

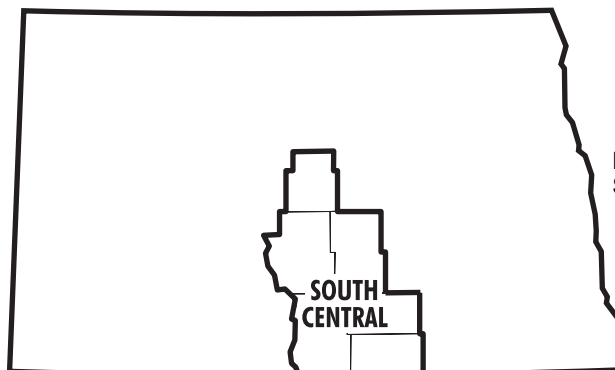
# Farm Management Planning Guide



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## Projected 2007 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 2007 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 2007 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, which occur if the national average price of wheat, feed grains or soybeans is 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.

**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 1999-2005, 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 - 52 lb  
 Phosphorus - 9 ppm  
 Potassium - 328 ppm

**Fertilizer prices:**  
 Nitrogen - .305/lb  
 Phosphorus - .255/lb  
 Potassium - .20/lb

## Seed Prices:

Spring Wheat	6.90/bu
Durum	7.00/bu
Barley	5.50/bu
Corn grain RR	1.38/thou.kern.
Oil Sunflower	.68/thou.kern.
Conf. Sunflower	1.18/thou.kern.
Soybean RR	28/50 lb
Dry Beans	.62/lb
Flax	8.00/bu
Canola	3.30/lb
Oats	3.75/bu
Field Peas	6.40/bu
Millet	.20/lb
Buckwheat	.30/lb
Mustard	.65/lb
Rye	4.00/bu
Winter Wheat	6.00/bu

## Fuel prices:

Diesel	2.30/gal
Gas	2.35/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 spring wheat, soybeans and canola.

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

**Operating Interest:** Direct costs charged 8.25% 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, \$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	30	_____	29	_____
Market Price	4.38	_____	4.85	_____
<b>MARKET INCOME</b>	<b>131.40</b>	_____	<b>140.65</b>	_____
<b>DIRECT COSTS</b>				
-Seed	10.35	_____	10.50	_____
-Herbicides	11.30	_____	11.30	_____
-Fungicides*	1.50	_____	1.50	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	18.53	_____	17.39	_____
-Crop Insurance	6.30	_____	6.40	_____
-Fuel & Lubrication	10.44	_____	10.40	_____
-Repairs	9.60	_____	9.59	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.00	_____	1.00	_____
-Operating Interest	2.85	_____	2.81	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>71.87</b>	_____	<b>70.88</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.33	_____	3.32	_____
-Machinery Depreciation	11.91	_____	11.87	_____
-Machinery Investment	6.97	_____	6.95	_____
-Land Charge	29.00	_____	29.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>51.21</b>	_____	<b>51.15</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>123.07</b>	_____	<b>122.03</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>8.33</b>	_____	<b>18.62</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	2.40	_____	2.44	_____
-Indirect Costs	1.71	_____	1.76	_____
-Total Costs	4.10	_____	4.21	_____

**notes:**

\*Early season foliar fungicide would cost about \$3-\$4 and late season fungicide would cost about \$7 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	55	_____	84	_____
Market Price	3.19*	_____	2.67	_____
<b>MARKET INCOME</b>	<b>175.45</b>	_____	<b>224.28</b>	_____
<b>DIRECT COSTS</b>				
-Seed	8.25	_____	31.51*	_____
-Herbicides	11.30	_____	8.00	_____
-Fungicides	1.25	_____	0.00	_____
-Insecticides	0.00	_____	0.00**	_____
-Fertilizer	22.96	_____	32.57	_____
-Crop Insurance	3.93	_____	27.40	_____
-Fuel & Lubrication	12.25	_____	16.19	_____
-Repairs	10.64	_____	13.65	_____
-Drying	0.00	_____	11.34	_____
-Miscellaneous	1.00	_____	1.00	_____
-Operating Interest	2.95	_____	5.84	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>74.53</b>	=====	<b>147.51</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.89	_____	5.13	_____
-Machinery Depreciation	13.60	_____	20.24	_____
-Machinery Investment	8.15	_____	11.61	_____
-Land Charge	29.00	_____	29.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>54.64</b>	=====	<b>65.97</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>129.17</b>	_____	<b>213.48</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>46.28</b>	_____	<b>10.80</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	1.36	_____	1.76	_____
-Indirect Costs	0.99	_____	0.79	_____
-Total Costs	2.35	_____	2.54	_____

### Barley notes:

\*Use \$2.24 estimate for feed barley price.

