

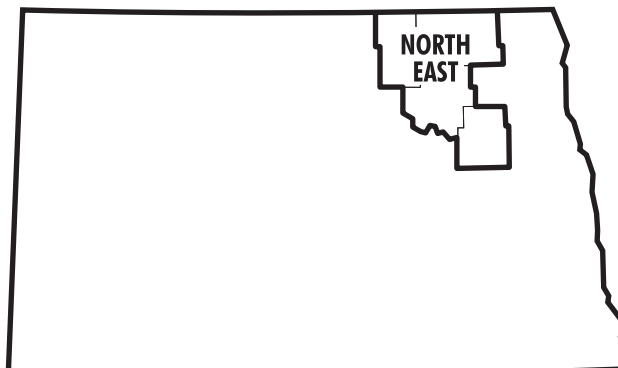
# Farm Management Planning Guide



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## Projected 2009 Crop Budgets North East North Dakota

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The 2009 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 2009 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 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 \$11.50 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.

**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 2001-2007, 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 - 37 lb  
 Phosphorus - 6 ppm  
 Potassium - 248 ppm

## Fertilizer prices:

Nitrogen - .54/lb  
 Phosphorus - .66/lb  
 Potassium - .70/lb

## Seed Prices:

Spring Wheat 9.40/bu  
 Durum 10.25/bu  
 Barley 7.60/bu  
 Corn grain RR/Bt 2.34/thou.kern.  
 Corn grain RR 2.03/thou.kern.  
 Soybean RR 40.00/50 lb  
 Dry Beans .84/lb  
 Oil Sunflower 1.07/thou.kern.  
 Conf. Sunflower 1.95/thou.kern.  
 Canola 7.90/lb  
 Flax 14.00/bu  
 Field Peas 11.00/bu  
 Oats 4.40/bu  
 Mustard 1.25/lb  
 Buckwheat .50/lb  
 Millet .20/lb  
 Winter Wheat 8.75/bu

## Fuel prices:

Diesel 2.10/gal  
 Gas 1.90/gal

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

**Crop Insurance:** Coverage levels are 70% on all insurable crops. MPCI 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 5.50% 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, \$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

Market Yield	37		36	
Market Price	6.06		7.46*	
<b>MARKET INCOME</b>	<b>224.22</b>		<b>268.56</b>	
<b>DIRECT COSTS</b>				
-Seed	16.45		20.50	
-Herbicides	17.00		17.00	
-Fungicides**	5.50		5.50	
-Insecticides***	0.00		0.00	
-Fertilizer	66.19		63.86	
-Crop Insurance	14.10		13.80	
-Fuel & Lubrication	11.86		11.81	
-Repairs	13.46		13.43	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	4.02		4.05	
	=====		=====	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>150.07</b>		<b>151.45</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.13		5.11	
-Machinery Depreciation	15.80		15.75	
-Machinery Investment	9.35		9.33	
-Land Taxes	0.00		0.00	
-Land Investment	40.20		40.20	
	=====		=====	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>70.47</b>		<b>70.39</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>220.54</b>		<b>221.85</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>3.68</b>		<b>46.71</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	4.06		4.21	
-Indirect Costs	1.90		1.96	
-Total Costs	5.96		6.16	

### Wheat notes:

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

\*\*Includes seed treatment (\$1.50-\$2) and early season foliar fungicide, which may not be necessary with good rotations, (\$3-\$4.50). Late season fungicide, often warranted in this region, would cost \$6-\$12, 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.

\*\*\*Orange wheat blossom midge insecticide would cost about \$5 per acre plus application.

