

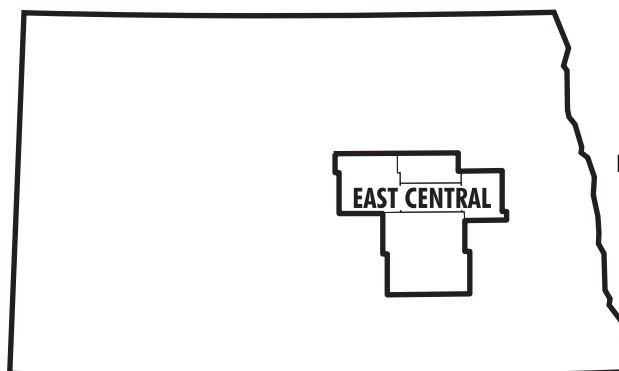
# Farm Management Planning Guide



December 2007

## Projected 2008 Crop Budgets East Central North Dakota

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Note: This region consists of five counties: Eddy, Foster, Griggs, Stutsman and Wells.

The 2008 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 2008 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.

The 2002 farm bill has expired and a new farm bill had not yet passed at the time of this publication. Projected crop prices are higher than average and no government payments, coupled to 2008 production, are expected.

### 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 2000-2006, after the low and high yield years are removed. Yields for safflower, yellow mustard, buckwheat, millet, rye, lentils 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 - 40 lb  
 Phosphorus - 8 ppm  
 Potassium - 280 ppm

### Fertilizer prices:

Nitrogen - .44/lb  
 Phosphorus - .40/lb  
 Potassium - .29/lb

### Seed Prices:

Spring Wheat 11.25/bu  
 Durum 19.50/bu  
 Barley 8.50/bu  
 Corn grain RR/Bt 1.77/thou.kern.  
 Corn grain RR 1.60/thou.kern.  
 Oil Sunflower .72/thou.kern.  
 Conf. Sunflower 1.30/thou.kern.  
 Soybean RR 30.50/50 lb  
 Dry Beans .67/lb  
 Flax 16.50/bu  
 Canola 3.65/lb  
 Oats 5.00/bu  
 Field Peas 10.50/bu  
 Millet .24/lb  
 Buckwheat .33/lb  
 Mustard .88/lb  
 Rye 4.50/bu  
 Winter Wheat 10.00/bu

### Fuel prices:

Diesel 2.90/gal  
 Gas 3.10/gal

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

**Crop Insurance:** Coverage levels are 70% on all insurable crops. MPC1 estimates are used, except for RA-HPO on all wheat, soybeans, corn and canola.

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

**Operating Interest:** Direct costs charged 7.50% 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, \$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	37		29	
Market Price	6.27		7.30	
<b>MARKET INCOME</b>	<b>231.99</b>		<b>211.70</b>	
<b>DIRECT COSTS</b>				
-Seed	16.88		29.25	
-Herbicides	13.50		13.50	
-Fungicides*	1.50		1.50	
-Insecticides	0.00		0.00	
-Fertilizer	45.60		31.94	
-Crop Insurance	13.20		12.20	
-Fuel & Lubrication	15.83		15.48	
-Repairs	11.38		11.26	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	4.48		4.37	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>123.86</b>		<b>121.00</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.76		3.66	
-Machinery Depreciation	13.78		13.54	
-Machinery Investment	8.17		8.05	
-Land Charge	39.50		39.50	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>65.21</b>		<b>64.74</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>189.07</b>		<b>185.74</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>42.92</b>		<b>25.96</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.35		4.17	
-Indirect Costs	1.76		2.23	
-Total Costs	5.11		6.40	

notes:

\*Early season foliar fungicide would cost about \$3-\$4 and late season fungicide would cost about \$6 or \$12 per acre, depending on product availability, 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.

# Malting Barley

# Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	57	_____	94	_____
Market Price	4.79*	_____	3.16	_____
<b>MARKET INCOME</b>	<b>273.03</b>	_____	<b>297.04</b>	_____
<b>DIRECT COSTS</b>				
-Seed	12.75	_____	47.74*	_____
-Herbicides	11.70	_____	8.50	_____
-Fungicides	1.25	_____	0.00	_____
-Insecticides	0.00	_____	5.50**	_____
-Fertilizer	42.72	_____	63.93	_____
-Crop Insurance	4.90	_____	19.20	_____
-Fuel & Lubrication	17.55	_____	21.93	_____
-Repairs	12.09	_____	14.71	_____
-Drying	0.00	_____	13.25	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.92	_____	7.36	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>108.37</b>	_____	<b>203.62</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.19	_____	5.50	_____
-Machinery Depreciation	15.01	_____	21.40	_____
-Machinery Investment	9.03	_____	12.53	_____
-Land Charge	39.50	_____	39.50	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>67.73</b>	_____	<b>78.93</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>176.09</b>	_____	<b>282.55</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>96.94</b>	_____	<b>14.49</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	1.90	_____	2.17	_____
-Indirect Costs	1.19	_____	0.84	_____
-Total Costs	3.09	_____	3.01	_____

Barley notes:

\*On average, about 40% of production is feed quality. Use \$3.33 estimate for feed barley price.

