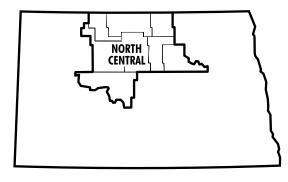


January 2021

Projected 2021 Crop Budgets



North Central North Dakota

Ron Haugen, Farm Management Specialist

This region consists of eight counties: Benson, Bottineau, McHenry, McLean, Pierce, Renville, Rolette and Ward.

The 2021 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 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

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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 years. (Crop prices, direct costs, and the land charge are best estimates for only the 2021 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.

The 2018 Farm Bill continues the Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) support programs. PLC and ARC payments have been omitted from the budgets because those payments, if any, are tied to historic farm program base acres, not to current crop selection or production.

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 2013-2019, 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. N fertilizer can be reduced if previous crop was soybean, dry bean, field peas or lentil.

Fertilizer prices:

Nitrogen - .39/lb Phosphorus - .44/lb Potassium - .27/lb

Seed Prices:

Spring Wheat 11.50/bu Durum 13.00/bu 9.50/bu Barley Corn GM 2.69/thou.kern. Soybean GM .34/thou.kern. .75/thou.kern. Dry Beans Oil Sunflower 1.55/thou.kern. Conf. Sunflower 2.75/thou.kern. Canola 11.30/lb Flax 18.50/bu Field Peas 14.00/bu Oats 6.25/bu Lentils .30/lb Mustard 2.10/lb

Fuel prices:

Millet

Rye

Buckwheat

Winter Wheat

Diesel 2.00/gal Gas 2.10/gal

Lubrication charge: 15% of fuel cost

Crop Insurance: Revenue Protection was used for all wheat, barley, soybeans, corn, canola, sunflowers, field peas, dry beans and lentils with a 75% coverage level and enterprise units. APH insurance was used for other crops for which 70% coverage and optional units were assumed.

.40/lb

.45/lb

9.00/bu

8.00/bu

Miscellaneous: soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 4.5% 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, \$4.00 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: 4.0% 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)

Per Acre Your Figures Per Acre Your Figures Market Yield 51 49 Market Price 5.60 6.30* MARKET REVENUE 285.60 308.70 DIRECT COSTS -Seed 26.00 19.55 -Herbicides 26.20 26.20 -Fungicides** 9.00 17.00 -Insecticides*** 0.00 0.00 -Fertilizer 64.68 61.66 -Crop Insurance 7.00 9.00 -Fuel & Lubrication 11.93 11.84 -Repairs 20.14 20.08 -Drying 0.00 0.00 -Miscellaneous 1.50 1.50 -Operating Interest 3.60 3.90 ======= ======= SUM OF LISTED DIRECT COSTS 163.60 177.18 INDIRECT (FIXED) COSTS -Misc. Overhead 8.52 8.48 -Machinery Depreciation 21.78 21.67 -Machinery Investment 13.29 13.23 -Land Charge 50.00 50.00 ======= ====== ======== ======== SUM OF LISTED INDIRECT COSTS 93.59 93.38 SUM OF ALL LISTED COSTS 257.19 270.56 RETURN TO LABOR & MANAGEMENT 28.41 38.14

Spring Wheat

Durum

(bu):

3.62

1.91

5.52

Wheat notes:

-Direct Costs

-Total Costs

-Indirect Costs

LISTED COSTS PER BUDGET UNIT

(bu):

3.21

1.84

5.04

^{*}Durum price is for milling quality. There is risk of lower quality and lower price.

^{**}Includes seed treatment, an early season foliar fungicide, and a late season fungicide. Prothioconazole, metconazole or pydiflumetofen containing products are highly recommended when conditions are favorable for fusarium head blight (scab).

^{***}Cereal grain aphid insecticide would cost about \$4. Wheat midge insecticide would cost about \$6.

Malting Barley Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	73		111	
Market Price	4.96*		3.80	
MARKET REVENUE	362.08		421.80	
DIRECT COSTS				
-Seed	15.20		78.01*	
-Herbicides	24.30		25.00	
-Fungicides	17.00**		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	56.36		73.70	
-Crop Insurance	5.50	· -	10.00	
-Fuel & Lubrication	12.84		17.44	
-Repairs	20.60		25.32	
-Drying	0.00	· -	19.80	
-Miscellaneous	1.50		1.50	
-Operating Interest	3.45		5.64	
	======	========	======	=========
SUM OF LISTED DIRECT COSTS	156.75		256.41	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.91		11.20	
-Machinery Depreciation	22.82		35.75	
-Machinery Investment	13.80		20.37	
-Land Charge	50.00		50.00	
	======	=========	======	========
SUM OF LISTED INDIRECT COSTS	95.53		117.32	
CLIM OF ALL LICTED COCTO	050.00		070.70	
SUM OF ALL LISTED COSTS	252.28		373.73	
RETURN TO LABOR & MANAGEMENT	109.80		48.07	
			_	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	2.15		2.31	
-Indirect Costs	1.31		1.06	
-Total Costs	3.46		3.37	

Barley notes:

Corn notes

^{*}There is risk of not making malting barley quality. Use \$2.87 for feed barley.

