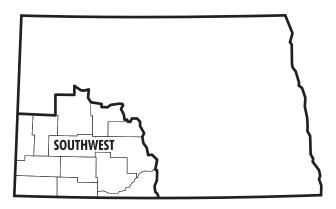


# Projected 2010 Crop Budgets South West North Dakota

Andrew Swenson, Farm Management Specialist Ron Haugen, Farm Management Specialist



The 2010 crop budgets provide an estimate of revenues and costs for selected crops. Each set of budgets are developed for a multi-county region. There is considerable variation in soil type and productivity, weather conditions, as well as management and production practices within each region. Therefore, THESE BUDGETS ARE ONLY INTENDED TO BE USED AS A GUIDE. EVERY INDIVIDUAL IS HIGHLY ENCOURAGED TO DEVELOP HIS/HER OWN BUDGETS!

The profitability budget accounts for full economic opportunity costs for land and machinery investment, regardless of farm operator equity position. The bottom line is the return to labor and management. This is the expected "payment" to the producer for the labor and managerial efforts required by the crop

NDSU Extension Service

North Dakota State University, Fargo, ND 58108

enterprise. Each individual must make the decision whether it is sufficient.

The budget can be changed to conform to the more common definition of accounting profit (return to unpaid labor and management, and owner equity) by replacing the machinery investment and land charge cost items with your per acre interest and rental expense of machinery and land, and real estate tax if land is owned.

The budget can be used for long run decisions if the revenues and costs are realistic for several ears. (Crop prices, direct costs, and the land charge are best estimates for only the 2010 crop year, but crop yields are historic averages and machinery ownership costs are an average for the total length of ownership). If the budget shows a high return to labor and management, and is representative for several years, increased acreage and corresponding investment should be considered. However, if long-run returns to labor and management are unsatisfactory the best decision may be to exit the crop enterprise and employ the machinery and land investment, and labor and management, in a different enterprise or investment.

For short-run planning decisions you can omit the indirect costs if the land and machinery required to produce the different enterprises are in place. Simply compare the crop enterprises by calculating return over direct costs. Labor requirements and risk should also be considered. Insurance is not available for some crops.

The budget can be used to estimate cashflow by making a few modifications. Machinery depreciation should be omitted and the machinery investment number replaced with your per acre principal and interest payment on machinery debt. For owned land, the land charge should be replaced with your per acre real estate tax and principal and interest payment on land debt.

Direct and counter-cyclical payments under the Farm Bill are omitted from the budgets because those payments are tied to historic farm program base acres and payment yields, not to current crop selection or production. Direct payments for this region are \$6.25 per acre when averaged over all crop acreage. Counter-cylclical payments, which occur if the national average price of program crops are below a certain level, are not expected with the price levels used in the budgets.

#### **Primary Assumptions:**

Crops are planted on dryland recrop ground. Costs of moving crop to local market/storage are included.

The budgets for the South West, North West, South Central and North Central regions typically represent production systems where soil disturbance only occurs at seeding.

**Market Price:** Best estimates of NDSU extension economists. The greater of projected market price and marketing loan rate is used.

Market Yields: Average yield for the 7 year period 2002-2008, after the low and high yield years are removed. Yields for safflower, yellow mustard, buckwheat, millet, rye and chickpeas are from NDSU extension agronomists and industry sources.

**Fertilizer:** Cost of fertilizer applied, based on soil test, to meet yield goal of 130% of market yield. N fertilizer can be reduced if previous crop was soybean, dry bean, field peas or lentil.

Soil test - recrop:

Nitrogen - 32 lb

Phosphorus - 12 ppm

Potassium - 356 ppm

#### Fertilizer prices:

Nitrogen - .34/lb Phosphorus - .32/lb Potassium - .46/lb

#### **Seed Prices:**

Spring Wheat 8.40/bu
Durum 8.25/bu
Barley 6.60/bu

Corn grain RR 2.15/thou.kern.
Oil Sunflower 1.17/thou.kern.
Conf. Sunflower 2.05/thou.kern.

Canola 8.00/lb Flax 12.50/bu Field Peas 10.50/bu Oats 4.25/bu Lentils .40/lb Mustard .95/lb Safflower .46/lb .50/lb Buckwheat Millet .22/lb Small Chickpeas .60/lb Winter Wheat 7.50/bu 5.20/bu Rye

#### Fuel prices:

Diesel 2.50/gal Gas 2.70/gal

Lubrication charge: 15% of fuel cost

**Crop Insurance:** Coverage levels are 70% on all insurable crops. MPCI estimates are used, except for RA-HPO on all wheat, soybeans and canola.

