

Flood-Irrigated Wheat Cost-Return Budget

Department of Agricultural Economics



Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Troy J. Dumler
Agricultural Economist, SW

Curtis R. Thompson
Crops and Soils, SW

Daniel M. O'Brien
Agricultural Economist, NW

Roger Stockton
Crops and Soils, NW

The following budget provides cost and return estimates for flood-irrigated wheat in western Kansas. In 2000, 68 percent of harvested irrigated wheat acreage in Kansas was in the southwest area (349,000 acres), with 43,000 and 63,000 acres in northwest and west central Kansas, respectively. This crop enterprise is particularly suited for low-volume irrigation systems in the region.

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

Table 1. Production Inputs — Flood-Irrigated Wheat

Item	Yield Level (bu)			
	45	60	75	
Seed, lbs	75	90	120	\$0.08/lb
Fertilizer:				
N (anhydrous)	79	105	131	\$0.16/lb
N	0	0	0	\$0.23/lb
P	25	33	42	\$0.21/lb
K	0	0	0	\$0.14/lb
Lime	0	0	0	\$0.01/lb
Herbicide				
Ally	0.1	0.1	0.1	\$24.24/oz
+ Banvel	4.0	4.0	4.0	\$0.72/oz
Insecticide / Fungicide				
Irrigation water, in	12	12	12	\$3.22/in

Table 2. Machinery and Land Resources — Flood-Irrigated Wheat

ITEM	Yield Level (bu)			
	45	60	75	
Tillage/Planting/Chemical Applications:				
Disk	2	2	2	\$5.60/ac
Field cultivate	1	1	1	\$5.74/ac
Bed/furrow	1	1	1	\$6.00/ac
Drill	1	1	1	\$5.83/ac
Anhydrous application	1	1	1	\$5.23/ac
Fertilizer application	0	0	0	\$3.64/ac
Herbicide application	1	1	1	\$3.61/ac
Insecticide / fungicide application	0	0	0	\$3.66/ac
Harvest				
Base charge	1	1	1	\$13.20/ac
Extra charge for yields exceeding	20	20	20	\$0.130/bu
Hauling	45	60	75	\$0.127/bu
Non-machinery labor	0.50	0.50	0.50	\$10.00/hr
Irrigation labor	1.00	1.00	1.00	\$10.00/hr
Land value/acre	\$643	\$804	\$965	6.00%
Interest on capital				8.0%
Irrigation Equipment	Investment, \$/ac		Years	Salvage value
Well, pump and gearhead value	\$250.00		15	0%
Power unit and meter	\$32.50		7	0%
Irrigation system	\$32.86		10	0%

loan price support levels. Wheat producers in other regions of 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 flood-irrigated wheat. Herbicide requirements include both pre-crop and in-crop treatments.

Table 2 outlines the machinery, irrigation equipment, and land resources used for flood-irrigated wheat. 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 — FLOOD-IRRIGATED WHEAT

	Yield Level (bu)			Your Farm
	45	60	75	
INCOME PER ACRE				
A. Yield per acre	45	60	75	
B. Price per bushel	\$ 2.98	\$ 2.98	\$ 2.98	
C. Net government payment	\$ 14.76	\$ 16.05	\$ 17.33	
D. Indemnity payments	\$	\$	\$	
E. Miscellaneous income	\$	\$	\$	
F. Returns/acre ((A × B) + C + D + E)	\$ 148.86	\$194.85	\$ 240.83	
COSTS PER ACRE				
1. Seed	\$ 6.00	\$ 7.20	\$ 9.60	
2. Herbicide	5.31	5.31	5.31	
3. Insecticide / Fungicide				
4. Fertilizer and Lime	17.89	23.73	29.78	
5. Crop Consulting	6.00	6.00	6.00	
6. Crop Insurance				
7. Drying				
8. Miscellaneous	10.00	10.00	10.00	
9. Custom Hire / Machinery Expense	59.74	63.59	67.45	
10. Non-machinery labor	5.00	5.00	5.00	
11. Irrigation				
a. Labor	10.00	10.00	10.00	
b. Fuel and Oil	38.64	38.64	38.64	
c. Repairs and Maintenance	2.52	2.52	2.52	
d. Depreciation on Equipment and Well	24.60	24.60	24.60	
e. Interest on Equipment	2.61	2.61	2.61	
12. Land Charge / Rent	38.58	48.24	57.90	
G. SUB TOTAL	\$ 226.88	\$247.44	\$ 269.41	
13. Interest on 1/2 Nonland Costs	7.53	7.97	8.46	
H. TOTAL COSTS	\$ 234.42	\$255.41	\$ 277.87	
I. RETURNS OVER COSTS (F - H)	\$ -85.55	\$ -60.56	\$ -37.03	
J. TOTAL COSTS/BUSHEL (H ÷ A)	\$ 5.21	\$ 4.26	\$ 3.70	
K. RETURN TO ANNUAL COST (I + 13) ÷ G	-34.39%	-21.25%	-10.61%	

Publications from Kansas State University are available on the World Wide Web at: <http://www.oznet.ksu.edu>

Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit Troy J. Dumler et al., *Flood-Irrigated Wheat Cost-Return Budget*, Kansas State University, October 2001.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-590

October 2001

It is the policy of Kansas State University Agricultural Experiment Station and Cooperative Extension Service that all persons shall have equal opportunity and access to its educational programs, services, activities, and materials without regard to race, color, religion, national origin, sex, age or disability. Kansas State University is an equal opportunity organization. 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, Marc A. Johnson, Director.