



# Projected Budgets for Irrigated Crops

Eastern North Dakota - January 2008

Dwight Aakre, Farm Management Specialist

These crop budgets provide an estimate of cost and returns for producing various crops under irrigation. The budgets are developed for a multicounty region. Soil type and productivity, as well as weather conditions, vary considerably across the region. These budgets are intended to be used as a guide. Producers should develop their own budgets.

These budgets account for full economic opportunity costs for land, machinery and machinery housing. Labor and management costs are not included. Therefore, the bottom line represents the return to labor and management. Labor and management become the residual claimants of profit or loss and, as a result, are negative for some projected budgets.

Farm program payments (direct and counter-cyclical payments) are not included in this budget. These payments are tied to historic farm program base acres and payment yields, not to the current crop produced. They are an important component of overall farm profitability, but have very little impact on the selection of crops to produce or the comparative profitability of those crops. Loan deficiency payments and marketing loan gains affect crop profitability and, therefore, crop selection if the expected market price is below the loan rate. However, the projected prices are at or above loan for all program crops in these budgets.

Electricity rates used for irrigation reflect off-peak or controlled electric rates plus demand and other charges for all crops.

## Input Prices Used

Seed	Alfalfa	\$2.50/pound
	Barley	\$8.50/bushel
	Corn	\$140/unit (80,000 kern.)
	Dry beans	\$0.70/pound
	Soybeans RR	\$32/50 lb. unit
	Spring wheat	\$9.75/bu
Fertilizer	Nitrogen	\$0.45/pound
	Phosphorous	\$0.37/pound
	Potassium	\$0.25/pound
Fuel	Diesel	\$2.80/gallon
	Gasoline	\$2.90/gallon

Miscellaneous expenses include soil testing and twine.

Operating interest is charged at 8 percent annual percentage rate for six months.

Miscellaneous overhead expenses include machinery housing and insurance, farm liability insurance, vehicle license and insurance, farm utilities, farm publications and legal fees.

Land charge is based on the average dryland cash rental rate for the region.

Machinery and irrigation equipment investment is calculated at 5 percent of average investment. The average investment equals (purchase price plus disposal price) divided by two.

Machinery and irrigation equipment depreciation equals (purchase price minus disposal price) divided by years of ownership.

Market yields are based on estimates of Extension agronomists assuming use of best production management practices.

Market prices are Extension economists' estimates.

# Projected Budgets for Irrigated Crops - Eastern North Dakota

	ALFALFA		ALFALFA SEEDING		CORN GRAIN		CORN SILAGE	
	Tons Per Acre	Your Figures	Tons Per Acre	Your Figures	Bushels Per Acre	Your Figures	Tons Per Acre	Your Figures
Market Yield	5.5	_____	3.0	_____	170.0	_____	22.0	_____
Market Price	\$75.00	_____	\$75.00	_____	\$3.30	_____	\$21.00	_____
<b>MARKET INCOME</b>	<b>412.50</b>	_____	<b>225.00</b>	_____	<b>561.00</b>	_____	<b>462.00</b>	_____
<b>DIRECT COSTS</b>								
-Seed	0.00	_____	45.00	_____	61.25	_____	61.25	_____
-Herbicides	0.00	_____	13.75	_____	22.00	_____	22.00	_____
-Fungicides	0.00	_____	0.00	_____	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____	0.00	_____	0.00	_____
-Fertilizer	44.82	_____	44.82	_____	125.66	_____	139.22	_____
-Crop Insurance	0.00	_____	0.00	_____	24.20	_____	24.20	_____
-Fuel and Lubrication	27.92	_____	22.09	_____	22.13	_____	42.77	_____
-Repairs	8.97	_____	10.36	_____	15.22	_____	12.57	_____
-Irrigation Power	22.38	_____	22.38	_____	14.91	_____	14.91	_____
-Irrigation Repairs	8.76	_____	8.76	_____	5.83	_____	5.83	_____
-Drying	0.00	_____	0.00	_____	23.97	_____	0.00	_____
-Miscellaneous	6.60	_____	4.10	_____	1.00	_____	1.00	_____
-Operating Interest	4.78	_____	6.85	_____	12.65	_____	12.95	_____
	=====	=====	=====	=====	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>124.23</b>	_____	<b>178.11</b>	_____	<b>328.82</b>	_____	<b>336.70</b>	_____
<b>INDIRECT (FIXED) COSTS</b>								
-Misc. Overhead	6.09	_____	6.38	_____	8.18	_____	16.67	_____
-Machinery Depreciation	22.06	_____	23.61	_____	30.22	_____	55.19	_____
-Machinery Investment	12.40	_____	13.72	_____	19.32	_____	39.28	_____
-Irrigation Depreciation	39.96	_____	39.96	_____	39.96	_____	39.96	_____
-Irrigation Investment	29.30	_____	29.30	_____	29.30	_____	29.30	_____
-Land Charge	65.40	_____	65.40	_____	65.40	_____	65.40	_____
	=====	=====	=====	=====	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>175.21</b>	_____	<b>178.37</b>	_____	<b>192.38</b>	_____	<b>245.80</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>299.44</b>	_____	<b>356.48</b>	_____	<b>521.20</b>	_____	<b>582.50</b>	_____
<b>RETURN to LABOR and MANAGEMENT</b>	<b>113.06</b>	_____	<b>-131.48</b>	_____	<b>39.80</b>	_____	<b>-120.50</b>	_____
<b>LISTED COSTS PER BUDGET UNIT:</b>								
-Direct Costs	22.59	_____	59.37	_____	1.93	_____	15.30	_____
-Indirect Costs	31.86	_____	59.46	_____	1.13	_____	11.17	_____
-Total Costs	54.44	_____	118.83	_____	3.07	_____	26.48	_____

