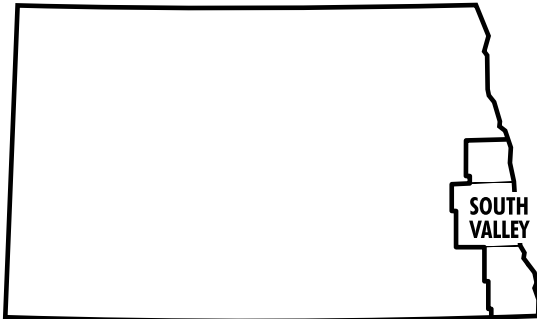




# FARM MANAGEMENT PLANNING GUIDE

January 2021

## Projected 2021 Crop Budgets



# South Valley North Dakota

Ron Haugen, Farm Management Specialist

Note: This region consists of three counties: Cass, Richland and Traill.

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
Barley	9.50/bu
Corn GM	3.00/thou.kern.
Soybean GM	.34/thou.kern.
Dry Beans	.75/thou.kern.
Oil Sunflower	1.55/thou.kern.
Conf. Sunflower	2.75/thou.kern.
Oats	6.25/bu
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

## Malting Barley

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	65	_____	83	_____
Market Price	5.77	_____	4.99*	_____
<b>MARKET REVENUE</b>	<b>375.05</b>	_____	<b>414.17</b>	_____
<b>DIRECT COSTS</b>				
-Seed	23.00	_____	19.00	_____
-Herbicides	21.00	_____	19.70	_____
-Fungicides**	17.00*	_____	17.00**	_____
-Insecticides***	0.00**	_____	0.00	_____
-Fertilizer	82.24	_____	62.39	_____
-Crop Insurance	5.00	_____	4.00	_____
-Fuel & Lubrication	14.82	_____	15.51	_____
-Repairs	21.75	_____	22.01	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.25	_____	8.25	_____
-Operating Interest	4.34	_____	3.78	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>197.40</b>	_____	<b>171.64</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.92	_____	9.21	_____
-Machinery Depreciation	22.78	_____	23.54	_____
-Machinery Investment	14.13	_____	14.48	_____
-Land Charge	127.00	_____	127.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>172.83</b>	_____	<b>174.23</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>370.23</b>	_____	<b>345.87</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>4.82</b>	_____	<b>68.30</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.04	_____	2.07	_____
-Indirect Costs	2.66	_____	2.10	_____
-Total Costs	5.70	_____	4.17	_____

### Spring Wheat notes:

\*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.

### Barley notes:

\*There is risk of not making malting barley quality. Use \$2.89 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 Grain

## Soybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	162		40	
Market Price	3.80		10.37	
<b>MARKET REVENUE</b>	<b>615.60</b>		<b>414.80</b>	
<b>DIRECT COSTS</b>				
-Seed	100.50*		65.80*	
-Herbicides	28.00		35.00	
-Fungicides	0.00		0.00	
-Insecticides	0.00		4.00	
-Fertilizer	106.63		3.30	
-Crop Insurance	11.00		6.00	
-Fuel & Lubrication	20.89		12.19	
-Repairs	29.57		20.00	
-Drying	28.98		0.00	
-Miscellaneous	8.25		1.50	
-Operating Interest	7.51		3.33	
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>341.33</b>		<b>151.12</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	12.25		8.34	
-Machinery Depreciation	37.82		21.66	
-Machinery Investment	22.19		13.07	
-Land Charge	127.00		127.00	
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>199.26</b>		<b>170.07</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>540.59</b>		<b>321.19</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>75.01</b>		<b>93.61</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	2.11		3.78	
-Indirect Costs	1.23		4.25	
-Total Costs	3.34		8.03	

Corn notes:

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

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.

