



Projected Budgets for Irrigated Crops

Western 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
	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.

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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	_____	\$3.30	_____	\$21.00	_____
MARKET INCOME	412.50	_____	225.00	_____	495.00	_____	420.00	_____
DIRECT COSTS								
-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	_____	109.28	_____	129.03	_____
-Crop Insurance	0.00	_____	0.00	_____	21.57	_____	21.57	_____
-Fuel and Lubrication	27.92	_____	22.09	_____	22.13	_____	42.77	_____
-Repairs	8.97	_____	10.36	_____	15.22	_____	12.57	_____
-Irrigation Power	33.54	_____	33.54	_____	26.10	_____	26.10	_____
-Irrigation Repairs	13.12	_____	13.12	_____	10.21	_____	10.21	_____
-Drying	0.00	_____	0.00	_____	21.15	_____	0.00	_____
-Miscellaneous	6.60	_____	4.10	_____	1.00	_____	1.00	_____
-Operating Interest	5.40	_____	7.47	_____	12.40	_____	13.06	_____
	=====	=====	=====	=====	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	140.37	_____	194.25	_____	322.31	_____	339.56	_____
INDIRECT (FIXED) COSTS								
-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	32.00	_____	32.00	_____	32.00	_____	32.00	_____
	=====	=====	=====	=====	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	141.81	_____	144.97	_____	158.98	_____	212.40	_____
SUM OF ALL LISTED COSTS	282.18	_____	339.22	_____	481.29	_____	551.96	_____
RETURN to LABOR and MANAGEMENT	130.32	_____	-114.22	_____	13.71	_____	-131.96	_____
LISTED COSTS PER BUDGET UNIT:								
-Direct Costs	25.52	_____	64.75	_____	2.15	_____	16.98	_____
-Indirect Costs	25.78	_____	48.32	_____	1.06	_____	10.62	_____
-Total Costs	51.31	_____	113.07	_____	3.21	_____	27.60	_____

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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
2000.0	_____	100.0	_____	50.0	_____	70.0	_____
\$0.24	_____	\$4.75	_____	\$8.50	_____	\$6.25	_____
480.00	_____	475.00	_____	425.00	_____	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	_____
42.61	_____	70.37	_____	19.18	_____	104.95	_____
15.10	_____	14.65	_____	21.88*	_____	17.88	_____
27.35	_____	15.92	_____	19.00	_____	15.43	_____
17.38	_____	10.89	_____	12.31	_____	10.89	_____
26.10	_____	26.10	_____	26.10	_____	26.10	_____
10.21	_____	10.21	_____	10.21	_____	10.21	_____
0.00	_____	0.00	_____	0.00	_____	0.00	_____
1.00	_____	1.00	_____	1.00	_____	1.00	_____
8.09	_____	8.19	_____	6.66	_____	9.51	_____
=====	=====	=====	=====	=====	=====	=====	=====
210.43	_____	213.03	_____	173.14	_____	247.22	_____
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	_____
32.00	_____	32.00	_____	32.00	_____	32.00	_____
=====	=====	=====	=====	=====	=====	=====	=====
145.03	_____	132.38	_____	132.38	_____	132.38	_____
355.46	_____	345.41	_____	305.52	_____	379.60	_____
124.54	_____	129.59	_____	119.48	_____	57.90	_____
0.11	_____	2.13	_____	3.46	_____	3.53	_____
0.07	_____	1.32	_____	2.65	_____	1.89	_____
0.18	_____	3.45	_____	6.11	_____	5.42	_____

* Crop insurance estimate available by written agreement only in most counties.

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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			14	Inches pumped		18
Operating hours			982	Operating hours		1262
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	\$353.45	\$2.83	\$0.36	\$454.32	\$3.63
Delivery system @	\$0.89	\$873.80	\$6.99	\$0.89	\$1,123.18	\$8.99
Oil/elec. motor @	\$0.05	\$ 49.09	\$0.39	\$0.05	\$ 63.10	\$0.50
Total repairs			\$10.21			\$13.12
Electricity @	\$3.32	\$3,262.40	\$26.10	\$3.32	\$4,192.62	\$33.54
Total operating costs/acre			\$36.31			\$46.66

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