**Miscellaneous:** soil testing, machinery rent and custom work.

**Operating Interest:** Direct costs charged 5.25% interest for 6 month period.

Misc. Overhead: Machinery housing and insurance at .5% and .85%, respectively, of average machinery investment. Also, liability insurance and license fees of trucks. In addition, \$2 per acre is assumed for general farm utilities, farm publications, meetings, dues, income tax preparation, legal fees, etc.

**Land charge** = average cash rent.

Machinery investment: 4.5% real interest rate, over the years of machine ownership, is charged on average machinery investment. The real, or inflation adjusted, rate is the commercial rate minus the inflation rate. Ave. mach. investment = (Purchase price + Disposal price)/2

**Depreciation** = (Purchase price - disposal price / years ownership)

## **Spring Wheat**

### **Durum**

		Your		Your
	Per Acre	Figures	Per Acre	Figures
Market Yield	26		28	
Market Price	5.31		6.07*	
MARKET INCOME	138.06		169.96	
DIRECT COSTS				
-Seed	10.50		12.38	
-Herbicides	18.90		18.90	
-Fungicides**	5.50		5.50	
-Insecticides***	0.00		0.00	
-Fertilizer	20.74		23.17	
-Crop Insurance	9.90		10.30	
-Fuel & Lubrication	9.04		9.12	
-Repairs	12.04		12.07	
-Drying	0.00		0.00	
-Miscellaneous	6.00		6.00	
-Operating Interest	2.43		2.56	
	======	========	=======	========
SUM OF LISTED DIRECT COSTS	95.05		99.99	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.50		4.52	
-Machinery Depreciation	13.65		13.72	
-Machinery Investment	7.57		7.60	
-Land Charge	30.00		30.00	
SUM OF LISTED INDIRECT COSTS	====== 55.71	========	====== 55.84	========
SUM OF ALL LISTED COSTS	150.77		155.83	
RETURN TO LABOR & MANAGEMENT	(12.71)		14.13	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.66		3.57	
-Indirect Costs	2.14		1.99	
-Total Costs	5.80		5.57	

#### Wheat notes:

<sup>\*</sup>Durum price is for milling quality. There is risk of lower quality and lower price.

<sup>\*\*</sup>Includes seed treatment (\$1.50-\$2) and early season foliar fungicide (\$3-\$4.50). Late season fungicide, often not warranted in this region, would cost \$4-\$14, plus application. Trials consistantly show yield response of 5-10% with early season fungicide, IF wheat planted into residue, and 15-20% with late application IF weather favors disease development.

<sup>\*\*\*</sup>Cereal grain aphid insecticide would cost about \$6 per acre plus application.

## Malting Barley Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	43		55	
Market Price	43 3.59*		3.63	
Warket Free	0.00		0.00	
MARKET INCOME	154.37		199.65	
DIRECT COSTS				
-Seed	8.25		40.85*	
-Herbicides	17.30		14.00	
-Fungicides	1.50		0.00	
-Insecticides	0.00		0.00**	
-Fertilizer	20.94		22.23	
-Crop Insurance	4.30		0.00***	
-Fuel & Lubrication	10.91		10.84	
-Repairs	13.31		13.03	
-Drying	0.00		11.00	
-Miscellaneous	6.00		6.00	
-Operating Interest	2.17		3.10	
	=======	=========	=======	========
SUM OF LISTED DIRECT COSTS	84.67		121.04	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	5.09		5.51	
-Machinery Depreciation	15.82		18.64	
-Machinery Investment	9.04		10.18	
-Land Charge	30.00		30.00	
	=======	=========	=======	========
SUM OF LISTED INDIRECT COSTS	59.95		64.32	
SUM OF ALL LISTED COSTS	144.62		185.36	
RETURN TO LABOR & MANAGEMENT	9.75		14.29	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	1.97		2.20	
-Indirect Costs	1.39		1.17	
-Total Costs	3.36		3.37	

#### **Barley notes:**

#### **Corn notes:**

<sup>\*</sup>Use \$2.92 estimate for feed barley price.

<sup>\*</sup>Roundup (glyphosate) resistant corn. Cost includes insecticide seed treatment for wireworm, rootworm, white grub and suppression of cutworm.

<sup>\*\*</sup>Corn borer insecticide, foliar applied mid-season, would cost about \$8 plus application.

<sup>\*\*\*</sup>Crop insurance only available by written agreement.

