

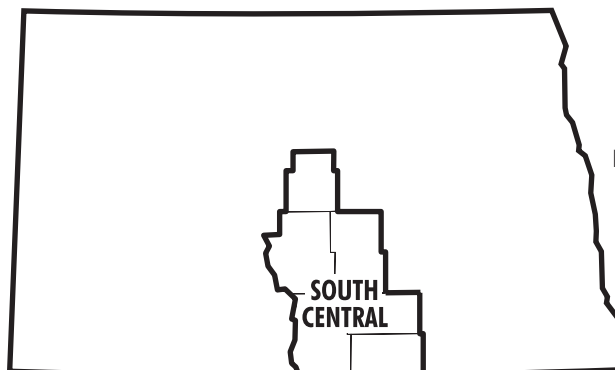
# Farm Management Planning Guide



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## Projected 2005 Crop Budgets South Central North Dakota

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Note: Starting in 2005, the South Central region was redefined. It consists of six counties: Burleigh, Emmons, Kidder, Logan, McIntosh and Sheridan.

The 2005 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, or rental, expense of machinery and land, and real estate tax if land is owned, respectively.

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 2005 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 58105

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 2002 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 about \$6.50 per acre when averaged over all crop acreage. Counter-cyclical payments will occur if the national average price of wheat, feed grains or soybeans is below a certain level. Counter-cyclical payment rates per bushel of \$0.20 for wheat, \$0.36 for soybeans, \$0.25 for corn, and the maximum, \$0.15 for barley and \$0.09 for oats are expected with the price levels used in the budgets. The payment rate times payment yield is paid on 85% of that crop's base acres. Counter-cyclical payments will vary by a farm's base acres and payment yields and will dissipate if prices rise.

## Primary Assumptions:

**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 1997-2003, after the low and high yield years are removed. Yields for field peas, safflower, yellow mustard, buckwheat, millet and garbanzo beans 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.

**Soil test - recrop:**  
 Nitrogen - 40 lb  
 Phosphorus - 9 ppm  
 Potassium - 328 ppm

## Fertilizer prices:

Nitrogen - .262/lb  
 Phosphorus - .225/lb  
 Potassium - .18/lb

## Seed Prices:

Spring Wheat 5.30/bu  
 Durum 6.00/bu  
 Barley 4.20/bu  
 Corn grain RR 1.42/thous.kern.  
 Oil Sunflower .66/thou.kern.  
 Conf. Sunflower 1.08/thou.kern.  
 Soybean RR 28/50 lbs  
 Dry Beans .65/lb  
 Flax 14.00/bu  
 Canola 3.10/lb  
 Oats 3.40/bu  
 Field Peas 5.75/bu  
 Millet .17/lb  
 Buckwheat .28/lb  
 Mustard .85/lb  
 Rye 4.00/bu  
 Winter Wheat 4.50/bu

## Fuel prices:

Diesel 1.60/gal  
 Gas 1.90/gal

**Lubrication charge:** 15% of fuel cost

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

Direct costs charged 6.50% interest for 6 month period.

Costs of moving crop to storage are included.

Crops assumed to be planted on dryland recrop ground.

**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, \$1 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	26	_____	25	_____
Market Price:	3.37	_____	3.74	_____
<b>MARKET INCOME</b>	<b>87.62</b>	_____	<b>93.50</b>	_____
<b>DIRECT COSTS</b>				
-Seed	7.95	_____	9.00	_____
-Herbicides	9.20	_____	9.20	_____
-Fungicides	1.50	_____	1.50	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	15.22	_____	14.23	_____
-Crop Insurance	3.20	_____	3.40	_____
-Fuel & Lubrication	7.24	_____	7.22	_____
-Repairs	8.88	_____	8.86	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.00	_____	1.00	_____
-Operating Interest	1.76	_____	1.77	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>55.94</b>	_____	<b>56.18</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.17	_____	3.16	_____
-Machinery Depreciation	11.09	_____	11.06	_____
-Machinery Investment	6.57	_____	6.56	_____
-Land Charge	26.40	_____	26.40	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>47.24</b>	_____	<b>47.19</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>103.19</b>	_____	<b>103.36</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(15.57)</b>	_____	<b>(9.86)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu) :</b>		<b>(bu) :</b>	
-Direct Costs	2.15	_____	2.25	_____
-Indirect Costs	1.82	_____	1.89	_____
-Total Costs	3.97	_____	4.13	_____

**notes:**

\*Early season foliar fungicide would cost about \$3-\$5 and late season fungicide would cost about \$9.50 plus application. Recent 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.