Corn notes:

\*RR/Bt corn is planted for corn borer control on 80 percent of acres and RR corn without Bt Trait is on 20 percent of acres for corn borer refuge.

\*\*Insecticide seed treatment for wireworm, rootworm, white grub and suppression of cutworm.

## Soybeans

## Drybeans\*

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	30	_____	1390	_____
Market Price	8.46	_____	0.243	_____
<b>MARKET INCOME</b>	<b>253.80</b>	_____	<b>337.77</b>	_____
<b>DIRECT COSTS</b>				
-Seed	35.50*	_____	33.50	_____
-Herbicides	8.50	_____	24.80	_____
-Fungicides	0.00	_____	0.00**	_____
-Insecticides	0.00**	_____	0.00	_____
-Fertilizer	6.71	_____	21.80	_____
-Crop Insurance	11.20	_____	19.00	_____
-Fuel & Lubrication	16.12	_____	20.16	_____
-Repairs	11.82	_____	13.87	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.50	_____	1.50	_____
-Operating Interest	3.58	_____	5.05	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>98.93</b>	=====	<b>139.68</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.84	_____	4.69	_____
-Machinery Depreciation	14.41	_____	17.85	_____
-Machinery Investment	8.63	_____	11.64	_____
-Land Charge	39.50	_____	39.50	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>66.38</b>	=====	<b>73.68</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>165.31</b>	_____	<b>213.35</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>88.49</b>	_____	<b>124.42</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(lb):</b>	
-Direct Costs	3.30	_____	0.10	_____
-Indirect Costs	2.21	_____	0.05	_____
-Total Costs	5.51	_____	0.15	_____

### Soybean notes:

\*Roundup (glyphosate) resistant soybeans.

\*\*Soybean aphid insecticide would cost about \$8 per acre plus application.

### Drybean notes:

\*Acreage limitations existed 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.

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

## Oil Sunflower

## Confectionery Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1400	_____	1270	_____
Market Price	0.202	_____	0.264	_____
<b>MARKET INCOME</b>	<b>282.80</b>	_____	<b>335.28</b>	_____
<b>DIRECT COSTS</b>				
-Seed	15.84	_____	24.70	_____
-Herbicides	20.00	_____	20.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides*	12.00	_____	18.00	_____
-Fertilizer	30.67	_____	26.18	_____
-Crop Insurance	8.80	_____	12.10	_____
-Fuel & Lubrication	17.30	_____	17.89	_____
-Repairs	12.06	_____	12.26	_____
-Drying	2.80	_____	2.54	_____
-Miscellaneous	7.25	_____	13.00	_____
-Operating Interest	4.75	_____	5.50	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>131.47</b>	_____	<b>152.17</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.35	_____	4.40	_____
-Machinery Depreciation	16.05	_____	16.27	_____
-Machinery Investment	9.94	_____	10.22	_____
-Land Charge	39.50	_____	39.50	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>69.84</b>	_____	<b>70.39</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>201.31</b>	_____	<b>222.56</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>81.49</b>	_____	<b>112.72</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.09	_____	0.12	_____
-Indirect Costs	0.05	_____	0.06	_____
-Total Costs	0.14	_____	0.18	_____

**Oil Sunflower notes:**

\*Includes seed treatment for control of wireworm and flea beetle, \$6, and one spraying for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$6 per acre. Custom application cost of \$5.75 is under "Miscellaneous."

**Confectionery Sunflower notes:**

\*Includes seed treatment for control of wireworm and flea beetle, \$6, and two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$6 per application. Each custom application cost of \$5.75 is under "Miscellaneous."