## Oil Sunflower

## **Confectionery Sunflower**

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1140		1080	
Market Price	0.149		0.224	
MARKET INCOME	169.86		241.92	
DIRECT COSTS				
-Seed	27.50*		43.05*	
-Herbicides	27.00		27.00	
-Fungicides	0.00		0.00	
-Insecticides	6.00**		12.00**	
-Fertilizer	17.02		15.55	
-Crop Insurance	10.40		13.60	
-Fuel & Lubrication	9.68		9.61	
-Repairs	12.83		12.79	
-Drying	2.28		2.16	
-Miscellaneous	12.00		18.00	
-Operating Interest	3.27		4.04	
	======	========	=======	
SUM OF LISTED DIRECT COSTS	127.97		157.80	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.95		4.92	
-Machinery Depreciation	15.56		15.50	
-Machinery Investment	8.78		8.75	
-Land Charge	30.00		30.00	
	======	=========	======	=======================================
SUM OF LISTED INDIRECT COSTS	59.29		59.17	
SUM OF ALL LISTED COSTS	187.26		216.97	
RETURN TO LABOR & MANAGEMENT	(17.40)		24.95	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.11		0.15	
-Indirect Costs	0.05		0.05	
-Total Costs	0.16	<u></u>	0.20	

#### Oil Sunflower notes:

#### **Confectionery Sunflower notes:**

<sup>\*</sup>Cost includes seed treatment for control of wireworm and flea beetle.

<sup>\*\*</sup>One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$6 is under "Miscellaneous." Insecticide treatment for cutworms would cost about \$5 plus application (usually tank mixed with herbicide).

<sup>\*</sup>Cost includes seed treatment for control of wireworm and flea beetle.

<sup>\*\*</sup>Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$6 per application. Each custom application cost of \$6 is under "Miscellaneous." Insecticide treatment for cutworms would cost about \$5 plus application (usually tank mixed with herbicide).

Canola

**Flax** 

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1010		15	
Market Price	0.168		8.15	
MARKET INCOME	169.68		122.25	
DIRECT COSTS				
-Seed	40.00*		7.50	
-Herbicides	14.00		21.50	
-Fungicides	0.00**		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	27.17		10.84	
-Crop Insurance	13.00		6.30	
-Fuel & Lubrication	10.01		10.38	
-Repairs	12.90		13.39	
-Drying	0.00		0.00	
-Miscellaneous	6.00		1.50	
-Operating Interest	3.23		1.87	
	======		=======	========
SUM OF LISTED DIRECT COSTS	126.31		73.30	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.76		4.90	
-Machinery Depreciation	15.05		15.43	
-Machinery Investment	8.66		9.21	
-Land Charge	30.00		30.00	
_aa cagc	=======		=======	
SUM OF LISTED INDIRECT COSTS	58.47		59.54	
SUM OF ALL LISTED COSTS	184.79		132.84	
RETURN TO LABOR & MANAGEMENT	(15.11)		(10.59)	
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.13		4.89	
-Indirect Costs	0.06		3.97	
-Total Costs	0.18		8.86	

#### Canola notes:

<sup>\*</sup>Cost includes insecticide seed treatment for flea beetles.

<sup>\*\*</sup>Fungicide for white mold would cost about \$18 plus application.

## **Field Peas**

## **Oats**

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	29		45	
Market Price	6.00*		2.17	
MARKET INCOME	174.00		97.65	
DIRECT COSTS				
-Seed	31.50		8.50	
-Herbicides	25.50		7.50	
-Fungicides	0.00		0.00	
-Insecticides	0.00**		0.00	
-Fertilizer	2.82		17.82	
-Crop Insurance	7.10		7.40	
-Fuel & Lubrication	10.40		10.98	
-Repairs	13.96		13.34	
-Drying	0.00		0.00	
-Miscellaneous	4.50		6.00	
-Operating Interest	2.51		1.88	- <del></del>
	======	========	=======	=========
SUM OF LISTED DIRECT COSTS	98.30		73.42	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.96		5.12	
-Machinery Depreciation	16.40		15.88	
-Machinery Investment	9.01		9.08	
-Land Charge	30.00		30.00	
SUM OF LISTED INDIRECT COSTS	60.36		60.08	
SUM OF ALL LISTED COSTS	158.66		133.50	
RETURN TO LABOR & MANAGEMENT	15.34		(35.85)	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.39		1.63	
-Indirect Costs	2.08		1.34	
-Total Costs	5.47	-	2.97	
	<b></b>			

#### Field Pea notes:

<sup>\*</sup>Food quality price. Use \$3.25 price estimate for feed quality peas.

<sup>\*\*</sup>Insecticide treatment for cutworms would cost about \$5 per acre plus application (usually tank mixed with herbicide).

