

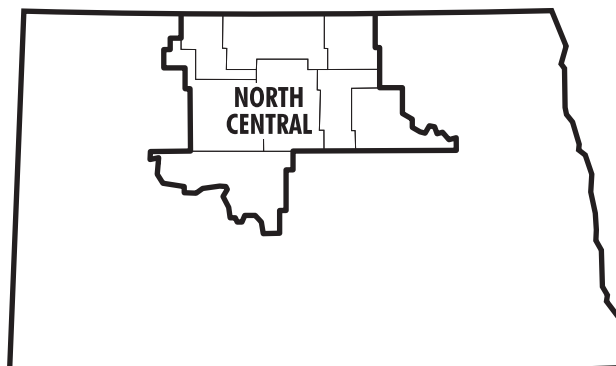
# Farm Management Planning Guide



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## Projected 2010 Crop Budgets North Central North Dakota

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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

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 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.

**NDSU**  
Extension Service

North Dakota State University, Fargo, ND 58108

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 \$9.00 per acre when averaged over all crop acreage. Counter-cyclical 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 - 30 lb  
 Phosphorus - 8 ppm  
 Potassium - 363 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/Bt 2.56/thou.kern.  
 Corn grain RR 2.15/thou.kern.  
 Soybean RR .285/thou.kern.  
 Dry Beans .84/lb  
 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  
 Buckwheat .50/lb  
 Millet .22/lb  
 Winter Wheat 7.50/bu  
 Rye 5.20/bu

### 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. MPC 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

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	35		34	
Market Price	5.36		6.07*	
<b>MARKET INCOME</b>	187.60		206.38	
<b>DIRECT COSTS</b>				
-Seed	12.60		16.50	
-Herbicides	19.80		19.80	
-Fungicides**	5.50		5.50	
-Insecticides***	0.00		0.00	
-Fertilizer	36.26		34.94	
-Crop Insurance	9.90		9.00	
-Fuel & Lubrication	11.63		11.60	
-Repairs	13.87		13.85	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	2.92		2.96	
<b>SUM OF LISTED DIRECT COSTS</b>	113.98		115.65	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.07		5.06	
-Machinery Depreciation	15.58		15.55	
-Machinery Investment	9.23		9.21	
-Land Charge	39.80		39.80	
<b>SUM OF LISTED INDIRECT COSTS</b>	69.68		69.62	
<b>SUM OF ALL LISTED COSTS</b>	183.66		185.26	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	3.94		21.12	
<b>LISTED COSTS PER BUDGET UNIT</b>	(bu):		(bu):	
-Direct Costs	3.26		3.40	
-Indirect Costs	1.99		2.05	
-Total Costs	5.25		5.45	

**Wheat notes:**

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

\*\*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 consistently 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.

\*\*\*Wheat midge and/or 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	56	_____	80	_____
Market Price	3.44*	_____	3.45	_____
<b>MARKET INCOME</b>	<b>192.64</b>	_____	<b>276.00</b>	_____
<b>DIRECT COSTS</b>				
-Seed	9.90	_____	55.76*	_____
-Herbicides	17.30	_____	14.00	_____
-Fungicides	1.50	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	35.90	_____	43.81	_____
-Crop Insurance	4.10	_____	12.80**	_____
-Fuel & Lubrication	13.58	_____	16.45	_____
-Repairs	15.10	_____	15.93	_____
-Drying	0.00	_____	16.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.60	_____	4.63	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>101.47</b>	=====	<b>180.87</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.70	_____	6.62	_____
-Machinery Depreciation	17.78	_____	22.95	_____
-Machinery Investment	10.70	_____	13.19	_____
-Land Charge	39.80	_____	39.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>73.99</b>	=====	<b>82.56</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>175.46</b>	_____	<b>263.43</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>17.18</b>	_____	<b>12.57</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	1.81	_____	2.26	_____
-Indirect Costs	1.32	_____	1.03	_____
-Total Costs	3.13	_____	3.29	_____

### Barley notes:

\*On average, about 35% of production is feed quality.  
Use \$2.80 estimate for feed barley price.

### Corn notes:

\*RR/Bt corn is planted on 80 percent of acres and RR corn without Bt Trait is on 20 percent of acres for corn borer refuge. Cost includes insecticide seed treatment for wireworm, rootworm, white grub and suppression of cutworm.

\*\*Crop insurance only available by written agreement in some counties.

