



# Projected Budgets for Irrigated Crops

Western North Dakota - March 2005

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 this year, 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 except potatoes. The rate used for potatoes is the regular rate plus demand and other charges. Due to the high value of the potato crop, the potential loss due to the unavailability of irrigation power when needed more than offsets the additional electricity charge.

## Input Prices Used

Seed	Alfalfa	\$2.50/pound
	Barley	\$4.20/bushel
	Corn	\$105/bag (80,000 kern.)
	Dry beans	\$0.65/pound
	Potatoes	\$11/bag (cwt.)
	Soybeans RR	\$28/bag (50 lbs.)
Fertilizer	Spring wheat	\$5.30/bu
	Nitrogen	\$0.26/pound
	Phosphorous	\$0.22/pound
Fuel	Potassium	\$0.18/pound
	Diesel	\$1.60/gallon
	Gasoline	\$1.90/gallon

Miscellaneous expenses include soil testing, twine, petiole testing and promotion tax.

Operating interest is charged at 7 percent annual percentage rate for six months.

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

Land charge is 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.

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	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	_____	150.0	_____	20.0	_____
Market Price	\$75.00	_____	\$75.00	_____	\$1.95	_____	\$18.00	_____
<b>MARKET INCOME</b>	<b>412.50</b>	_____	<b>225.00</b>	_____	<b>292.50</b>	_____	<b>360.00</b>	_____
<b>DIRECT COSTS</b>								
-Seed	0.00	_____	45.00	_____	42.00	_____	42.00	_____
-Herbicides	0.00	_____	13.45	_____	19.55	_____	19.55	_____
-Fungicides	0.00	_____	0.00	_____	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____	0.00	_____	0.00	_____
-Fertilizer	25.00	_____	25.00	_____	57.34	_____	64.10	_____
-Crop Insurance	0.00	_____	0.00	_____	10.50	_____	9.75	_____
-Fuel & Lubrication	15.80	_____	14.98	_____	19.02	_____	55.02	_____
-Repairs	17.48	_____	17.46	_____	15.63	_____	29.18	_____
-Irrigation Power	30.75	_____	30.75	_____	23.92	_____	23.92	_____
-Irrigation Repairs	13.12	_____	13.12	_____	10.21	_____	10.21	_____
-Drying	0.00	_____	0.00	_____	22.50	_____	0.00	_____
-Trucking to Processor	NA	_____	NA	_____	NA	_____	NA	_____
-Miscellaneous	6.60	_____	4.10	_____	1.00	_____	1.00	_____
-Operating Interest	3.81	_____	5.74	_____	7.76	_____	8.92	_____
	=====	=====	=====	=====	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>112.56</b>	_____	<b>169.60</b>	_____	<b>229.43</b>	_____	<b>263.65</b>	_____
<b>INDIRECT (FIXED) COSTS</b>								
-Misc. Overhead	6.09	_____	6.38	_____	8.18	_____	16.67	_____
-Machinery Depreciation	21.21	_____	22.70	_____	29.06	_____	53.07	_____
-Machinery Investment	11.92	_____	13.19	_____	18.58	_____	37.77	_____
-Irrigation Depreciation	39.58	_____	39.58	_____	39.58	_____	39.58	_____
-Irrigation Investment	17.67	_____	17.67	_____	17.67	_____	17.67	_____
-Land Taxes	4.05	_____	4.05	_____	4.05	_____	4.05	_____
-Land Charge	26.00	_____	26.00	_____	26.00	_____	26.00	_____
	=====	=====	=====	=====	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>126.52</b>	_____	<b>129.57</b>	_____	<b>143.12</b>	_____	<b>194.81</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>239.08</b>	_____	<b>299.17</b>	_____	<b>372.55</b>	_____	<b>458.46</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>173.42</b>	_____	<b>-74.17</b>	_____	<b>-80.05</b>	_____	<b>-98.46</b>	_____
<b>LISTED COSTS PER BUDGET UNIT:</b>								
-Direct Costs	20.46	_____	56.53	_____	1.53	_____	13.18	_____
-Indirect Costs	23.00	_____	43.19	_____	0.95	_____	9.74	_____
-Total Costs	43.47	_____	99.72	_____	2.48	_____	22.92	_____