## Malting Barley

## Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	56	_____	97	_____
Market Price	4.07*	_____	3.37	_____
<b>MARKET INCOME</b>	<b>227.92</b>	_____	<b>326.89</b>	_____
<b>DIRECT COSTS</b>				
-Seed	15.20	_____	62.65*	_____
-Herbicides	14.00	_____	17.00	_____
-Fungicides	1.50	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	62.29	_____	98.02	_____
-Crop Insurance	7.20	_____	28.60	_____
-Fuel & Lubrication	13.38	_____	17.33	_____
-Repairs	14.47	_____	17.93	_____
-Drying	0.00	_____	19.40	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.56	_____	7.22	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>133.11</b>	=====	<b>269.65</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.61	_____	7.15	_____
-Machinery Depreciation	17.28	_____	24.82	_____
-Machinery Investment	10.40	_____	14.52	_____
-Land Taxes	0.00	_____	0.00	_____
-Land Investment	40.20	_____	40.20	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>73.48</b>	=====	<b>86.69</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>206.59</b>	_____	<b>356.34</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>21.33</b>	_____	<b>(29.45)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	2.38	_____	2.78	_____
-Indirect Costs	1.31	_____	0.89	_____
-Total Costs	3.69	_____	3.67	_____

### Barley notes:

\*On average, about 50% of production is feed quality. Use \$2.72 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. Cost includes insecticide seed treatment for wireworm, rootworm, white grub and suppression of cutworm.

## Soybeans

## Drybeans\*

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	27	_____	1410	_____
Market Price	8.22	_____	0.24	_____
<b>MARKET INCOME</b>	<b>221.94</b>	_____	<b>338.40</b>	_____
<b>DIRECT COSTS</b>				
-Seed	46.56*	_____	42.00	_____
-Herbicides	17.00	_____	33.30**	_____
-Fungicides	0.00	_____	0.00***	_____
-Insecticides	8.00**	_____	0.00	_____
-Fertilizer	16.45	_____	36.08	_____
-Crop Insurance	14.30	_____	22.50	_____
-Fuel & Lubrication	12.07	_____	13.89	_____
-Repairs	14.29	_____	16.15	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	6.00	_____	9.75	_____
-Operating Interest	3.70	_____	4.78	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>138.37</b>	=====	<b>178.45</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.25	_____	5.78	_____
-Machinery Depreciation	16.71	_____	20.38	_____
-Machinery Investment	10.04	_____	11.92	_____
-Land Taxes	0.00	_____	0.00	_____
-Land Investment	40.20	_____	40.20	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>72.20</b>	=====	<b>78.27</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>210.58</b>	_____	<b>256.72</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>11.36</b>	_____	<b>81.68</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(lb):</b>	
-Direct Costs	5.12	_____	0.13	_____
-Indirect Costs	2.67	_____	0.06	_____
-Total Costs	7.80	_____	0.18	_____

### Soybean notes:

\*Roundup (glyphosate) resistant soybeans.

\*\*Soybean aphid insecticide.

### Drybean 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.

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

## Oil Sunflower

## Confectionery Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1480	_____	1290	_____
Market Price	0.157	_____	0.212	_____
<b>MARKET INCOME</b>	<b>232.36</b>	_____	<b>273.48</b>	_____
<b>DIRECT COSTS</b>				
-Seed	23.54*	_____	37.05*	_____
-Herbicides	22.00	_____	22.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00**	_____	12.00**	_____
-Fertilizer	49.87	_____	40.91	_____
-Crop Insurance	14.70	_____	20.80	_____
-Fuel & Lubrication	13.21	_____	12.92	_____
-Repairs	14.27	_____	14.09	_____
-Drying	2.96	_____	2.58	_____
-Miscellaneous	7.25	_____	13.00	_____
-Operating Interest	4.23	_____	4.82	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>158.03</b>	_____	<b>180.16</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.81	_____	5.71	_____
-Machinery Depreciation	18.40	_____	18.15	_____
-Machinery Investment	11.34	_____	11.21	_____
-Land Taxes	0.00	_____	0.00	_____
-Land Investment	40.20	_____	40.20	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>75.75</b>	_____	<b>75.27</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>233.78</b>	_____	<b>255.43</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(1.42)</b>	_____	<b>18.05</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.11	_____	0.14	_____
-Indirect Costs	0.05	_____	0.06	_____
-Total Costs	0.16	_____	0.20	_____

**Oil Sunflower notes:**

\*Cost includes seed treatment for control of wireworm and flea beetle, \$6.

\*\*One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$5.75 is under "Miscellaneous."

**Confectionery Sunflower notes:**

\*Cost includes seed treatment for control of wireworm and flea beetle, \$6.