## Soybeans

## Drybeans\*

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	26	_____	1270	_____
Market Price	8.58	_____	0.26	_____
<b>MARKET INCOME</b>	<b>223.08</b>	_____	<b>330.20</b>	_____
<b>DIRECT COSTS</b>				
-Seed	49.87*	_____	42.00	_____
-Herbicides	14.00	_____	35.50**	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00**	_____	0.00	_____
-Fertilizer	4.65	_____	23.57	_____
-Crop Insurance	12.80	_____	20.20	_____
-Fuel & Lubrication	9.56	_____	14.14	_____
-Repairs	12.47	_____	15.65	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	6.00	_____	4.00	_____
-Operating Interest	2.87	_____	4.07	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>112.22</b>	=====	<b>159.13</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.68	_____	5.57	_____
-Machinery Depreciation	14.55	_____	19.78	_____
-Machinery Investment	8.17	_____	11.27	_____
-Land Charge	39.80	_____	39.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>67.20</b>	=====	<b>76.42</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>179.42</b>	_____	<b>235.55</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>43.66</b>	_____	<b>94.65</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(lb):</b>	
-Direct Costs	4.32	_____	0.13	_____
-Indirect Costs	2.58	_____	0.06	_____
-Total Costs	6.90	_____	0.19	_____

### Soybean notes:

\*Roundup (glyphosate) resistant soybeans.

\*\*Soybean aphid and/or spider mite insecticide would cost about \$8 per acre plus application.

### Drybeans notes:

\*Acreage limitations exist under the farm bill. The general rule is drybean acres can not be planted on base acres. If farm or producer has drybean history, drybean can be planted on base acres but government payments on those acres will be forfeited.

\*\*Includes dessicant prior to straight cutting.

## Oil Sunflower

## Confectionery Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1450		1330	
Market Price	0.152		0.228	
<b>MARKET INCOME</b>	<b>220.40</b>		<b>303.24</b>	
<b>DIRECT COSTS</b>				
-Seed	24.57*		36.90*	
-Herbicides	27.00		27.00	
-Fungicides	0.00**		0.00**	
-Insecticides	6.00***		12.00***	
-Fertilizer	28.66		25.45	
-Crop Insurance	8.10		10.60	
-Fuel & Lubrication	13.30		13.16	
-Repairs	13.41		13.35	
-Drying	2.90		2.66	
-Miscellaneous	7.50		13.50	
-Operating Interest	3.45		4.06	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>134.89</b>		<b>158.67</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.54		5.49	
-Machinery Depreciation	17.20		17.07	
-Machinery Investment	10.47		10.41	
-Land Charge	39.80		39.80	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>73.00</b>		<b>72.77</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>207.89</b>		<b>231.44</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>12.51</b>		<b>71.80</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.09		0.12	
-Indirect Costs	0.05		0.05	
-Total Costs	0.14		0.17	

### Oil Sunflower notes:

\*Cost includes seed treatment for control of wireworm and flea beetle.

\*\*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 \$6 is under "Miscellaneous." Insecticide treatment for cutworms would cost about \$5 plus application (usually tank mixed with herbicide).

### Confectionery Sunflower notes:

\*Cost includes seed treatment for control of wireworm and flea beetle.

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

\*\*\*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	1360	_____	19	_____
Market Price	0.172	_____	8.32	_____
<b>MARKET INCOME</b>	<b>233.92</b>	_____	<b>158.08</b>	_____
<b>DIRECT COSTS</b>				
-Seed	40.00*	_____	8.75	_____
-Herbicides	14.00	_____	24.50	_____
-Fungicides	0.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	44.28	_____	19.63	_____
-Crop Insurance	12.40	_____	6.70	_____
-Fuel & Lubrication	11.94	_____	11.13	_____
-Repairs	14.03	_____	13.77	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.63	_____	2.26	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>141.77</b>	=====	<b>88.24</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.07	_____	4.89	_____
-Machinery Depreciation	16.14	_____	15.20	_____
-Machinery Investment	9.49	_____	9.07	_____
-Land Charge	39.80	_____	39.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>70.49</b>	=====	<b>68.95</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>212.27</b>	_____	<b>157.19</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>21.65</b>	_____	<b>0.89</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.10	_____	4.64	_____
-Indirect Costs	0.05	_____	3.63	_____
-Total Costs	0.16	_____	8.27	_____

**Canola notes:**

\*Cost includes insecticide seed treatment for flea beetles.

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

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	33		57	
Market Price	6.00*		2.19	
<b>MARKET INCOME</b>	<b>198.00</b>		<b>124.83</b>	
<b>DIRECT COSTS</b>				
-Seed	31.50		8.50	
-Herbicides	25.50		7.50	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	6.84		30.05	
-Crop Insurance	7.40		7.20	
-Fuel & Lubrication	11.07		13.62	
-Repairs	14.29		15.11	
-Drying	0.00		0.00	
-Miscellaneous	7.00		1.50	
-Operating Interest	2.72		2.19	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>106.31</b>		<b>85.67</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.06		5.72	
-Machinery Depreciation	16.77		17.82	
-Machinery Investment	9.22		10.72	
-Land Charge	39.80		39.80	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>70.85</b>		<b>74.05</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>177.16</b>		<b>159.72</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>20.84</b>		<b>(34.89)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.22		1.50	
-Indirect Costs	2.15		1.30	
-Total Costs	5.37		2.80	

**Field Pea notes:**

\*Food quality price. Use \$3.25 price estimate for feed quality peas.



