



Projected Budgets for Irrigated Crops

Eastern North Dakota - March 2013

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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	\$10.00/bushel
	Corn grain	\$2.69/1,000 seeds
	Corn silage	\$2.50/1,000 seeds
	Dry beans	\$0.88/pound
	Soybeans RR	\$0.33/1,000 seeds
Fertilizer	Spring wheat	\$15.00/bushel
	Nitrogen	\$0.58/pound
	Phosphorous	\$0.55/pound
Fuel	Potassium	\$0.55/pound
	Diesel	\$3.60/gallon
	Gasoline	\$3.60/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 4 percent of the 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	\$100.00	_____	\$100.00	_____	\$5.50	_____	\$30.00	_____
MARKET INCOME	550.00	_____	300.00	_____	935.00	_____	660.00	_____
DIRECT COSTS								
-Seed	0.00	_____	60.00	_____	94.15	_____	87.50	_____
-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	90.75	_____	49.50	_____	190.32	_____	208.70	_____
-Crop Insurance	0.00	_____	0.00	_____	36.20	_____	22.00	_____
-Fuel and lubrication	28.65	_____	21.66	_____	23.94	_____	5.44	_____
-Repairs	20.01	_____	17.92	_____	16.38	_____	5.42	_____
-Irrigation power	45.17	_____	45.17	_____	30.10	_____	30.10	_____
-Irrigation repairs	16.03	_____	16.03	_____	10.68	_____	10.68	_____
-Drying	0.00	_____	0.00	_____	22.56	_____	0.00	_____
-Miscellaneous	6.60	_____	4.10	_____	1.00	_____	80.00	_____
-Operating interest	6.22	_____	7.02	_____	13.40	_____	14.14	_____
SUM OF LISTED DIRECT COSTS	213.43	_____	241.10	_____	460.18	_____	485.43	_____
INDIRECT (FIXED) COSTS								
-Misc. overhead	6.09	_____	6.38	_____	8.18	_____	16.67	_____
-Machinery depreciation	45.21	_____	37.71	_____	34.24	_____	12.24	_____
-Machinery overhead	29.04	_____	23.92	_____	17.85	_____	7.85	_____
-Irrigation depreciation	44.69	_____	44.69	_____	44.69	_____	44.69	_____
-Irrigation investment	26.81	_____	26.81	_____	26.81	_____	26.81	_____
-Land charge	100.00	_____	100.00	_____	100.00	_____	100.00	_____
SUM OF LISTED INDIRECT COSTS	251.84	_____	239.51	_____	231.77	_____	208.26	_____
SUM OF ALL LISTED COSTS	465.27	_____	480.61	_____	691.95	_____	693.69	_____
RETURN to LABOR and MANAGEMENT	84.73	_____	-180.61	_____	243.05	_____	-33.69	_____
LISTED COSTS PER BUDGET UNIT:								
-Direct costs	38.80	_____	80.37	_____	2.71	_____	22.06	_____
-Indirect costs	45.79	_____	79.84	_____	1.36	_____	9.47	_____
-Total costs	84.59	_____	160.20	_____	4.07	_____	31.53	_____

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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	_____
\$0.300	_____	\$6.50	_____	\$12.00	_____	\$8.00	_____
720.00	_____	650.00	_____	720.00	_____	560.00	_____
44.00	_____	25.00	_____	59.40	_____	30.00	_____
35.27	_____	12.00	_____	21.72	_____	21.25	_____
18.00	_____	1.50	_____	0.00	_____	13.50	_____
0.00	_____	0.00	_____	7.68	_____	0.00	_____
74.50	_____	127.65	_____	37.95	_____	161.40	_____
23.20	_____	11.40	_____	24.72	_____	19.25	_____
22.28	_____	17.49	_____	16.39	_____	16.14	_____
17.73	_____	12.78	_____	14.96	_____	14.79	_____
30.10	_____	30.10	_____	30.10	_____	30.10	_____
10.68	_____	10.68	_____	10.68	_____	10.68	_____
0.00	_____	0.00	_____	0.00	_____	0.00	_____
1.00	_____	1.00	_____	1.00	_____	1.00	_____
8.30	_____	7.49	_____	6.74	_____	9.54	_____
=====	=====	=====	=====	=====	=====	=====	=====
285.07	_____	257.09	_____	231.33	_____	327.65	_____
6.67	_____	5.75	_____	5.75	_____	5.75	_____
43.83	_____	27.20	_____	30.44	_____	29.60	_____
13.74	_____	14.38	_____	14.63	_____	15.90	_____
44.69	_____	44.69	_____	44.69	_____	44.69	_____
26.81	_____	26.81	_____	26.81	_____	26.81	_____
100.00	_____	100.00	_____	100.00	_____	100.00	_____
=====	=====	=====	=====	=====	=====	=====	=====
235.74	_____	218.83	_____	222.32	_____	222.75	_____
520.81	_____	475.92	_____	453.66	_____	550.40	_____
199.19	_____	174.08	_____	266.34	_____	9.60	_____
0.12	_____	2.57	_____	3.86	_____	4.68	_____
0.10	_____	2.19	_____	3.71	_____	3.18	_____
0.22	_____	4.76	_____	7.56	_____	7.86	_____

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Irrigation Investment Assumptions

Center pivot	\$80,000	Salvage value	20%
Well	\$22,000	Average years of life	20
Pump, motor and electrical	\$24,000	Total depreciation	\$114,400
Pipe	\$17,000	Average annual investment	\$ 85,800
Total investment	\$143,000		

These investment figures do not include the cost of getting electrical power to the site.

Irrigation Costs By Amount of Water Pumped

	Dry Beans, Corn and Small Grain Eastern North Dakota			Alfalfa Eastern North Dakota		
Pivot acres		128		Pivot acres		128
Inches pumped		8		Inches pumped		12
Operating hours		561		Operating hours		842
kwh/hr		55.37		kwh/hr		55.37
\$/kwh		\$0.080		\$/kwh		\$0.080
		per acre				per acre
Average annual interest cost per acre @ 4%		\$26.81				\$26.81
Depreciation cost per acre		\$44.69				\$44.69
Total ownership costs		\$71.50				\$71.50
Repairs per hour of operation	per hour	total	per acre	per hour	total	per acre
Power unit @	\$0.57	\$319.77	\$2.56	\$0.57	\$479.94	\$3.84
Delivery system @	\$1.74	\$976.14	\$7.81	\$1.74	\$1,465.08	\$11.72
Oil/elec. motor @	\$0.07	\$39.27	\$0.31	\$0.07	\$58.94	\$0.47
Total repairs			\$10.68			\$16.03
Electricity @	\$4.43	\$2,485.01	\$19.41	\$4.43	\$3,729.72	\$29.14
Total operating costs/acre			\$30.10			\$45.17

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