^{**}Includes seed treatment, an early season foliar fungicide, and a late season fungicide fungicide recommended when conditions are favorable for fusarium head blight (scab).

^{*}GM corn with herbicide tolerance and above ground insect control traits.

Soybeans

Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	33		1650	
Market Price	10.10		0.30	
MARKET REVENUE	333.3		495.00	
DIRECT COSTS				
-Seed	65.80*		61.88	
-Herbicides	26.00		46.90*	
-Fungicides	0.00		20.00**	
-Insecticides	0.00**		0.00	
-Fertilizer	7.80		35.36	
-Crop Insurance	5.00		13.00	
-Fuel & Lubrication	9.35		13.15	
-Repairs	16.85		22.13	
-Drying	0.00		0.00	
-Miscellaneous	5.00		13.50	
-Operating Interest	3.06		5.08	
, ,	=======		=======	
SUM OF LISTED DIRECT COSTS	138.86		231.00	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.72		8.95	
-Machinery Depreciation	19.94		26.50	
-Machinery Investment	11.24		15.53	
-Land Charge	50.00		50.00	
Lana Ghange	=======		======	
SUM OF LISTED INDIRECT COSTS	88.90		100.98	
COM OF EIGHED HADINEOF COOLS	00.00		100.00	
SUM OF ALL LISTED COSTS	227.76		331.98	
SOM ST ALL LISTED SOCIE	227.70		001.00	-
RETURN TO LABOR & MANAGEMENT	105.54		163.02	
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	4.21		0.140	
-Indirect Costs	2.69		0.061	
-Total Costs	6.90		0.201	
10141 00313	0.50		0.201	

Soybean notes:

Drybean notes:

^{*}GM soybeans with herbicide tolerance. The cost includes \$8 for inculant and fungicide treatment in addition to seed expense.

^{**}Insecticide for soybean aphid, spider mite, or foliage-feeding caterpillars would cost about \$4 per acre plus application.

^{*}Includes dessicant prior to straight cutting.

^{**}Fungicide for white mold. Fungicide for rust at \$4-\$12 plus application maybe necessary.

Oil Sunflower

Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1620		1230	
Market Price	0.199		0.264	
			5.25	
MARKET REVENUE	322.38		324.72	
DIRECT COSTS				
-Seed	32.55		49.50	
-Herbicides	34.00		36.20	
-Fungicides	0.00*		0.00*	
-Insecticides	5.00**		10.00**	
-Fertilizer	37.08	·	25.15	- <u></u>
-Crop Insurance	8.50	·	13.50	- <u></u>
-Fuel & Lubrication	12.43	·	11.89	- <u></u>
-Repairs	19.90	 -	19.54	
-Drying	5.01	 -	3.90	-
-Miscellaneous	10.00	 -	18.50	
-Operating Interest	3.70		4.23	
	======	========	======	=========
SUM OF LISTED DIRECT COSTS	168.17		192.41	
NIDIDEOT (51)(50)				
INDIRECT (FIXED) COSTS			a = 1	
-Misc. Overhead	8.95		8.71	
-Machinery Depreciation	23.70		23.02	
-Machinery Investment	14.72		14.37	
-Land Charge	50.00		50.00	
CLIM OF LICTED INDIDECT COCTO		========	======	
SUM OF LISTED INDIRECT COSTS	97.37		96.10	
SUM OF ALL LISTED COSTS	265.54		288.51	
SOM OF ALL LISTED COSTS	200.04		200.51	
RETURN TO LABOR & MANAGEMENT	56.84		36.21	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.104		0.156	
-Indirect Costs	0.060		0.078	
-Total Costs	0.164		0.235	
			-	

Oil Sunflower notes:

Confection Sunflower notes:

^{*}Fungicide for rust would cost \$4 plus application.

^{**}One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$8 is under "Miscellaneous." Foliar applied insecticide for cutworms would cost about \$5 per acre plus application (usually tank mixed with herbicide).

^{*}Fungicide for rust would cost \$4 plus application.

^{**}Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$5 per application. Each custom application cost of \$8 is under "Miscellaneous." Foliar applied insecticide for cutworms would cost about \$5 per acre plus application (usually tank mixed with herbicide).

