



Projected Budgets for Irrigated Crops

Eastern North Dakota - February 2011

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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) 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 can be 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 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	\$4.00/pound
	Barley	\$7.50/bushel
	Corn grain	\$2.56/1,000 seeds
	Corn silage	\$2.40/1,000 seeds
	Dry beans	\$0.78/pound
	Soybeans RR	\$0.33/1,000 seeds
Fertilizer	Spring wheat	\$11.00/bu
	Nitrogen	\$0.48/pound
	Phosphorous	\$0.55/pound
	Potassium	\$0.44/pound
Fuel	Diesel	\$3.00/gallon
	Gasoline	\$3.00/gallon

Miscellaneous expenses include soil testing and twine.

Operating interest is charged at a 6 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 the 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 the 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	_____	170.0	_____	22.0	_____
Market Price	\$75.00	_____	\$75.00	_____	\$5.00	_____	\$25.00	_____
MARKET INCOME	412.50	_____	225.00	_____	850.00	_____	550.00	_____
DIRECT COSTS								
-Seed	0.00	_____	60.00	_____	89.60	_____	84.00	_____
-Herbicides	0.00	_____	19.70	_____	21.45	_____	21.45	_____
-Fungicides	0.00	_____	0.00	_____	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____	0.00	_____	0.00	_____
-Fertilizer	79.97	_____	43.67	_____	163.78	_____	179.23	_____
-Crop Insurance	0.00	_____	0.00	_____	36.20	_____	22.00	_____
-Fuel & Lubrication	26.76	_____	20.74	_____	19.62	_____	4.35	_____
-Repairs	14.34	_____	13.13	_____	15.58	_____	3.99	_____
-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	_____	22.56	_____	0.00	_____
-Miscellaneous	6.60	_____	4.10	_____	1.00	_____	66.00	_____
-Operating Interest	4.76	_____	5.77	_____	11.72	_____	12.05	_____
SUM OF LISTED DIRECT COSTS	163.57	_____	198.25	_____	402.25	_____	413.81	_____
INDIRECT (FIXED) COSTS								
-Misc. Overhead	6.09	_____	6.38	_____	8.18	_____	16.67	_____
-Machinery Depreciation	58.17	_____	46.17	_____	34.75	_____	9.54	_____
-Machinery Overhead	40.74	_____	33.62	_____	22.62	_____	8.71	_____
-Irrigation Depreciation	39.96	_____	39.96	_____	39.96	_____	39.96	_____
-Irrigation Investment	29.30	_____	29.30	_____	29.30	_____	29.30	_____
-Land Charge	100.00	_____	100.00	_____	100.00	_____	100.00	_____
SUM OF LISTED INDIRECT COSTS	274.26	_____	255.43	_____	234.81	_____	204.18	_____
SUM OF ALL LISTED COSTS	437.83	_____	453.68	_____	637.06	_____	617.99	_____
RETURN to LABOR and MANAGEMENT	-25.33	_____	-228.68	_____	212.94	_____	-67.99	_____
LISTED COSTS PER BUDGET UNIT:								
-Direct Costs	29.74	_____	66.08	_____	2.37	_____	18.81	_____
-Indirect Costs	49.87	_____	85.14	_____	1.38	_____	9.28	_____
-Total Costs	79.61	_____	151.23	_____	3.75	_____	28.09	_____

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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
2400.0	_____	100.0	_____	60.0	_____	70.0	_____
\$0.250	_____	\$5.00	_____	\$12.00	_____	\$8.50	_____
600.00	_____	500.00	_____	720.00	_____	595.00	_____
39.00	_____	18.75	_____	59.40	_____	22.00	_____
35.27	_____	12.00	_____	21.72	_____	21.25	_____
18.00	_____	1.50	_____	0.00	_____	13.50	_____
0.00	_____	0.00	_____	7.68	_____	0.00	_____
64.50	_____	109.81	_____	35.53	_____	138.20	_____
23.20	_____	11.40	_____	24.72	_____	19.25	_____
18.28	_____	13.82	_____	13.29	_____	12.81	_____
13.36	_____	10.19	_____	11.14	_____	11.18	_____
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	_____
7.00	_____	5.98	_____	5.86	_____	7.80	_____
=====	=====	=====	=====	=====	=====	=====	=====
240.35	_____	205.19	_____	201.07	_____	267.72	_____
6.67	_____	5.75	_____	5.75	_____	5.75	_____
36.36	_____	22.37	_____	24.38	_____	18.20	_____
14.70	_____	15.34	_____	16.14	_____	16.54	_____
39.96	_____	39.96	_____	39.96	_____	39.96	_____
29.30	_____	29.30	_____	29.30	_____	29.30	_____
100.00	_____	100.00	_____	100.00	_____	100.00	_____
=====	=====	=====	=====	=====	=====	=====	=====
226.99	_____	212.72	_____	215.53	_____	209.75	_____
467.34	_____	417.91	_____	416.61	_____	477.47	_____
132.66	_____	82.09	_____	303.39	_____	117.53	_____
0.10	_____	2.05	_____	3.35	_____	3.82	_____
0.09	_____	2.13	_____	3.59	_____	3.00	_____
0.19	_____	4.18	_____	6.94	_____	6.82	_____

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Irrigation Investment Assumptions

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

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
		per acre				per acre
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	per hour	total	per acre	per hour	total	per acre
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

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