# Malting Barley

# Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	49	_____	77	_____
Market Price:	2.19*	_____	1.85	_____
<b>MARKET INCOME</b>	<b>107.31</b>	_____	<b>142.45</b>	_____
<b>DIRECT COSTS</b>				
-Seed	6.30	_____	32.66*	_____
-Herbicides	9.20	_____	7.75	_____
-Fungicides	1.25	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	19.36	_____	27.84	_____
-Crop Insurance	3.80	_____	0.00**	_____
-Fuel & Lubrication	8.37	_____	11.56	_____
-Repairs	9.85	_____	13.28	_____
-Drying	0.00	_____	10.40	_____
-Miscellaneous	1.00	_____	1.00	_____
-Operating Interest	1.92	_____	3.69	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>61.05</b>	_____	<b>107.88</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.68	_____	4.98	_____
-Machinery Depreciation	12.66	_____	19.85	_____
-Machinery Investment	7.67	_____	11.41	_____
-Land Charge	26.40	_____	26.40	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>50.41</b>	_____	<b>62.64</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>111.46</b>	_____	<b>170.53</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(4.15)</b>	_____	<b>(28.08)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu) :</b>		<b>(bu) :</b>	
-Direct Costs	1.25	_____	1.40	_____
-Indirect Costs	1.03	_____	0.81	_____
-Total Costs	2.27	_____	2.21	_____

### Barley notes:

\*Use loan rate of about \$1.65 for feed barley price.

### Corn notes:

\*Roundup (glyphosate) resistant corn.

\*\*Crop insurance only available by written agreement.

## Soybeans

## Drybeans\*

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	23	_____	1300**	_____
Market Price:	4.56	_____	0.175	_____
<b>MARKET INCOME</b>	<b>104.88</b>	_____	<b>227.50</b>	_____
<b>DIRECT COSTS</b>				
-Seed	32.59*	_____	32.50	_____
-Herbicides	7.75*	_____	21.22	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	4.65	_____	16.14	_____
-Crop Insurance	4.90	_____	12.60	_____
-Fuel & Lubrication	7.04	_____	9.73	_____
-Repairs	8.94	_____	11.33	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.00	_____
-Operating Interest	2.19	_____	3.40	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>69.56</b>	_____	<b>107.92</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.20	_____	4.06	_____
-Machinery Depreciation	11.52	_____	14.97	_____
-Machinery Investment	6.74	_____	9.64	_____
-Land Charge	26.40	_____	26.40	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>47.85</b>	_____	<b>55.07</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>117.41</b>	_____	<b>162.99</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(12.53)</b>	_____	<b>64.51</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu) :</b>		<b>(lb) :</b>	
-Direct Costs	3.02	_____	0.08	_____
-Indirect Costs	2.08	_____	0.04	_____
-Total Costs	5.10	_____	0.13	_____

### Soybean notes:

\*Roundup (glyphosate) resistant soybeans. Per acre cost of conventional soybean seed would be about \$11 for public varieties and \$18 for private varieties, and herbicide costs would be about \$18.

### Drybean notes:

\*Acreage limitations exist under the 2002 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.

\*\*Average yield, 1997-2002, includes irrigated acreage.