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DRY BEANS		POTATOES		MALTING BARLEY		SOYBEANS		SPRING WHEAT	
Pounds Per Acre	Your Figures	CWT Per Acre	Your Figures	Bushels Per Acre	Your Figures	Bushels Per Acre	Your Figures	Bushels Per Acre	Your Figures
2000.0	_____	350.0	_____	100.0	_____	50.0	_____	70.0	_____
\$0.17	_____	\$4.50	_____	\$2.75	_____	\$5.10	_____	\$3.40	_____
340.00	_____	1575.00	_____	275.00	_____	255.00	_____	238.00	_____
32.50	_____	220.00	_____	12.60	_____	33.60	_____	10.60	_____
24.35	_____	41.00	_____	14.50	_____	9.00	_____	14.50	_____
0.00	_____	127.40	_____	14.50	_____	0.00	_____	14.50	_____
0.00	_____	32.13	_____	0.00	_____	0.00	_____	0.00	_____
20.00	_____	66.76	_____	40.40	_____	18.84	_____	54.30	_____
15.35	_____	30.00	_____	6.60	_____	10.80	_____	5.70	_____
14.70	_____	20.91	_____	10.48	_____	10.48	_____	10.48	_____
13.55	_____	34.71	_____	10.70	_____	9.20	_____	9.20	_____
23.92	_____	39.14	_____	23.92	_____	23.92	_____	23.92	_____
10.21	_____	10.21	_____	10.21	_____	10.21	_____	10.21	_____
0.00	_____	0.00	_____	0.00	_____	0.00	_____	0.00	_____
NA	_____	248.50	_____	NA	_____	NA	_____	NA	_____
1.00	_____	30.50	_____	1.00	_____	1.00	_____	1.00	_____
5.45	_____	31.54	_____	5.07	_____	4.45	_____	5.40	_____
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
161.03	_____	932.80	_____	149.98	_____	131.50	_____	159.81	_____
6.67	_____	13.45	_____	5.75	_____	5.75	_____	5.75	_____
21.97	_____	57.51	_____	15.43	_____	15.43	_____	15.43	_____
13.70	_____	33.27	_____	8.96	_____	8.96	_____	8.96	_____
39.58	_____	39.58	_____	39.58	_____	39.58	_____	39.58	_____
17.67	_____	17.67	_____	17.67	_____	17.67	_____	17.67	_____
4.05	_____	4.05	_____	4.05	_____	4.05	_____	4.05	_____
26.00	_____	26.00	_____	26.00	_____	26.00	_____	26.00	_____
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
129.64	_____	191.53	_____	117.44	_____	117.44	_____	117.44	_____
290.67	_____	1124.33	_____	267.42	_____	248.94	_____	277.25	_____
<b>49.33</b>	_____	<b>450.67</b>	_____	<b>7.58</b>	_____	<b>6.06</b>	_____	<b>-39.25</b>	_____
0.08	_____	2.67	_____	1.50	_____	2.63	_____	2.28	_____
0.06	_____	0.55	_____	1.17	_____	2.35	_____	1.68	_____
0.15	_____	3.21	_____	2.67	_____	4.98	_____	3.96	_____

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## Irrigation Investment

### Assumptions

Center Pivot	\$46,000
Well	\$17,273
Pump, motor and electric	\$15,050
Pipe	\$5,100
<b>Total Investment</b>	<b>\$83,423</b>

## Irrigation Costs By Amount of Water Pumped

	Dry beans, corn & small grain			Potatoes			Alfalfa		
Pivot Acres		125		Pivot Acres		125	Pivot Acres		125
Inches pumped		14		Inches pumped		14	Inches pumped		18
Operating Hours		982		Operating Hours		982	Operating Hours		1262
kwh/hr		55.37		kwh/hr		55.37	kwh/hr		55.37
\$/kwh		\$0.055		\$/kwh		\$0.090	\$/kwh		\$0.055
		<b>per acre</b>				<b>per acre</b>			<b>per acre</b>
Average annual interest cost per acre @ 5%		\$17.67				\$17.67			\$17.67
Depreciation cost per acre		\$39.58				\$39.58			\$39.58
Total ownership costs		\$57.25				\$57.25			\$57.25
Repairs per hour of oper	<b>per hour</b>	<b>total</b>	<b>per acre</b>	<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	\$353.45	\$2.83	\$0.36	\$353.45	\$2.83	\$0.36	\$454.32	\$3.63
Delivery system @	\$0.89	\$873.80	\$6.99	\$0.89	\$873.80	\$6.99	\$0.89	\$1,123.18	\$8.99
Oil/elec. motor @	\$0.05	\$ 49.09	\$0.39	\$0.05	\$ 49.09	\$0.39	\$0.05	\$ 63.10	\$0.50
Total repairs	\$10.21	\$10.21	\$13.12						
Electricity @	\$3.05	\$2,989.92	\$23.92	\$4.98	\$4,892.60	\$39.14	\$3.05	\$3,843.23	\$30.75
Total operating costs/acre			\$34.13			\$49.35			\$43.87

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