## **Lentils**

## Yellow Mustard

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1250		850	
Market Price	0.240		0.234	
MARKET INCOME	300.00		198.90	
DIRECT COSTS				
-Seed	28.00		9.50	
-Herbicides	32.50*		15.00	
-Fungicides	0.00		0.00	
-Insecticides	0.00**		0.00	
-Fertilizer	2.03		16.94	
-Crop Insurance	18.10		9.50	
-Fuel & Lubrication	10.92		10.39	
-Repairs	14.65		13.40	
-Drying	0.00		0.00	
-Miscellaneous	7.00		6.00	
-Operating Interest	2.97		2.12	
	======	========	=======	=========
SUM OF LISTED DIRECT COSTS	116.16		82.84	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.99		4.90	
-Machinery Depreciation	16.83		15.44	
-Machinery Investment	9.35		9.22	
-Land Charge	30.00		30.00	
SUM OF LISTED INDIRECT COSTS	61.17		======= 59.55	
SUM OF ALL LISTED COSTS	177.33		142.39	
RETURN TO LABOR & MANAGEMENT	122.67		56.51	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(lb): 0.09 0.05 0.14		(lb): 0.10 0.07 0.17	

#### Lentil notes:

<sup>\*</sup>Includes pre-harvest dessicant.

<sup>\*\*</sup>Insecticide treatment for cutworms would cost about \$5 per acre plus application (usually tank mixed with herbicide).

## **Safflower**

## **Buckwheat**

		Your		Your
	Per Acre	Figures	Per Acre	Figures
Market Yield	950		850	
Market Price	0.192		0.198	
MARKET INCOME	182.40		168.30	
DIRECT COSTS				
-Seed	11.50		25.00	
-Herbicides	18.00		13.50	
-Fungicides	0.00*		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	12.72		8.73	
-Crop Insurance	9.10		8.50	
-Fuel & Lubrication	9.01		10.02	
-Repairs	12.02		12.90	
-Drying	0.00		0.00	
-Miscellaneous	6.00		1.50	
-Operating Interest	2.06		2.10	
	=======	========	=======	========
SUM OF LISTED DIRECT COSTS	80.41		82.25	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.48		4.76	
-Machinery Depreciation	13.62		15.04	
-Machinery Investment	7.55		8.66	
-Land Charge	30.00		30.00	
SUM OF LISTED INDIRECT COSTS	55.65	========	====== 58.47	========
SUM OF ALL LISTED COSTS	136.06		140.72	
RETURN TO LABOR & MANAGEMENT	46.34		27.58	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.08		0.10	
-Indirect Costs	0.06		0.07	
-Total Costs	0.14		0.17	

#### Safflower notes:

<sup>\*</sup>Fungicide for alternaria leaf spot would cost about \$17 plus application.

## Millet

## Small Chickpeas\*

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1400		1600	
Market Price	0.065		0.230	
MARKET INCOME	91.00		368.00	
DIRECT COSTS				
-Seed	5.00	- <del></del>	72.00	
-Herbicides	6.00		32.50	
-Fungicides	0.00		18.00**	
-Insecticides	0.00		0.00	- <u></u> -
-Fertilizer	13.05		13.54	
-Crop Insurance	0.00		11.30	
-Fuel & Lubrication	10.35		12.29	
-Repairs	13.06		16.76	
-Drying	0.00		0.00	
-Miscellaneous	6.00		7.00	
-Operating Interest	1.40		4.81	
	======	=========	=======	
SUM OF LISTED DIRECT COSTS	54.86		188.20	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.89		5.47	
-Machinery Depreciation	15.34		19.82	
-Machinery Investment	8.81		10.77	
-Land Charge	30.00		30.00	
-	=======	=========	=======	========
SUM OF LISTED INDIRECT COSTS	59.03		66.06	
SUM OF ALL LISTED COSTS	113.89		254.26	
RETURN TO LABOR & MANAGEMENT	(22.89)		113.74	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.04		0.12	
-Indirect Costs	0.04		0.04	
-Total Costs	0.08		0.16	

#### **Small Chickpea notes:**

<sup>\*</sup>The budget is for a kabuli variety with medium size seed, about 7-8mm, which has better ascochyta resistance than large kabuli's.

<sup>\*\*</sup>Fungicide treatment for ascochyta blight. A second treatment may be necessary.