Canola

Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1920		22	
Market Price	0.194		10.65	
MARKET REVENUE	372.48		234.30	
DIRECT COSTS				
-Seed	56.50		16.65	
-Herbicides	23.10		29.20	
-Fungicides	0.00*		0.00*	
-Insecticides	0.00		0.00	
-Fertilizer	74.79		26.79	
-Crop Insurance	8.00		11.00	
-Fuel & Lubrication	11.40		11.39	
-Repairs	19.33		20.18	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	4.38		2.63	
	=======	========	=======	========
SUM OF LISTED DIRECT COSTS	199.00	- <u></u> -	119.34	
NIDIDEOT (ENVED) 0.0000				
INDIRECT (FIXED) COSTS	0.40			
-Misc. Overhead	8.18		8.25	
-Machinery Depreciation	22.06		22.40	
-Machinery Investment	12.69		13.40	
-Land Charge	50.00		50.00	
SUM OF LISTED INDIRECT COSTS	00.00	=======	====== 04.0F	========
SOM OF LISTED INDIRECT COSTS	92.93		94.05	
SUM OF ALL LISTED COSTS	291.93		213.39	
RETURN TO LABOR & MANAGEMENT	80.55		20.91	
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.104		5.42	
-Indirect Costs	0.048		4.28	
-Total Costs	0.152		9.70	

Canola notes: *Fungicide for white mold would cost about \$18 plus application.

Field Peas

Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	39		87	
Market Price	6.48		2.59	
MARKET REVENUE	252.72		225.33	
DIDEOT COOTS				
DIRECT COSTS	40.00		10.50	
-Seed	42.00		12.50	
-Herbicides	35.90		10.60	
-Fungicides	1.50		0.00	
-Insecticides	0.00*		0.00	
-Fertilizer	10.55		57.78	
-Crop Insurance	8.50		13.50	
-Fuel & Lubrication	10.89		14.31	
-Repairs	19.41		21.73	
-Drying	0.00		0.00	
-Miscellaneous	9.50		1.50	
-Operating Interest	3.11		2.97	
, ,	=======	========	=======	========
SUM OF LISTED DIRECT COSTS	141.36		134.89	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.26		9.58	
-Machinery Depreciation	23.10		25.20	
-Machinery Investment	12.85		15.56	
-Land Charge	50.00		50.00	
-Land Charge	30.00		======	
SUM OF LISTED INDIRECT COSTS	94.21		100.34	
SUM OF ALL LISTED COSTS	235.57		235.23	
RETURN TO LABOR & MANAGEMENT	17.15		(9.90)	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.62		1.55	
-Indirect Costs	2.42		1.15	
-Total Costs	6.04		2.70	

Field Pea notes:

^{*}Foliar insecticide for cutworms and/or pea aphids would cost about \$4 per acre plus application.

Lentils **Yellow Mustard**

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1500		900	
Market Price	0.18		0.270	
	00		0.2.0	
MARKET REVENUE	270.00		243.00	
DIRECT COSTS				
-Seed	21.00		25.20	
-Herbicides	35.50*		20.20	
-Fungicides	16.00**		0.00	
-Insecticides	0.00***		6.00*	
-Fertilizer	6.85		25.15	
-Crop Insurance	9.00		16.50**	
-Fuel & Lubrication	11.94		11.18	
-Repairs	22.26		19.68	
-Drying	0.00		0.00	
-Miscellaneous	9.50		1.50	
-Operating Interest	2.97		2.82	
	=======	========	=======	========
SUM OF LISTED DIRECT COSTS	135.02		128.23	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.76		8.24	
-Machinery Depreciation	26.35		21.37	
-Machinery Investment	14.52		13.56	
-Land Charge	50.00		50.00	
OUM OF LICTED INDIDECT COCTO	=======	========	======	========
SUM OF LISTED INDIRECT COSTS	99.63		93.17	
SUM OF ALL LISTED COSTS	234.65		221.40	
RETURN TO LABOR & MANAGEMENT	35.35		21.60	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.090		0.142	
-Indirect Costs	0.066		0.104	
-Total Costs	0.156		0.246	

Lentil notes:

Yellow Mustard notes:

^{*}Includes pre-harvest dessicant.

^{**}Fungicide treatment for ascochyta/anthracnose.
***Foliar insecticide cutworms, pea aphids and/or grasshoppers would cost about \$4 per acre plus application.

^{*}Insecticide seed treatment for flea beetles.

^{**}Crop insurance is not available in some counties of the region.