## Lentils

## Yellow Mustard

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1250	_____	950	_____
Market Price	0.24	_____	0.234	_____
<b>MARKET INCOME</b>	<b>300.00</b>	_____	<b>222.30</b>	_____
<b>DIRECT COSTS</b>				
-Seed	28.00	_____	11.40	_____
-Herbicides	32.50*	_____	15.00	_____
-Fungicides	0.00**	_____	0.00	_____
-Insecticides	0.00	_____	6.00*	_____
-Fertilizer	4.32	_____	24.37	_____
-Crop Insurance	17.00	_____	0.00	_____
-Fuel & Lubrication	11.07	_____	12.14	_____
-Repairs	14.88	_____	14.44	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	7.00	_____	1.50	_____
-Operating Interest	3.01	_____	2.23	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>117.78</b>	=====	<b>87.08</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.14	_____	5.17	_____
-Machinery Depreciation	17.05	_____	16.53	_____
-Machinery Investment	9.51	_____	10.08	_____
-Land Charge	39.80	_____	39.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>71.50</b>	=====	<b>71.59</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>189.29</b>	_____	<b>158.66</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>110.71</b>	_____	<b>63.64</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>				
	(lb):		(lb):	
-Direct Costs	0.09	_____	0.09	_____
-Indirect Costs	0.06	_____	0.08	_____
-Total Costs	0.15	_____	0.17	_____

### Lentil notes:

\*Includes pre-harvest dessicant.

\*\*Fungicide treatment for ascochyta would cost about \$16 plus application.

### Yellow Mustard notes:

\*Insecticide seed treatment for flea beetles.

## Buckwheat

## Millet

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	950	_____	1300	_____
Market Price	0.192	_____	0.065	_____
<b>MARKET INCOME</b>	<b>182.40</b>	_____	<b>84.50</b>	_____
<b>DIRECT COSTS</b>				
-Seed	25.00	_____	5.00	_____
-Herbicides	13.50	_____	6.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	14.45	_____	14.40	_____
-Crop Insurance	0.00	_____	0.00	_____
-Fuel & Lubrication	11.79	_____	12.48	_____
-Repairs	13.96	_____	14.59	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.11	_____	1.42	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>82.30</b>	=====	<b>55.39</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.05	_____	5.30	_____
-Machinery Depreciation	16.15	_____	16.82	_____
-Machinery Investment	9.53	_____	10.23	_____
-Land Charge	39.80	_____	39.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>70.53</b>	=====	<b>72.14</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>152.83</b>	_____	<b>127.53</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>29.57</b>	_____	<b>(43.03)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.09	_____	0.04	_____
-Indirect Costs	0.07	_____	0.06	_____
-Total Costs	0.16	_____	0.10	_____

**notes:**

# Winter Wheat

# Rye

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	45*	_____	40	_____
Market Price	4.64	_____	3.46	_____
<b>MARKET INCOME</b>	<b>208.80</b>	_____	<b>138.40</b>	_____
<b>DIRECT COSTS</b>				
-Seed	7.50	_____	6.24	_____
-Herbicides	16.80	_____	3.50	_____
-Fungicides	9.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	49.54	_____	42.90	_____
-Crop Insurance	9.90	_____	5.40	_____
-Fuel & Lubrication	11.53	_____	11.40	_____
-Repairs	13.28	_____	12.96	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	6.00	_____	6.00	_____
-Operating Interest	3.24	_____	2.32	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>126.80</b>	=====	<b>90.72</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.95	_____	4.91	_____
-Machinery Depreciation	14.97	_____	14.83	_____
-Machinery Investment	8.51	_____	8.53	_____
-Land Charge	39.80	_____	39.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>68.23</b>	=====	<b>68.07</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>195.03</b>	_____	<b>158.79</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>13.77</b>	_____	<b>(20.39)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	2.82	_____	2.27	_____
-Indirect Costs	1.52	_____	1.70	_____
-Total Costs	4.33	_____	3.97	_____

**Winter Wheat notes:**

\*Yield is per harvested acre, 2002-2008 acreage abandonment averaged 7%.

# 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
Soybeans str. cut 30 ft	32300	1000ac	20	2963	1.46 /ac	0.79 /ac	0.50 /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	NH <sub>3</sub> Application	48	5.0	24.7	\$ 1.69	\$ 1.02
2	Pick Rocks				0.43	0.49
3	Spray (burn-down)	90	6.0	42.5	0.30	0.56
4	Plant	40	5.0	17.0	2.46	5.46
5	Spray (120%)	90	6.0	42.5	0.36	0.67
6	Combine	30	4.0	10.2	2.86	3.92
7	Heavy Harrow	70	5.5	39.7	0.51	0.55
	Trucks*				1.28	0.58
	Grain auger (pto)				0.17	0.08
	Pickup truck allocation				1.56	0.53
Total					11.63	13.87

\* Truck costs will vary between crops.

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

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