### Corn notes:

\*Roundup (glyphosate) resistant corn.

\*\*Insecticide for wireworm, rootworm, cutworm and white grub would cost \$15-\$16 for granular applied or about \$5 per acre for seed treatment (only suppression for cutworm). Corn borer insecticide, foliar applied mid-season, would cost about \$7 plus application.

## Soybeans

## Drybeans\*

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	25	_____	1300	_____
Market Price	5.95	_____	0.190	_____
<b>MARKET INCOME</b>	<b>148.75</b>	_____	<b>247.00</b>	_____
<b>DIRECT COSTS</b>				
-Seed	32.59*	_____	31.00	_____
-Herbicides	8.00	_____	24.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	2.40	_____	18.12	_____
-Crop Insurance	9.70	_____	15.50	_____
-Fuel & Lubrication	10.85	_____	13.87	_____
-Repairs	10.01	_____	12.19	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	3.50	_____	1.00	_____
-Operating Interest	3.18	_____	4.77	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>80.24</b>	=====	<b>120.45</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.36	_____	4.25	_____
-Machinery Depreciation	12.46	_____	15.99	_____
-Machinery Investment	7.20	_____	10.23	_____
-Land Charge	29.00	_____	29.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>52.02</b>	=====	<b>59.47</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>132.26</b>	_____	<b>179.92</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>16.49</b>	_____	<b>67.08</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(lb):</b>	
-Direct Costs	3.21	_____	0.09	_____
-Indirect Costs	2.08	_____	0.05	_____
-Total Costs	5.29	_____	0.14	_____

### Soybean notes:

\*Roundup (glyphosate) resistant soybeans.

### 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.

# Oil Sunflower

# Confectionery Sunflower

	Per Acre	Figures	Your Per Acre	Your Figures
Market Yield	1330		1280	
Market Price	0.144		0.194	
<b>MARKET INCOME</b>	<b>191.52</b>		<b>248.32</b>	
<b>DIRECT COSTS</b>				
-Seed	14.96		21.24	
-Herbicides	15.50		15.50	
-Fungicides	0.00		0.00	
-Insecticides*	5.00		11.00	
-Fertilizer	14.87		13.72	
-Crop Insurance	9.11		14.51	
-Fuel & Lubrication	13.51		13.46	
-Repairs	11.33		11.31	
-Drying	2.66		2.56	
-Miscellaneous	1.00		5.75	
-Operating Interest	3.63		4.50	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>91.57</b>		<b>113.54</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.17		4.15	
-Machinery Depreciation	15.20		15.15	
-Machinery Investment	9.45		9.42	
-Land Charge	29.00		29.00	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>57.82</b>		<b>57.73</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>149.39</b>		<b>171.27</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>42.13</b>		<b>77.05</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.07		0.09	
-Indirect Costs	0.04		0.05	
-Total Costs	0.11		0.13	

**Oil Sunflower notes:**

\*Seed treatment for control of 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:**

\*Includes seed treatment for control of wireworm and flea beetle, \$5, and one spraying for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$6 per acre. Custom application cost of \$4.75 is under "Miscellaneous." A second spraying 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	1290	_____	18	_____
Market Price	0.135	_____	5.97	_____
<b>MARKET INCOME</b>	<b>174.15</b>	_____	<b>107.46</b>	_____
<b>DIRECT COSTS</b>				
-Seed	18.15	_____	5.60	_____
-Herbicides	17.50	_____	14.71	_____
-Fungicides	0.00*	_____	0.00	_____
-Insecticides	7.00	_____	0.00	_____
-Fertilizer	29.61**	_____	8.61	_____
-Crop Insurance	9.00	_____	5.10	_____
-Fuel & Lubrication	10.72	_____	10.99	_____
-Repairs	9.72	_____	10.11	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.00	_____	1.00	_____
-Operating Interest	4.24	_____	2.31	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>106.95</b>	=====	<b>58.43</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.34	_____	3.42	_____
-Machinery Depreciation	12.23	_____	12.47	_____
-Machinery Investment	7.16	_____	7.58	_____
-Land Charge	29.00	_____	29.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>51.73</b>	=====	<b>52.47</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>158.68</b>	_____	<b>110.91</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>15.47</b>	_____	<b>(3.45)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.08	_____	3.25	_____
-Indirect Costs	0.04	_____	2.92	_____
-Total Costs	0.12	_____	6.16	_____

**Canola notes:**

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

\*\*Fertilizer cost includes 20 lbs sulfur.