# Canola

# Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1360	_____	19	_____
Market Price	0.199	_____	10.69	_____
<b>MARKET INCOME</b>	<b>270.64</b>	_____	<b>203.11</b>	_____
<b>DIRECT COSTS</b>				
-Seed	18.25	_____	11.55	_____
-Herbicides	18.50	_____	15.73	_____
-Fungicides	0.00*	_____	0.00	_____
-Insecticides	6.00**	_____	0.00	_____
-Fertilizer	51.28***	_____	20.79	_____
-Crop Insurance	14.90	_____	7.50	_____
-Fuel & Lubrication	16.18	_____	16.51	_____
-Repairs	11.61	_____	12.01	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	5.18	_____	3.21	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>143.41</b>	=====	<b>88.80</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.81	_____	3.86	_____
-Machinery Depreciation	14.19	_____	14.30	_____
-Machinery Investment	8.64	_____	8.99	_____
-Land Charge	39.50	_____	39.50	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>66.13</b>	=====	<b>66.65</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>209.54</b>	_____	<b>155.46</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>61.10</b>	_____	<b>47.65</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.11	_____	4.67	_____
-Indirect Costs	0.05	_____	3.51	_____
-Total Costs	0.15	_____	8.18	_____

Canola notes:

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

\*\*Insecticide seed treatment for flea beetles.

\*\*\*Fertilizer cost includes 20 lbs sulfur.

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	35		59	
Market Price	6.18*		2.21	
<b>MARKET INCOME</b>	<b>216.30</b>		<b>130.39</b>	
<b>DIRECT COSTS</b>				
-Seed	31.50		10.00	
-Herbicides	18.50		1.88	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	9.06		35.97	
-Crop Insurance	9.60		7.80	
-Fuel & Lubrication	17.66		18.79	
-Repairs	12.88		12.35	
-Drying	0.00		0.00	
-Miscellaneous	6.00		1.50	
-Operating Interest	3.95		3.31	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>109.15</b>		<b>91.60</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.05		4.26	
-Machinery Depreciation	15.82		15.37	
-Machinery Investment	9.17		9.21	
-Land Charge	39.50		39.50	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>68.53</b>		<b>68.34</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>177.68</b>		<b>159.94</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>38.62</b>		<b>(29.55)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.12		1.55	
-Indirect Costs	1.96		1.16	
-Total Costs	5.08		2.71	

Field Pea notes:

\*Food quality price. Use \$4.50 price estimate for feed quality peas.

# Yellow Mustard

# Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	900	_____	950	_____
Market Price	0.263	_____	0.193	_____
<b>MARKET INCOME</b>	<b>236.70</b>	_____	<b>183.35</b>	_____
<b>DIRECT COSTS</b>				
-Seed	10.56	_____	16.50	_____
-Herbicides	9.00	_____	8.75	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00*	_____	0.00	_____
-Fertilizer	24.47	_____	14.06	_____
-Crop Insurance	0.00	_____	0.00	_____
-Fuel & Lubrication	14.69	_____	15.25	_____
-Repairs	10.73	_____	11.29	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.89	_____	2.53	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>79.84</b>	=====	<b>69.87</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.46	_____	3.62	_____
-Machinery Depreciation	12.99	_____	13.57	_____
-Machinery Investment	7.74	_____	8.14	_____
-Land Charge	39.50	_____	39.50	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>63.69</b>	=====	<b>64.82</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>143.53</b>	_____	<b>134.69</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>93.17</b>	_____	<b>48.66</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.09	_____	0.07	_____
-Indirect Costs	0.07	_____	0.07	_____
-Total Costs	0.16	_____	0.14	_____

Yellow Mustard notes:

\*Insecticide seed treatment for flea beetles.

# Millet

# Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1700	_____	44*	_____
Market Price	0.087	_____	5.82	_____
<b>MARKET INCOME</b>	<b>147.90</b>	_____	<b>256.08</b>	_____
<b>DIRECT COSTS</b>				
-Seed	6.00	_____	10.00	_____
-Herbicides	1.50	_____	10.70	_____
-Fungicides	0.00	_____	6.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	23.77	_____	57.56	_____
-Crop Insurance	0.00	_____	13.20	_____
-Fuel & Lubrication	16.56	_____	14.19	_____
-Repairs	11.74	_____	10.63	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	6.00	_____
-Operating Interest	2.29	_____	4.81	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>63.36</b>	=====	<b>133.09</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.89	_____	3.60	_____
-Machinery Depreciation	14.31	_____	13.05	_____
-Machinery Investment	8.68	_____	7.43	_____
-Land Charge	39.50	_____	39.50	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>66.37</b>	=====	<b>63.59</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>129.74</b>	_____	<b>196.68</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>18.16</b>	_____	<b>59.40</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.04	_____	3.02	_____
-Indirect Costs	0.04	_____	1.45	_____
-Total Costs	0.08	_____	4.47	_____

Winter Wheat notes:

\*Yield is per harvested acre, 2000-2006 acreage abandonment averaged 12%.