Buckwheat

Millet

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	950		1300	
Market Price	0.223		0.14	
			-	
MARKET REVENUE	211.85		182.00	
DIRECT COSTS				
-Seed	20.00		11.25	
-Herbicides	18.00		9.60	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	15.89		15.64	
-Crop Insurance	8.00*		0.00	
-Fuel & Lubrication	10.94		11.62	
-Repairs	18.99		19.97	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	2.10		1.57	
operaning interest	=======	=========	=======	=========
SUM OF LISTED DIRECT COSTS	95.42		71.15	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	0.07			
	8.07		8.43	
-Machinery Depreciation	8.07 20.85		8.43 21.91	
-Machinery Depreciation -Machinery Investment	20.85		21.91	
-Machinery Investment	20.85 12.84		21.91 13.84	
	20.85 12.84 50.00		21.91 13.84 50.00	
-Machinery Investment -Land Charge	20.85 12.84 50.00		21.91 13.84 50.00	
-Machinery Investment	20.85 12.84 50.00		21.91 13.84 50.00	
-Machinery Investment -Land Charge SUM OF LISTED INDIRECT COSTS	20.85 12.84 50.00 ======= 91.76		21.91 13.84 50.00 ====== 94.18	
-Machinery Investment -Land Charge	20.85 12.84 50.00		21.91 13.84 50.00	
-Machinery Investment -Land Charge SUM OF LISTED INDIRECT COSTS SUM OF ALL LISTED COSTS	20.85 12.84 50.00 ====== 91.76 187.18		21.91 13.84 50.00 ====== 94.18	
-Machinery Investment -Land Charge SUM OF LISTED INDIRECT COSTS	20.85 12.84 50.00 ======= 91.76		21.91 13.84 50.00 ====== 94.18	
-Machinery Investment -Land Charge SUM OF LISTED INDIRECT COSTS SUM OF ALL LISTED COSTS RETURN TO LABOR & MANAGEMENT	20.85 12.84 50.00 ======= 91.76 187.18 24.67		21.91 13.84 50.00 ====== 94.18 165.33 16.67	
-Machinery Investment -Land Charge SUM OF LISTED INDIRECT COSTS SUM OF ALL LISTED COSTS RETURN TO LABOR & MANAGEMENT LISTED COSTS PER BUDGET UNIT	20.85 12.84 50.00 ======= 91.76 187.18 24.67 (lb):		21.91 13.84 50.00 ====== 94.18 165.33 16.67 (lb):	
-Machinery Investment -Land Charge SUM OF LISTED INDIRECT COSTS SUM OF ALL LISTED COSTS RETURN TO LABOR & MANAGEMENT LISTED COSTS PER BUDGET UNIT -Direct Costs	20.85 12.84 50.00 ====== 91.76 187.18 24.67 (lb): 0.100		21.91 13.84 50.00 ====== 94.18 165.33 16.67 (lb): 0.055	
-Machinery Investment -Land Charge SUM OF LISTED INDIRECT COSTS SUM OF ALL LISTED COSTS RETURN TO LABOR & MANAGEMENT LISTED COSTS PER BUDGET UNIT	20.85 12.84 50.00 ======= 91.76 187.18 24.67 (lb):		21.91 13.84 50.00 ====== 94.18 165.33 16.67 (lb):	

Buckwheat notes:

^{*}Crop insurance is not available in most counties of the region.

Winter Wheat Rye

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	51*		46	
Market Price	4.77		3.94	
MARKET REVENUE	243.27		181.24	
DIRECT COSTS				
-Seed	9.90		9.60	
-Herbicides	24.50		6.50	
-Fungicides	9.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	64.68		57.12	
-Crop Insurance	7.00		16.00	
-Fuel & Lubrication	11.05		10.89	
-Repairs	17.95		17.52	
-Drying	0.00		0.00	
-Miscellaneous	8.25		8.25	
-Operating Interest	3.43		2.83	
, ,	======		=======	
SUM OF LISTED DIRECT COSTS	155.76		128.71	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.88		7.83	
-Machinery Depreciation	19.46		19.23	
-Machinery Investment	11.15		11.16	
-Land Charge	50.00	= <u></u>	50.00	
	=======	========	======	========
SUM OF LISTED INDIRECT COSTS	88.49	=	88.22	
SUM OF ALL LISTED COSTS	244.25		216.93	
RETURN TO LABOR & MANAGEMENT	(0.98)		(35.69)	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.05		2.80	
-Indirect Costs	1.74		1.92	
-Total Costs	4.79		4.72	
	•		_	

Winter Wheat notes:

^{*}Yield is per harvested acre. There is some risk of acreage abandonment in spring.

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