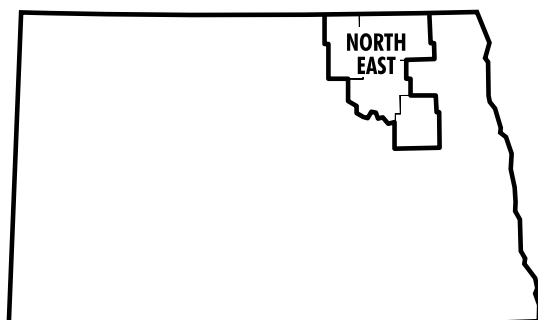




# FARM MANAGEMENT PLANNING GUIDE

January 2021

## Projected 2021 Crop Budgets



# North East North Dakota

Ron Haugen, Farm Management Specialist

Note: This region consists of four counties:  
Cavalier, Nelson, Ramsey and Towner.

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

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.

# NDSU

## EXTENSION

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.

**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
Barley	9.50/bu
Corn GM	2.69/thou.kern.
Soybean GM	.34/thou.kern.
Dry Beans	.75/thou.kern.
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
Mustard	2.10/lb
Buckwheat	.40/lb
Millet	.45/lb
Winter Wheat	9.00/bu

#### Fuel prices:

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.

**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)

## Spring Wheat

## Durum

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	60	_____	54	_____
Market Price	5.68	_____	6.37*	_____
<b>MARKET REVENUE</b>	<b>340.80</b>	_____	<b>343.98</b>	_____
<b>DIRECT COSTS</b>				
-Seed	20.13	_____	26.00	_____
-Herbicides	22.50	_____	22.50	_____
-Fungicides**	17.00	_____	17.00	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	83.89	_____	74.37	_____
-Crop Insurance	9.00	_____	11.00	_____
-Fuel & Lubrication	13.33	_____	13.06	_____
-Repairs	20.62	_____	20.44	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.23	_____	4.18	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>192.20</b>	_____	<b>190.05</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.63	_____	8.52	_____
-Machinery Depreciation	21.89	_____	21.57	_____
-Machinery Investment	13.33	_____	13.16	_____
-Land Charge	55.00	_____	55.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>98.85</b>	_____	<b>98.25</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>291.05</b>	_____	<b>288.30</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>49.75</b>	_____	<b>55.68</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	(bu):		(bu):	
-Direct Costs	3.20	_____	3.52	_____
-Indirect Costs	1.65	_____	1.82	_____
-Total Costs	4.85	_____	5.34	_____

### Wheat notes:

\*Durum price is for milling quality. There is high risk of lower quality and lower price.

\*\*Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is 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	75	_____	120	_____
Market Price	4.92*	_____	3.80	_____
<b>MARKET REVENUE</b>	<b>369.00</b>	_____	<b>456.00</b>	_____
<b>DIRECT COSTS</b>				
-Seed	19.00	_____	82.05*	_____
-Herbicides	19.70	_____	27.00	_____
-Fungicides	17.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	63.54	_____	87.67	_____
-Crop Insurance	5.00	_____	15.00	_____
-Fuel & Lubrication	13.89	_____	19.21	_____
-Repairs	20.79	_____	27.14	_____
-Drying	0.00	_____	22.14	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.61	_____	6.34	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>164.03</b>	_____	<b>288.05</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.87	_____	11.69	_____
-Machinery Depreciation	22.49	_____	37.21	_____
-Machinery Investment	13.60	_____	21.71	_____
-Land Charge	55.00	_____	55.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>99.96</b>	_____	<b>125.61</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>263.99</b>	_____	<b>413.66</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>105.01</b>	_____	<b>42.34</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	2.19	_____	2.40	_____
-Indirect Costs	1.33	_____	1.05	_____
-Total Costs	3.52	_____	3.45	_____

**Barley notes:**

\*There is risk of not making malting barley quality. Use \$2.86 for feed barley.

