



# Projected Budgets for Irrigated Crops

Central North Dakota - January 2008

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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
Fertilizer	Spring wheat	\$9.75/bu
	Nitrogen	\$0.45/pound
	Phosphorous	\$0.37/pound
Fuel	Potassium	\$0.25/pound
	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.

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	<b>ALFALFA</b>		<b>ALFALFA SEEDING</b>		<b>CORN GRAIN</b>		<b>CORN SILAGE</b>	
	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	_____	160.0	_____	20.0	_____
Market Price	\$75.00	_____	\$75.00	_____	\$3.30	_____	\$21.00	_____
<b>MARKET INCOME</b>	<b>412.50</b>	_____	<b>225.00</b>	_____	<b>528.00</b>	_____	<b>420.00</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	_____	117.78	_____	129.03	_____
-Crop Insurance	0.00	_____	0.00	_____	30.77	_____	30.77	_____
-Fuel and Lubrication	27.92	_____	22.09	_____	22.13	_____	42.77	_____
-Repairs	8.97	_____	10.36	_____	15.22	_____	12.57	_____
-Irrigation Power	26.10	_____	26.10	_____	18.63	_____	18.63	_____
-Irrigation Repairs	10.21	_____	10.21	_____	7.29	_____	7.29	_____
-Drying	0.00	_____	0.00	_____	22.56	_____	0.00	_____
-Miscellaneous	6.60	_____	4.10	_____	1.00	_____	1.00	_____
-Operating Interest	4.98	_____	7.06	_____	12.75	_____	13.01	_____
	=====	=====	=====	=====	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>129.60</b>	_____	<b>183.49</b>	_____	<b>331.38</b>	_____	<b>338.32</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	46.60	_____	46.60	_____	46.60	_____	46.60	_____
	=====	=====	=====	=====	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>156.41</b>	_____	<b>159.57</b>	_____	<b>173.58</b>	_____	<b>227.00</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>286.01</b>	_____	<b>343.06</b>	_____	<b>504.96</b>	_____	<b>565.32</b>	_____
<b>RETURN to LABOR and MANAGEMENT</b>	<b>126.49</b>	_____	<b>-118.06</b>	_____	<b>23.04</b>	_____	<b>-145.32</b>	_____
<b>LISTED COSTS PER BUDGET UNIT:</b>								
-Direct Costs	23.56	_____	61.16	_____	2.07	_____	16.92	_____
-Indirect Costs	28.44	_____	53.19	_____	1.08	_____	11.35	_____
-Total Costs	52.00	_____	114.35	_____	3.16	_____	28.27	_____

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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
2200.0	_____	100.0	_____	55.0	_____	70.0	_____
\$0.24	_____	\$4.75	_____	\$8.50	_____	\$6.25	_____
528.00	_____	475.00	_____	467.50	_____	437.50	_____
36.69	_____	23.95	_____	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	_____
47.11	_____	70.37	_____	20.91	_____	104.05	_____
18.04	_____	11.82	_____	21.38	_____	15.88	_____
27.35	_____	15.92	_____	19.00	_____	15.43	_____
17.38	_____	10.89	_____	12.31	_____	10.89	_____
18.63	_____	18.63	_____	18.63	_____	18.63	_____
7.29	_____	7.29	_____	7.29	_____	7.29	_____
0.00	_____	0.00	_____	0.00	_____	0.00	_____
1.00	_____	1.00	_____	1.00	_____	1.00	_____
7.98	_____	7.66	_____	6.29	_____	8.98	_____
=====	=====	=====	=====	=====	=====	=====	=====
207.37	_____	199.28	_____	163.61	_____	233.40	_____
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	_____
46.60	_____	46.60	_____	46.60	_____	46.60	_____
=====	=====	=====	=====	=====	=====	=====	=====
159.63	_____	146.98	_____	146.98	_____	146.98	_____
367.00	_____	346.26	_____	310.59	_____	380.38	_____
<b>161.00</b>	_____	<b>128.74</b>	_____	<b>156.91</b>	_____	<b>57.12</b>	_____
0.09	_____	1.99	_____	2.97	_____	3.33	_____
0.07	_____	1.47	_____	2.67	_____	2.10	_____
0.17	_____	3.46	_____	5.65	_____	5.43	_____

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## 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

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	<b>Dry beans, corn and small grain</b>			<b>Alfalfa</b>		
Pivot acres		125		Pivot acres		125
Inches pumped		10		Inches pumped		14
Operating hours		701		Operating hours		982
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
<b>Total ownership costs</b>		<b>\$69.26</b>				<b>\$69.26</b>
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	\$252.36	\$2.02	\$0.36	\$353.52	\$2.83
Delivery system @	\$0.89	\$623.89	\$4.99	\$0.89	\$873.98	\$6.99
Oil/elec. motor @	\$0.05	\$ 35.05	\$0.28	\$0.05	\$ 49.10	\$0.39
<b>Total repairs</b>			<b>\$7.29</b>			<b>\$10.21</b>
Electricity @	\$3.32	\$2,328.86	\$18.63	\$3.32	\$3,262.40	\$26.10
<b>Total operating costs/acre</b>			<b>\$25.92</b>			<b>\$36.31</b>

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