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	30		60	
Market Price	3.96*		1.77	
<b>MARKET INCOME</b>	<b>118.80</b>		<b>106.20</b>	
<b>DIRECT COSTS</b>				
-Seed	19.20		7.50	
-Herbicides	17.00		1.88	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	4.30		20.54	
-Crop Insurance	4.38		6.33	
-Fuel & Lubrication	12.07		12.42	
-Repairs	11.01		10.71	
-Drying	0.00		0.00	
-Miscellaneous	4.00		1.00	
-Operating Interest	2.97		2.49	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>74.92</b>		<b>62.87</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.56		3.96	
-Machinery Depreciation	13.79		13.75	
-Machinery Investment	7.70		8.22	
-Land Charge	29.00		29.00	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>54.05</b>		<b>54.93</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>128.97</b>		<b>117.80</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(10.17)</b>		<b>(11.60)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	2.50		1.05	
-Indirect Costs	1.80		0.92	
-Total Costs	4.30		1.96	

**Field Pea notes:**

\*Food quality price. Use loan rate of about \$3.60 per bushel to project revenue from feed quality peas. The loan deficiency payment is calculated from the price of feed quality peas.



# Yellow Mustard

# Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	900	_____	900	_____
Market Price	0.163	_____	0.138	_____
<b>MARKET INCOME</b>	<b>146.70</b>	_____	<b>124.20</b>	_____
<b>DIRECT COSTS</b>				
-Seed	7.80	_____	15.00	_____
-Herbicides	8.60	_____	7.88	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	12.17	_____	4.06	_____
-Crop Insurance	0.00	_____	0.00	_____
-Fuel & Lubrication	10.18	_____	11.99	_____
-Repairs	9.15	_____	10.54	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.00	_____	1.00	_____
-Operating Interest	2.02	_____	2.08	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>50.92</b>	=====	<b>52.55</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.14	_____	3.50	_____
-Machinery Depreciation	11.57	_____	12.91	_____
-Machinery Investment	6.71	_____	7.77	_____
-Land Charge	29.00	_____	29.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>50.43</b>	=====	<b>53.18</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>101.35</b>	_____	<b>105.73</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>45.35</b>	_____	<b>18.47</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.06	_____	0.06	_____
-Indirect Costs	0.06	_____	0.06	_____
-Total Costs	0.11	_____	0.12	_____

**notes:**

## Millet

## Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1500	_____	46*	_____
Market Price	0.075	_____	3.81	_____
<b>MARKET INCOME</b>	<b>112.50</b>	_____	<b>175.26</b>	_____
<b>DIRECT COSTS</b>				
-Seed	5.00	_____	6.00	_____
-Herbicides	1.50	_____	8.15	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	8.54	_____	36.87	_____
-Crop Insurance	0.00	_____	6.30	_____
-Fuel & Lubrication	11.40	_____	9.78	_____
-Repairs	10.28	_____	9.16	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.00	_____	5.00	_____
-Operating Interest	1.56	_____	3.35	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>39.27</b>	=====	<b>84.61</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	3.57	_____	3.33	_____
-Machinery Depreciation	12.84	_____	11.61	_____
-Machinery Investment	7.76	_____	6.53	_____
-Land Charge	29.00	_____	29.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>53.18</b>	=====	<b>50.48</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>92.44</b>	_____	<b>135.09</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>20.06</b>	_____	<b>40.17</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.03	_____	1.84	_____
-Indirect Costs	0.04	_____	1.10	_____
-Total Costs	0.06	_____	2.94	_____

### Winter Wheat notes:

\*Yield is per harvested acre, 1999-2005 acreage abandonment averaged 19%.