## Winter Wheat

## Rye

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	33*		33	
Market Price	4.63		3.38	
MARKET INCOME	152.79		111.54	
DIRECT COSTS				
-Seed	7.50		6.24	
-Herbicides	15.40		15.40	
-Fungicides	9.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	29.25		29.25	
-Crop Insurance	9.90		5.00	
-Fuel & Lubrication	8.87		9.01	
-Repairs	11.67		11.59	·
-Drying	0.00		0.00	·
-Miscellaneous	6.00		6.00	
-Operating Interest	2.56		2.17	
	=======	========	=======	=========
SUM OF LISTED DIRECT COSTS	100.14		84.66	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	4.44		4.50	
-Machinery Depreciation	13.28		13.43	
-Machinery Investment	7.15		7.35	
-Land Charge	30.00		30.00	
SUM OF LISTED INDIRECT COSTS	54.86		55.28	
SUM OF ALL LISTED COSTS	155.01		139.93	
RETURN TO LABOR & MANAGEMENT	(2.22)		(28.39)	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.03		2.57	
-Indirect Costs	1.66		1.68	
-Total Costs	4.70		4.24	

#### Winter Wheat notes:

<sup>\*</sup>Yield is per harvested acre, 2002-2008 acreage abandonment averaged 12%.

## 2010 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
2WD 100HP Tractor	60300	400hr	20	19447	5.11 /hr	4.49 /hr	6.14 /hr	
2WD 160HP Tractor	102600	500hr	15	30365	9.63 /hr	5.98 /hr	10.45 /hr	
4WD 330HP Tractor	178000	500hr	15	52675	16.71 /hr	10.38 /hr	10.36 /hr	
SP Combine (base unit)	225000	250hr	12	55965	56.34 /hr	25.29 /hr	36.52 /hr	
Tandem Truck (used)	33000	150hr	15	10500	10.00 /hr	6.53 /hr	6.33 /hr	
Semi & Trailer (used)	37000	150hr	10	10600	17.60 /hr	7.14 /hr	8.00 /hr	
Pick-up Truck	21900	300hr	10	4500	5.80 /hr	1.98 /hr	2.93 /hr	
Swather 25 ft	20500	1000ac	20	4855	0.78 /ac	0.57 /ac	0.36 /ac	12.1
Sprayer 90 ft	32500	5000ac	10	14714	0.30 /ac	0.21 /ac	0.42 /ac	42.5
Heavy Harrow 70 ft	26000	2000ac	20	15164	0.27 /ac	0.46 /ac	0.29 /ac	39.7
Air Seeder 40 ft	140000	2200ac	10	65991	2.80 /ac	2.10 /ac	4.84 /ac	17.0
Planter 12-30	56100	800ac	20	15879	1.99 /ac	1.79 /ac	2.64 /ac	10.6
Corn head	41000	600ac	20	3860	3.09 /ac	1.68 /ac	0.95 /ac	6.8
Grain head w/pu	13100	800ac	15	2716	0.87 /ac	0.44 /ac	0.25 /ac	8.5
Grain str. cut 30 ft	21800	2000ac	8	8791	0.81 /ac	0.34 /ac	0.34 /ac	10.2
Head w/sunf pans 30 ft	26200	600ac	20	2680	1.96 /ac	1.08 /ac	0.41 /ac	10.2
Rock picker	18700	50hr	20	5976	0.42 /ac	0.37 /ac	0.28 /ac	29.1
Grain auger	7800	50hr	20	590	7.21 /hr	3.78 /hr	4.00 /hr	

### **Example Sequence of Operations**

Field operations sequence for spring wheat and durum

OP. NO.	DESCRIPTION	(FEET) WIDTH	(MPH) SPEED	(AC/HR) Fld Cap	(\$/AC) FUEL & LUBE	(\$/AC) EST. REPAIRS
1	Pick Rocks				0.43	0.49
2	Spray (burn-dowr	ո) 90	6.0	42.5	0.30	0.56
3	Plant	40	5.0	17.0	2.46	5.46
4	Spray	90	6.0	42.5	0.30	0.56
5	Combine	30	4.0	10.2	2.86	3.92
	Trucks*				0.96	0.43
	Grain auger (pto)				0.17	0.08
	Pickup truck alloc	ation			1.56	0.53
		Total		_	9.04	12.04

<sup>\*</sup> Truck costs will vary between crops.

### For more information on this and other topics, see: www.ag.ndsu.edu

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. North Dakota State University does not discriminate on the basis of race, color, national origin, religion, sex, gender identity, disability, age, status as a U.S. veteran, sexual orientation, marital status, or public assistance status. Direct inquiries to the Vice President for Equity, Diversity and Global Outreach, 205 Old Main, (701) 231-7708. This publication will be made available in alternative formats for people with disabilities upon request, (701) 231-7881.