## Oil Sunflower

## Confectionery Sunflowers

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1310	_____	1230	_____
Market Price:	0.128	_____	0.174	_____
<b>MARKET INCOME</b>	<b>167.68</b>	_____	<b>214.02</b>	_____
<b>DIRECT COSTS</b>				
-Seed	14.52	_____	19.44	_____
-Herbicides	14.00	_____	14.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides*	5.00	_____	11.00	_____
-Fertilizer	15.62	_____	14.03	_____
-Crop Insurance	7.00	_____	9.40	_____
-Fuel & Lubrication	9.41	_____	9.36	_____
-Repairs	10.57	_____	10.54	_____
-Drying	2.62	_____	2.46	_____
-Miscellaneous	1.00	_____	5.75	_____
-Operating Interest	2.59	_____	3.12	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>82.33</b>	_____	<b>99.09</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.01	_____	3.98	_____
-Machinery Depreciation	14.30	_____	14.23	_____
-Machinery Investment	8.97	_____	8.93	_____
-Land Charge	26.40	_____	26.40	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>53.68</b>	_____	<b>53.54</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>136.01</b>	_____	<b>152.63</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>31.67</b>	_____	<b>61.39</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb) :</b>		<b>(lb) :</b>	
-Direct Costs	0.06	_____	0.08	_____
-Indirect Costs	0.04	_____	0.04	_____
-Total Costs	0.10	_____	0.12	_____

**Oil Sunflower notes:**

\*Seed treatment for wireworm and flea beetle.  
 Sunflower beetle insecticide would cost about \$2 plus application.  
 Red seed weevil insecticide would cost about \$6 plus application.

**Confectionery Sunflower notes:**

\*Seed treatment for wireworm and flea beetle at \$5 and one treatment of insecticide for red seed weevil at \$6 plus application. Custom application cost of \$4.75 is under "Miscellaneous." A second treatment is often needed. Insecticide for sunflower beetle would cost about \$2 plus application.

## Canola

## Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1200		16	
Market Price:	0.10		5.57	
<b>MARKET INCOME</b>	<b>120.00</b>		<b>89.12</b>	
<b>DIRECT COSTS</b>				
-Seed	17.05		9.80	
-Herbicides	16.00		14.71	
-Fungicides	0.00*		0.00	
-Insecticides	7.00		0.00	
-Fertilizer	26.97**		8.27	
-Crop Insurance	5.00		4.00	
-Fuel & Lubrication	7.50		7.37	
-Repairs	9.02		8.93	
-Drying	0.00		0.00	
-Miscellaneous	1.00		1.00	
-Operating Interest	2.91		1.76	
	=====		=====	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>92.46</b>		<b>55.84</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.21		3.13	
-Machinery Depreciation	11.46		11.26	
-Machinery Investment	6.78		6.68	
-Land Charge	26.40		26.40	
	=====		=====	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>47.84</b>		<b>47.47</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>140.30</b>		<b>103.32</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(20.30)</b>		<b>(14.20)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb) :</b>		<b>(bu) :</b>	
-Direct Costs	0.08		3.49	
-Indirect Costs	0.04		2.97	
-Total Costs	0.12		6.46	

**Canola notes:**

\*Fungicide for white mold would cost about \$16 plus application.

\*\*Fertilizer cost includes 20 lbs sulfur at \$.26/lb.

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	30		55	
Market Price:	3.50*		1.22	
<b>MARKET INCOME</b>	<b>105.00</b>		<b>67.10</b>	
<b>DIRECT COSTS</b>				
-Seed	17.25**		6.80	
-Herbicides	14.64		1.88	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	3.79		18.30	
-Crop Insurance	4.50		4.80	
-Fuel & Lubrication	7.91		8.50	
-Repairs	9.85		9.93	
-Drying	0.00		0.00	
-Miscellaneous	2.00		1.00	
-Operating Interest	1.95		1.66	
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>61.89</b>		<b>52.87</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.39		3.76	
-Machinery Depreciation	12.74		12.84	
-Machinery Investment	7.21		7.76	
-Land Charge	26.40		26.40	
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>49.74</b>		<b>50.75</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>111.63</b>		<b>103.62</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(6.63)</b>		<b>(36.52)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu) :</b>		<b>(bu) :</b>	
-Direct Costs	2.06		0.96	
-Indirect Costs	1.66		0.92	
-Total Costs	3.72		1.88	

**Field Pea notes:**

\*Loan rate is used because market price is expected to be lower.