# Rye

	Per Acre	Your Figures
Market Yield	38	_____
Market Price	2.59	_____
<b>MARKET INCOME</b>	<b>98.42</b>	_____
<b>DIRECT COSTS</b>		
-Seed	4.80	_____
-Herbicides	0.00	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	27.70	_____
-Crop Insurance	5.68	_____
-Fuel & Lubrication	12.93	_____
-Repairs	10.59	_____
-Drying	0.00	_____
-Miscellaneous	1.00	_____
-Operating Interest	2.59	_____
	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>65.29</b>	_____
<b>INDIRECT (FIXED) COSTS</b>		
-Misc. Overhead	3.72	_____
-Machinery Depreciation	13.39	_____
-Machinery Investment	8.05	_____
-Land Charge	29.00	_____
	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>54.16</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>119.45</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(21.03)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>	
-Direct Costs	1.72	_____
-Indirect Costs	1.43	_____
-Total Costs	3.14	_____

**notes:**

# 2007 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
2WD 100HP Tractor	53400	400 hr	20	17239	4.52/hr	3.97/hr	5.44/hr	
2WD 160HP Tractor	88000	500 hr	15	26044	8.26/hr	5.13/hr	8.96/hr	
4WD 280HP Tractor	121100	500 hr	15	35832	11.37/hr	7.06/hr	7.05/hr	
SP Combine (base unit)	150200	250 hr	12	37351	37.62/hr	16.88/hr	24.38/hr	
Tandem Truck (used)	30800	150 hr	15	10200	9.16/hr	6.15/hr	5.50/hr	
Semi & Trailer (used)	35900	150 hr	10	10200	17.13/hr	6.92/hr	6.87/hr	
Pick-up Truck	19700	300 hr	10	4100	5.20/hr	1.79/hr	2.58/hr	
Swather 25 ft	16900	1000 ac	20	3989	0.65/ac	0.47/ac	0.29/ac	12.1
Sprayer 90 ft	25900	3500 ac	15	10334	0.30/ac	0.23/ac	0.33/ac	42.5
Chisel Plow 35 ft	25600	1600 ac	15	14651	0.44/ac	0.57/ac	0.69/ac	16.2
Field Cultivator 45 ft	32100	3000 ac	15	17333	0.32/ac	0.37/ac	0.57/ac	23.2
Tandem Disk 28 ft	24700	800 ac	20	6869	1.10/ac	0.89/ac	0.70/ac	12.2
Heavy Harrow 70 ft	21700	2000 ac	20	12734	0.22/ac	0.39/ac	0.24/ac	39.7
Row-crop cultivator 12-30	10700	800 ac	15	5712	0.40/ac	0.47/ac	0.40/ac	11.6
Air Seeder 35 ft	72500	1800 ac	12	33136	1.78/ac	1.33/ac	2.86/ac	14.8
Planter 12-30	39300	800 ac	20	12465	1.64/ac	1.47/ac	2.17/ac	10.6
Bean cutter 6-30	9500	400 ac	20	2354	0.85/ac	0.69/ac	0.51/ac	6.5
Corn head 6-30	24700	400 ac	20	2325	2.78/ac	1.52/ac	0.76/ac	5.1
Grain head w/pu	10800	800 ac	15	2193	0.71/ac	0.37/ac	0.20/ac	8.5
Grain str. cut 25 ft	14600	1200 ac	10	4876	0.80/ac	0.37/ac	0.27/ac	8.5
Head w/sunf pans 25 ft	18200	400 ac	20	1867	2.04/ac	1.13/ac	0.34/ac	8.5
Soybeans str. cut 25 ft	21100	800 ac	20	1907	1.20/ac	0.65/ac	0.39/ac	8.5
Head w/drybean pickups	21100	400 ac	20	2172	2.36/ac	1.31/ac	0.39/ac	8.5
Rock picker	15400	50 hr	20	4748	0.35/ac	0.30/ac	0.23/ac	29.1
Grain auger	6500	50 hr	20	500	6.00/hr	3.15/hr	0.66/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	\$ 1.41	\$ 0.87
2	Pick Rocks				0.40	0.42
3	Plant	35	5.0	14.8	2.20	3.33
4	Spray	90	6.0	42.5	0.27	0.46
5	Combine str. cut	25	4.0	8.5	3.16	3.14
6	Heavy Harrow	70	5.5	39.7	0.47	0.47
	Trucks*				1.02	0.43
	Grain auger (pto)				0.16	0.01
	Pickup truck allocation				1.36	0.47
	<b>Total</b>				<b>10.44</b>	<b>9.60</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)