# Projected Budgets for Irrigated Crops - Eastern North Dakota

DRY BEANS		MALTING BARLEY		SOYBEANS		SPRING WHEAT	
Pounds Per Acre	Your Figures	Bushels Per Acre	Your Figures	Bushels Per Acre	Your Figures	Bushels Per Acre	Your Figures
2400.0	_____	100.0	_____	60.0	_____	70.0	_____
\$0.24	_____	\$4.75	_____	\$8.50	_____	\$6.25	_____
576.00	_____	475.00	_____	510.00	_____	437.50	_____
36.69	_____	25.50	_____	41.60	_____	19.50	_____
25.90	_____	17.25	_____	10.20	_____	17.25	_____
0.00	_____	14.50	_____	0.00	_____	14.50	_____
0.00	_____	0.00	_____	5.00	_____	0.00	_____
51.61	_____	70.37	_____	22.89	_____	104.95	_____
13.90	_____	9.91	_____	16.02	_____	12.16	_____
27.35	_____	15.92	_____	19.00	_____	15.43	_____
17.38	_____	10.89	_____	12.31	_____	10.89	_____
14.91	_____	14.91	_____	14.91	_____	14.91	_____
5.83	_____	5.83	_____	5.83	_____	5.83	_____
0.00	_____	0.00	_____	0.00	_____	0.00	_____
1.00	_____	1.00	_____	1.00	_____	1.00	_____
7.78	_____	7.44	_____	5.95	_____	8.66	_____
=====	=====	=====	=====	=====	=====	=====	=====
202.35	_____	193.52	_____	154.71	_____	225.08	_____
6.67	_____	5.75	_____	5.75	_____	5.75	_____
22.85	_____	16.05	_____	16.05	_____	16.05	_____
14.25	_____	9.32	_____	9.32	_____	9.32	_____
39.96	_____	39.96	_____	39.96	_____	39.96	_____
29.30	_____	29.30	_____	29.30	_____	29.30	_____
65.40	_____	65.40	_____	65.40	_____	65.40	_____
=====	=====	=====	=====	=====	=====	=====	=====
178.43	_____	165.78	_____	165.78	_____	165.78	_____
380.78	_____	359.30	_____	320.49	_____	390.86	_____
<b>195.22</b>	_____	<b>115.70</b>	_____	<b>189.51</b>	_____	<b>46.64</b>	_____
0.08	_____	1.94	_____	2.58	_____	3.22	_____
0.07	_____	1.66	_____	2.76	_____	2.37	_____
0.16	_____	3.59	_____	5.34	_____	5.58	_____

# Projected Budgets for Irrigated Crops - Eastern North Dakota

---

## Irrigation Investment Assumptions

Center pivot	\$63,000
Well	\$20,000
Pump, motor and electrical	\$20,000
Pipe	\$8,000
<b>Total investment</b>	<b>\$111,000</b>

Excludes cost of getting power to the site.

## Irrigation Costs By Amount of Water Pumped

---

	Dry beans, corn and small grain			Alfalfa		
Pivot acres			125	Pivot acres		125
Inches pumped			8	Inches pumped		12
Operating hours			561	Operating hours		842
kwh/hr			55.37	kwh/hr		55.37
\$/kwh			\$0.06	\$/kwh		\$0.06
			<b>per acre</b>			<b>per acre</b>
Average annual interest cost per acre @ 6%			\$29.30			\$29.30
Depreciation cost per acre			\$39.96			\$39.96
Total ownership costs			\$69.26			\$69.26
Repairs per hour of operation	<b>per hour</b>	<b>total</b>	<b>per acre</b>	<b>per hour</b>	<b>total</b>	<b>per acre</b>
Power unit @	\$0.36	\$201.96	\$1.62	\$0.36	\$303.12	\$2.42
Delivery system @	\$0.89	\$499.29	\$3.99	\$0.89	\$749.38	\$6.00
Oil/elec. motor @	\$0.05	\$ 28.05	\$0.22	\$0.05	\$ 42.10	\$0.34
Total repairs			\$5.83			\$8.76
Electricity @	\$3.32	\$1,863.75	\$14.91	\$3.32	\$2,797.29	\$22.38
Total operating costs/acre			\$20.74			\$31.14

For more information on this and other topics, see: [www.ag.ndsu.edu](http://www.ag.ndsu.edu)

This publication may be copied for noncommercial, educational purposes in its entirety with no changes. Requests to use any portion of the document (including text, graphics or photos) should be sent to [permission@ndsuext.nodak.edu](mailto:permission@ndsuext.nodak.edu). Include exactly what is requested for use and how it will be used.

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. Duane Hauck, director, Fargo, N.D. Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. We offer our programs and facilities to all people regardless of race, color, national origin, religion, gender, disability, age, veteran's status or sexual orientation; and are an equal opportunity institution. This publication will be made available in alternative formats for people with disabilities upon request, (701) 231-7881.