## Drybeans

## Oil Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	2050		1990	
Market Price	0.30		0.205	
<b>MARKET REVENUE</b>	<b>615.00</b>		<b>407.95</b>	
<b>DIRECT COSTS</b>				
-Seed	61.88		37.20	
-Herbicides	46.90*		27.70	
-Fungicides	20.00**		0.00*	
-Insecticides	0.00		5.00**	
-Fertilizer	49.15		46.50	
-Crop Insurance	15.00		10.00	
-Fuel & Lubrication	13.64		14.18	
-Repairs	22.93		20.66	
-Drying	0.00		6.39	
-Miscellaneous	16.75		16.75	
-Operating Interest	5.54		4.15	
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>251.79</b>		<b>188.53</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	9.02		9.41	
-Machinery Depreciation	26.12		25.17	
-Machinery Investment	15.53		15.85	
-Land Charge	127.00		127.00	
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>177.67</b>		<b>177.43</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>429.46</b>		<b>365.96</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>185.54</b>		<b>41.99</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.123		0.095	
-Indirect Costs	0.087		0.089	
-Total Costs	0.209		0.184	

**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 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

# Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1650	_____	100	_____
Market Price	0.271	_____	2.75	_____
<b>MARKET REVENUE</b>	<b>447.15</b>	_____	<b>275.00</b>	_____
<b>DIRECT COSTS</b>				
-Seed	55.00	_____	12.50	_____
-Herbicides	29.90	_____	5.40	_____
-Fungicides	0.00*	_____	0.00	_____
-Insecticides	10.00**	_____	0.00	_____
-Fertilizer	36.62	_____	64.94	_____
-Crop Insurance	15.00	_____	9.50	_____
-Fuel & Lubrication	13.71	_____	17.12	_____
-Repairs	20.35	_____	23.23	_____
-Drying	5.22	_____	0.00	_____
-Miscellaneous	25.25	_____	8.25	_____
-Operating Interest	4.75	_____	3.17	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>215.80</b>	_____	<b>144.11</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	9.21	_____	9.84	_____
-Machinery Depreciation	24.59	_____	25.55	_____
-Machinery Investment	15.55	_____	15.96	_____
-Land Charge	127.00	_____	127.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>176.35</b>	_____	<b>178.35</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>392.15</b>	_____	<b>322.46</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>55.00</b>	_____	<b>(47.46)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>	_____	<b>(bu):</b>	_____
-Direct Costs	0.131	_____	1.44	_____
-Indirect Costs	0.107	_____	1.78	_____
-Total Costs	0.238	_____	3.22	_____

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."

# Winter Wheat

	Per Acre	Your Figures
Market Yield	60*	_____
Market Price	5.03	_____
<b>MARKET REVENUE</b>	<b>301.80</b>	_____
<b>DIRECT COSTS</b>		
-Seed	11.70	_____
-Herbicides	24.50	_____
-Fungicides	9.00	_____
-Insecticides	0.00	_____
-Fertilizer	75.05	_____
-Crop Insurance	5.00	_____
-Fuel & Lubrication	13.21	_____
-Repairs	20.03	_____
-Drying	0.00	_____
-Miscellaneous	8.25	_____
-Operating Interest	3.75	_____
	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>170.49</b>	_____
<b>INDIRECT (FIXED) COSTS</b>		
-Misc. Overhead	8.50	_____
-Machinery Depreciation	21.52	_____
-Machinery Investment	12.89	_____
-Land Charge	127.00	_____
	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>169.91</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>340.40</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(38.60)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>	_____
-Direct Costs	2.84	_____
-Indirect Costs	2.83	_____
-Total Costs	5.67	_____

Winter Wheat notes:

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

NDSU Extension does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names. NDSU encourages you to use and share this content, but please do so under the conditions of our Creative Commons license. You may copy, distribute, transmit and adapt this work as long as you give full attribution, don't use the work for commercial purposes and share your resulting work similarly. For more information, visit [www.ag.ndsu.edu/agcomm/creative-commons](http://www.ag.ndsu.edu/agcomm/creative-commons).

For more information on this and other topics, see [\*\*www.ndsu.edu/extension\*\*](http://www.ndsu.edu/extension)

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708, [ndsu.eoaa@ndsu.edu](mailto:ndsu.eoaa@ndsu.edu). This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881. 150-1-21