\*\*Producer's own seed is used. Seed cost for new grower would be about \$27.



# Yellow Mustard

# Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	900	_____	850	_____
Market Price:	0.139	_____	0.117	_____
<b>MARKET INCOME</b>	<b>125.10</b>	_____	<b>99.45</b>	_____
<b>DIRECT COSTS</b>				
-Seed	10.20	_____	14.00	_____
-Herbicides	5.95	_____	0.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	13.71	_____	5.76	_____
-Crop Insurance	0.00	_____	0.00	_____
-Fuel & Lubrication	7.18	_____	8.22	_____
-Repairs	8.50	_____	9.37	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.00	_____	1.00	_____
-Operating Interest	1.51	_____	1.25	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>48.06</b>	_____	<b>39.59</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.00	_____	3.23	_____
-Machinery Depreciation	10.71	_____	11.56	_____
-Machinery Investment	6.24	_____	6.93	_____
-Land Charge	26.40	_____	26.40	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>46.36</b>	_____	<b>48.12</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>94.41</b>	_____	<b>87.71</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>30.69</b>	_____	<b>11.74</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb) :</b>		<b>(lb) :</b>	
-Direct Costs	0.05	_____	0.05	_____
-Indirect Costs	0.05	_____	0.06	_____
-Total Costs	0.10	_____	0.10	_____

**notes:**

# Millet Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1500	_____	39*	_____
Market Price:	0.063	_____	3.09	_____
<b>MARKET INCOME</b>	<b>94.50</b>	_____	<b>120.51</b>	_____
<b>DIRECT COSTS</b>				
-Seed	4.25	_____	4.50	_____
-Herbicides	1.50	_____	5.38	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	10.56	_____	28.07	_____
-Crop Insurance	0.00	_____	3.20	_____
-Fuel & Lubrication	7.99	_____	6.67	_____
-Repairs	9.58	_____	8.42	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.00	_____	1.10	_____
-Operating Interest	1.13	_____	1.86	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>36.01</b>	_____	<b>59.20</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.45	_____	3.18	_____
-Machinery Depreciation	12.09	_____	10.91	_____
-Machinery Investment	7.39	_____	6.25	_____
-Land Charge	26.40	_____	26.40	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>49.33</b>	_____	<b>46.74</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>85.34</b>	_____	<b>105.93</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>9.16</b>	_____	<b>14.58</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb) :</b>		<b>(bu) :</b>	
-Direct Costs	0.02	_____	1.52	_____
-Indirect Costs	0.03	_____	1.20	_____
-Total Costs	0.06	_____	2.72	_____

**Winter Wheat notes:**

\*Yield is per harvested acre, 1997-2003 acreage abandonment averaged 21%.

# Rye

	Per Acre	Your Figures
Market Yield	38	_____
Market Price:	1.80	_____
 MARKET INCOME	 68.40	_____
 DIRECT COSTS		
-Seed	4.80	_____
-Herbicides	0.00	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	27.08	_____
-Crop Insurance	5.60	_____
-Fuel & Lubrication	9.03	_____
-Repairs	9.87	_____
-Drying	0.00	_____
-Miscellaneous	1.00	_____
-Operating Interest	1.86	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	59.24	_____
 INDIRECT (FIXED) COSTS		
-Misc. Overhead	3.55	_____
-Machinery Depreciation	12.45	_____
-Machinery Investment	7.52	_____
-Land Charge	26.40	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	49.93	_____
 SUM OF ALL LISTED COSTS	 109.17	_____
 RETURN TO LABOR & MANAGEMENT	 (40.77)	_____
 LISTED COSTS PER BUDGET UNIT	 (bu) :	
-Direct Costs	1.56	_____
-Indirect Costs	1.31	_____
-Total Costs	2.87	_____