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

**Corn notes:**

\*GM corn with herbicide tolerance and above ground insect control traits.

## Soybeans

## Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	31		1580	
Market Price	10.20		0.30	
<b>MARKET REVENUE</b>	<b>316.20</b>		<b>474.00</b>	
<b>DIRECT COSTS</b>				
-Seed	65.80*		61.88	
-Herbicides	28.00		46.90*	
-Fungicides	0.00		20.00**	
-Insecticides	4.00**		0.00	
-Fertilizer	12.11		37.47	
-Crop Insurance	9.00		19.00	
-Fuel & Lubrication	12.75		14.47	
-Repairs	21.05		23.73	
-Drying	0.00		0.00	
-Miscellaneous	5.00		13.50	
-Operating Interest	3.55		5.33	
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>161.26</b>		<b>242.28</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.50		9.20	
-Machinery Depreciation	22.58		27.16	
-Machinery Investment	13.93		16.41	
-Land Charge	55.00		55.00	
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>100.01</b>		<b>107.77</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>261.27</b>		<b>350.05</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>54.93</b>		<b>123.95</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(lb):</b>	
-Direct Costs	5.20		0.153	
-Indirect Costs	3.23		0.068	
-Total Costs	8.43		0.222	

**Soybean 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.

**Drybean notes:**

\*Includes dessicant prior to straight cutting.

\*\*Fungicide for white mold. A second treatment may be necessary. Fungicide for rust at \$4-\$12 plus application maybe necessary.

## Oil Sunflower

## Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1780	_____	1230	_____
Market Price	0.201	_____	0.267	_____
<b>MARKET REVENUE</b>	<b>357.78</b>	_____	<b>328.41</b>	_____
<b>DIRECT COSTS</b>				
-Seed	34.10	_____	52.25	_____
-Herbicides	27.70	_____	29.90	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	5.00**	_____	10.00**	_____
-Fertilizer	45.88	_____	28.21	_____
-Crop Insurance	15.00	_____	24.00	_____
-Fuel & Lubrication	13.72	_____	12.95	_____
-Repairs	20.76	_____	20.26	_____
-Drying	5.13	_____	3.60	_____
-Miscellaneous	10.00	_____	18.50	_____
-Operating Interest	3.99	_____	4.49	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>181.28</b>	_____	<b>204.16</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	9.21	_____	8.89	_____
-Machinery Depreciation	24.26	_____	23.31	_____
-Machinery Investment	15.43	_____	14.94	_____
-Land Charge	55.00	_____	55.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>103.90</b>	_____	<b>102.14</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>285.18</b>	_____	<b>306.30</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>72.60</b>	_____	<b>22.11</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.102	_____	0.166	_____
-Indirect Costs	0.058	_____	0.083	_____
-Total Costs	0.160	_____	0.249	_____

Oil 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."

Confection Sunflower notes:

\*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."

## Canola

## Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	2060	_____	25	_____
Market Price	0.19	_____	10.77	_____
<b>MARKET REVENUE</b>	<b>391.40</b>	_____	<b>269.25</b>	_____
<b>DIRECT COSTS</b>				
-Seed	56.50	_____	18.50	_____
-Herbicides	23.10	_____	24.70	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	86.80	_____	35.32	_____
-Crop Insurance	11.00	_____	15.00	_____
-Fuel & Lubrication	12.94	_____	12.58	_____
-Repairs	20.38	_____	21.05	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.77	_____	2.89	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>216.99</b>	_____	<b>131.54</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.41	_____	8.43	_____
-Machinery Depreciation	22.56	_____	22.60	_____
-Machinery Investment	13.36	_____	13.89	_____
-Land Charge	55.00	_____	55.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>99.33</b>	_____	<b>99.92</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>316.32</b>	_____	<b>231.46</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>75.08</b>	_____	<b>37.79</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.105	_____	5.26	_____
-Indirect Costs	0.048	_____	4.00	_____
-Total Costs	0.154	_____	9.26	_____

Canola notes:

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

Flax notes:

\*Fungicide treatment for pasmo has shown good yield response.