\*\*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	1470	_____	21	_____
Market Price	0.155	_____	7.91	_____
<b>MARKET INCOME</b>	<b>227.85</b>	_____	<b>166.11</b>	_____
<b>DIRECT COSTS</b>				
-Seed	39.50*	_____	11.20	_____
-Herbicides	18.00	_____	17.00	_____
-Fungicides	0.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	81.15***	_____	37.44	_____
-Crop Insurance	15.60	_____	9.30	_____
-Fuel & Lubrication	10.23	_____	11.82	_____
-Repairs	12.35	_____	13.66	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.90	_____	2.80	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>183.23</b>	=====	<b>104.72</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.82	_____	5.20	_____
-Machinery Depreciation	14.79	_____	16.09	_____
-Machinery Investment	8.61	_____	10.07	_____
-Land Taxes	0.00	_____	0.00	_____
-Land Investment	40.20	_____	40.20	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>68.43</b>	=====	<b>71.56</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>251.66</b>	_____	<b>176.28</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(23.81)</b>	_____	<b>(10.17)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.12	_____	4.99	_____
-Indirect Costs	0.05	_____	3.41	_____
-Total Costs	0.17	_____	8.39	_____

**Canola notes:**

\*Cost includes insecticide seed treatment for flea beetles, \$6.

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

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

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	34		60	
Market Price	6.48*		2.30	
<b>MARKET INCOME</b>	<b>220.32</b>		<b>138.00</b>	
<b>DIRECT COSTS</b>				
-Seed	33.00		8.80	
-Herbicides	20.40		4.00	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	18.38		55.27	
-Crop Insurance	13.10		9.30	
-Fuel & Lubrication	12.56		13.57	
-Repairs	14.64		14.59	
-Drying	0.00		0.00	
-Miscellaneous	6.25		1.50	
-Operating Interest	3.25		2.94	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>121.58</b>		<b>109.97</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.35		5.67	
-Machinery Depreciation	17.67		17.45	
-Machinery Investment	10.20		10.49	
-Land Taxes	0.00		0.00	
-Land Investment	40.20		40.20	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>73.42</b>		<b>73.80</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>195.00</b>		<b>183.77</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>25.32</b>		<b>(45.77)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.58		1.83	
-Indirect Costs	2.16		1.23	
-Total Costs	5.74		3.06	

**Field Pea notes:**

\*Food quality price. Use \$3.75 price estimate for feed quality peas.



# Yellow Mustard

# Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	950	_____	950	_____
Market Price	0.295	_____	0.196	_____
<b>MARKET INCOME</b>	<b>280.25</b>	_____	<b>186.20</b>	_____
<b>DIRECT COSTS</b>				
-Seed	15.00	_____	25.00	_____
-Herbicides	11.00	_____	9.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00*	_____	0.00	_____
-Fertilizer	41.95	_____	24.54	_____
-Crop Insurance	6.40	_____	0.00	_____
-Fuel & Lubrication	10.71	_____	12.68	_____
-Repairs	12.78	_____	14.13	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.90	_____	2.39	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>108.24</b>	=====	<b>89.24</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	4.86	_____	5.26	_____
-Machinery Depreciation	15.08	_____	16.55	_____
-Machinery Investment	9.04	_____	10.26	_____
-Land Taxes	0.00	_____	0.00	_____
-Land Investment	40.20	_____	40.20	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>69.18</b>	=====	<b>72.27</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>177.42</b>	_____	<b>161.51</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>102.83</b>	_____	<b>24.69</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>				
	(lb):		(lb):	
-Direct Costs	0.11	_____	0.09	_____
-Indirect Costs	0.07	_____	0.08	_____
-Total Costs	0.19	_____	0.17	_____

**Yellow Mustard notes:**

\*Insecticide seed treatment for flea beetles.