**notes:**

# 2005 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
2WD 100HP Tractor	50500	400 hr	20	16334	4.27/hr	3.76/hr	5.16/hr	
2WD 160HP Tractor	83300	500 hr	15	24653	7.82/hr	4.86/hr	8.48/hr	
4WD 280HP Tractor	114700	500 hr	15	33953	10.77/hr	6.69/hr	6.68/hr	
SP Combine (base unit)	132900	250 hr	12	33041	33.29/hr	14.93/hr	21.56/hr	
Tandem Truck (used)	30000	150 hr	15	10000	8.89/hr	6.00/hr	5.33/hr	
Semi & Trailer (used)	35000	150 hr	10	10000	16.67/hr	6.75/hr	6.67/hr	
Pick-up Truck	19000	300 hr	10	4000	5.00/hr	1.73/hr	2.47/hr	
Swather 25 ft	16000	1000 ac	20	3788	0.61/ac	0.45/ac	0.28/ac	12.1
Sprayer 90 ft	24500	2200 ac	15	9709	0.45/ac	0.35/ac	0.31/ac	42.5
Chisel Plow 35 ft	24300	1600 ac	15	14204	0.42/ac	0.54/ac	0.65/ac	16.2
Field Cultivator 45 ft	30400	3000 ac	15	16837	0.30/ac	0.35/ac	0.54/ac	23.2
Tandem Disk 28 ft	23300	800 ac	20	6675	1.04/ac	0.84/ac	0.66/ac	12.2
Harrow (springtooth) 60 ft	9900	1200 ac	20	5687	0.18/ac	0.29/ac	0.13/ac	34.0
Heavy Harrow 70 ft	21100	2000 ac	20	12345	0.22 /ac	0.38 /ac	0.24 /ac	39.7
Row-crop cultivator 12-30	10100	800 ac	15	5563	0.38/ac	0.44/ac	0.38/ac	11.6
Air Seeder 35 ft	68700	1800 ac	12	32174	1.69/ac	1.26/ac	2.70/ac	14.8
Planter 12-30	37200	800 ac	20	12397	1.55/ac	1.40/ac	2.06/ac	10.6
Bean cutter 6-30	8000	400 ac	20	2282	0.72/ac	0.58/ac	0.44/ac	6.5
Corn head 6-30	23400	400 ac	20	2192	2.65/ac	1.44/ac	0.83/ac	4.5
Grain head w/ptu	10200	800 ac	15	2124	0.67/ac	0.35/ac	0.19/ac	8.5
Grain str. cut 25 ft	13800	1200 ac	10	4729	0.76/ac	0.35/ac	0.25/ac	8.5
Head w/sunf pans 25 ft	17200	400 ac	20	1813	1.92/ac	1.07/ac	0.32/ac	8.5
Soybeans str. cut 25 ft	20000	800 ac	20	1852	1.13/ac	0.61/ac	0.37/ac	8.5
Head w/drybean pickups	20000	400 ac	20	2109	2.24/ac	1.24/ac	0.37/ac	8.5
Rock picker	14600	50 hr	20	4611	0.33/ac	0.29/ac	0.21/ac	29.1
Grain auger	6300	50 hr	20	500	5.80/hr	3.06/hr	0.62/hr	

## Example Sequence of Operations

Field operations sequence for spring wheat, durum, barley and oats

OP. NO.	DESCRIPTION	(FEET) WIDTH	(MPH) SPEED	(AC/HR) Fld Cap	(\$/AC) FUEL & LUBE	(\$/AC) EST. REPAIRS
1	Field Cultivate	45	5.0	23.2	\$ 0.98	\$ 0.83
2	Pick Rocks				0.28	0.39
3	Plant	35	5.0	14.8	1.53	3.15
4	Spray	90	6.0	42.5	0.19	0.44
5	Combine str. cut	25	4.0	8.5	2.20	2.79
6	Chisel Plow	35	4.5	16.2	0.33	0.45
	Trucks*				0.53	0.37
	Grain auger (pto)				0.11	0.01
	Pickup truck allocation				1.10	0.45
	<b>Total</b>				<b>7.24</b>	<b>8.88</b>

\* 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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