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	41		87	
Market Price	6.48		2.60	
<b>MARKET REVENUE</b>	<b>255.68</b>		<b>226.20</b>	
<b>DIRECT COSTS</b>				
-Seed	42.00		12.50	
-Herbicides	32.30		5.40	
-Fungicides	1.50		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	14.26		62.87	
-Crop Insurance	9.50		14.50	
-Fuel & Lubrication	13.23		15.65	
-Repairs	21.73		22.42	
-Drying	0.00		0.00	
-Miscellaneous	9.50		1.50	
-Operating Interest	3.24		3.03	
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>147.26</b>		<b>137.87</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.72		9.56	
-Machinery Depreciation	24.07		25.25	
-Machinery Investment	14.29		15.48	
-Land Charge	55.00		55.00	
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>102.08</b>		<b>105.29</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>249.34</b>		<b>243.16</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>16.34</b>		<b>(16.96)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.59		1.58	
-Indirect Costs	2.49		1.21	
-Total Costs	6.08		2.79	



## Yellow Mustard

## Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	900	_____	950	_____
Market Price	0.270	_____	0.226	_____
<b>MARKET REVENUE</b>	<b>243.00</b>	_____	<b>214.70</b>	_____
<b>DIRECT COSTS</b>				
-Seed	25.20	_____	20.00	_____
-Herbicides	14.00	_____	11.80	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00*	_____	0.00	_____
-Fertilizer	28.49	_____	18.86	_____
-Crop Insurance	25.00	_____	0.00*	_____
-Fuel & Lubrication	11.92	_____	13.83	_____
-Repairs	20.00	_____	21.94	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.97	_____	1.98	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>135.08</b>	_____	<b>89.91</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.17	_____	8.59	_____
-Machinery Depreciation	21.16	_____	22.42	_____
-Machinery Investment	13.33	_____	14.55	_____
-Land Charge	55.00	_____	55.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>97.66</b>	_____	<b>100.56</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>232.74</b>	_____	<b>190.47</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>10.26</b>	_____	<b>24.23</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.150	_____	0.095	_____
-Indirect Costs	0.109	_____	0.105	_____
-Total Costs	0.259	_____	0.200	_____

Yellow Mustard notes:

\*Insecticide seed treatment for flea beetles.

Buckwheat notes:

\*Crop insurance is not available in this region.

## Millet

## Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1600	_____	55*	_____
Market Price	0.14	_____	4.86	_____
<b>MARKET INCOME</b>	<b>224.00</b>	_____	<b>267.30</b>	_____
<b>DIRECT COSTS</b>				
-Seed	11.25	_____	10.80	_____
-Herbicides	3.40	_____	24.50	_____
-Fungicides	0.00	_____	9.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	25.23	_____	75.96	_____
-Crop Insurance	0.00	_____	8.50	_____
-Fuel & Lubrication	13.22	_____	10.43	_____
-Repairs	20.83	_____	17.67	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	8.25	_____
-Operating Interest	1.70	_____	3.71	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>77.13</b>	_____	<b>168.82</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.51	_____	7.83	_____
-Machinery Depreciation	22.28	_____	18.98	_____
-Machinery Investment	13.93	_____	10.83	_____
-Land Charge	55.00	_____	55.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>99.72</b>	_____	<b>92.64</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>176.85</b>	_____	<b>261.46</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>47.15</b>	_____	<b>5.84</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>				
	(lb):		(bu):	
-Direct Costs	0.048	_____	3.07	_____
-Indirect Costs	0.062	_____	1.68	_____
-Total Costs	0.111	_____	4.75	_____

Winter Wheat notes:

\*Yield is per harvested acre. There is some risk of acreage abandonment in spring.



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