.09	
12. Land Charge / Rent	35.34	44.16	52.98	
G. SUB TOTAL	\$ 306.83	\$ 334.49	\$ 355.49	
13. Interest on 1/2 Nonland Costs	10.86	11.61	12.10	
H. TOTAL COSTS	\$ 317.69	\$ 346.10	\$ 367.59	
I. RETURNS OVER COSTS (F - H)	\$ -76.58	\$ -53.41	\$ -23.31	
J. TOTAL COSTS/BUSHEL (H ÷ A)	\$ 7.06	\$ 6.29	\$ 5.66	
K. RETURN TO ANNUAL COST (I + 13) ÷ G	-21.42%	-12.49%	-3.15%	

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