# Rye

	Per Acre	Your Figures
Market Yield	40	_____
Market Price	2.81	_____
<b>MARKET INCOME</b>	<b>112.40</b>	_____
<b>DIRECT COSTS</b>		
-Seed	5.40	_____
-Herbicides	0.00	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	50.73	_____
-Crop Insurance	6.00	_____
-Fuel & Lubrication	16.47	_____
-Repairs	11.35	_____
-Drying	0.00	_____
-Miscellaneous	1.50	_____
-Operating Interest	3.43	_____
	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>94.88</b>	_____
<b>INDIRECT (FIXED) COSTS</b>		
-Misc. Overhead	3.87	_____
-Machinery Depreciation	14.07	_____
-Machinery Investment	8.45	_____
-Land Charge	39.50	_____
	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>65.89</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>160.77</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(48.37)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT (bu):</b>		
-Direct Costs	2.37	_____
-Indirect Costs	1.65	_____
-Total Costs	4.02	_____

notes:

# 2008 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
2WD 100HP Tractor	55500	400 hr	20	17877	4.70 /hr	4.13 /hr	5.65 /hr	
2WD 160HP Tractor	91300	500 hr	15	27021	8.57 /hr	5.32 /hr	9.30 /hr	
4WD 280HP Tractor	125700	500 hr	15	37199	11.80 /hr	7.33 /hr	7.31 /hr	
SP Combine (base unit)	160200	250 hr	12	39855	40.12 /hr	18.00 /hr	26.01 /hr	
Tandem Truck (used)	31000	150 hr	15	10300	9.20 /hr	6.20 /hr	5.73 /hr	
Semi & Trailer (used)	36000	150 hr	10	10300	17.13 /hr	6.95 /hr	7.13 /hr	
Pick-up Truck	20900	300 hr	10	4300	5.53 /hr	1.89 /hr	2.67 /hr	
Swather 25 ft	17500	1000 ac	20	4150	0.67 /ac	0.49 /ac	0.31 /ac	12.1
Sprayer 90 ft	27200	4000 ac	12	12326	0.31 /ac	0.22 /ac	0.35 /ac	42.5
Chisel Plow 35 ft	26600	1600 ac	15	15545	0.46 /ac	0.59 /ac	0.71 /ac	16.2
Field Cultivator 45 ft	33300	3000 ac	15	18376	0.33 /ac	0.39 /ac	0.59 /ac	23.2
Tandem Disk 28 ft	25600	800 ac	20	7330	1.14 /ac	0.93 /ac	0.72 /ac	12.2
Heavy Harrow 70 ft	23100	2000 ac	20	13512	0.24 /ac	0.41 /ac	0.26 /ac	39.7
Row-crop cultivator 12-30	11100	800 ac	15	6109	0.42 /ac	0.48 /ac	0.41 /ac	11.6
Air Seeder 35 ft	81200	1800 ac	12	38264	1.99 /ac	1.49 /ac	3.22 /ac	14.8
Planter 12-30	40800	800 ac	20	13586	1.70 /ac	1.53 /ac	2.26 /ac	10.6
Bean cutter 6-30	8700	400 ac	20	2500	0.77 /ac	0.63 /ac	0.48 /ac	6.5
Corn head 6-30	25600	400 ac	20	2532	2.90 /ac	1.59 /ac	0.71 /ac	5.7
Grain head w/pu	11200	1200 ac	10	3960	0.60 /ac	0.28 /ac	0.21 /ac	8.5
Grain str. cut 25 ft	15100	1600 ac	8	6058	0.71 /ac	0.30 /ac	0.28 /ac	8.5
Head w/sunf pans 25 ft	18800	400 ac	20	1983	2.10 /ac	1.17 /ac	0.35 /ac	8.5
Soybeans str. cut 25 ft	21900	800 ac	20	2033	1.24 /ac	0.67 /ac	0.41 /ac	8.5
Head w/drybean pickups	21900	400 ac	20	2315	2.45 /ac	1.36 /ac	0.41 /ac	8.5
Rock picker	16000	50 hr	20	5103	0.36 /ac	0.32 /ac	0.24 /ac	29.1
Grain auger	6900	50 hr	20	530	6.37 /hr	3.34 /hr	0.68 /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	Field Cultivate	45	5.0	23.2	\$ 1.77	\$ 0.91
2	Pick Rocks				0.50	0.43
3	Plant	35	5.0	14.8	2.77	3.71
4	Spray (130%)	90	6.0	42.5	0.45	0.63
5	Swath (20%)	25	5.0	12.1	0.24	0.15
6	Combine	25	4.0	8.5	3.98	3.34
7	Chisel Plow	35	4.5	16.2	2.53	1.16
	Trucks*				1.59	0.56
	Grain auger (pto)				0.20	0.01
	Pickup truck allocation				1.80	0.48
Total					15.83	11.38

\* Truck costs will vary between crops.

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