## Millet

## Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1600	_____	48*	_____
Market Price	0.065	_____	5.28	_____
<b>MARKET INCOME</b>	<b>104.00</b>	_____	<b>253.44</b>	_____
<b>DIRECT COSTS</b>				
-Seed	5.00	_____	10.50	_____
-Herbicides	2.00	_____	17.00	_____
-Fungicides	0.00	_____	9.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	33.75	_____	91.81	_____
-Crop Insurance	0.00	_____	14.10	_____
-Fuel & Lubrication	12.25	_____	10.20	_____
-Repairs	13.75	_____	12.19	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	6.00	_____
-Operating Interest	1.88	_____	4.70	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>70.12</b>	=====	<b>175.50</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	5.24	_____	4.90	_____
-Machinery Depreciation	16.28	_____	14.65	_____
-Machinery Investment	9.86	_____	8.29	_____
-Land Taxes	0.00	_____	0.00	_____
-Land Investment	40.20	_____	40.20	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>71.58</b>	=====	<b>68.04</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>141.70</b>	_____	<b>243.54</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(37.70)</b>	_____	<b>9.90</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.04	_____	3.66	_____
-Indirect Costs	0.04	_____	1.42	_____
-Total Costs	0.09	_____	5.07	_____

### Winter Wheat notes:

\*Yield is per harvested acre, 2001-2007 acreage abandonment averaged 12%.

# 2009 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
2WD 100HP Tractor	59900	400 hr	20	19314	5.07 /hr	4.46 /hr	6.10 /hr	
2WD 160HP Tractor	98600	500 hr	15	29193	9.25 /hr	5.75 /hr	10.05 /hr	
4WD 280HP Tractor	144600	500 hr	15	42789	13.57 /hr	7.43 /hr	8.41 /hr	
SP Combine (base unit)	184200	250 hr	12	45827	46.12 /hr	20.70 /hr	29.91 /hr	
Tandem Truck (used)	31000	150 hr	15	10300	9.20 /hr	6.20 /hr	6.33 /hr	
Semi & Trailer (used)	37000	150 hr	10	10600	17.60 /hr	7.14 /hr	7.87 /hr	
Pick-up Truck	21500	300 hr	10	4400	5.70 /hr	1.94 /hr	2.93 /hr	
Swather 25 ft	19700	1000 ac	20	4674	0.75 /ac	0.55 /ac	0.34 /ac	12.1
Sprayer 90 ft	30600	5000 ac	10	13828	0.35 /ac	0.25 /ac	0.39 /ac	42.5
Chisel Plow 35 ft	28700	1600 ac	15	16787	0.50 /ac	0.64 /ac	0.77 /ac	16.2
Field Cultivator 45 ft	36000	3000 ac	15	19866	0.36 /ac	0.42 /ac	0.64 /ac	23.2
Tandem Disk 28 ft	27700	800 ac	20	7912	1.24 /ac	1.00 /ac	0.78 /ac	12.2
Heavy Harrow 70 ft	25000	2000 ac	20	14581	0.26 /ac	0.45 /ac	0.28 /ac	39.7
Air Seeder 35 ft	93400	1800 ac	12	44034	2.29 /ac	1.72 /ac	3.70 /ac	14.8
Planter 12-30	45900	800 ac	20	15256	1.92 /ac	1.72 /ac	2.53 /ac	10.6
Corn head 6-30	28800	400 ac	20	2852	3.26 /ac	1.79 /ac	0.80 /ac	5.7
Grain head w/pu	12600	1200 ac	10	4433	0.68 /ac	0.32 /ac	0.24 /ac	8.5
Grain str. cut 25 ft	17000	800 ac	15	3429	1.13 /ac	0.58 /ac	0.31 /ac	8.5
Head w/sunf pans 25 ft	21200	400 ac	20	2235	2.37 /ac	1.32 /ac	0.39 /ac	8.5
Soybeans str. cut 25 ft	24700	800 ac	20	2285	1.40 /ac	0.76 /ac	0.46 /ac	8.5
Rock picker	18000	50 hr	20	5730	0.41 /ac	0.36 /ac	0.27 /ac	29.1
Grain Cart	26800	100 hr	20	4600	11.10 /hr	7.07 /hr	4.25 /hr	
Grain auger	7800	50 hr	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	Field Cultivate	45	5.0	23.2	\$ 1.28	\$ 1.00
2	Pick Rocks				0.37	0.48
3	Plant	35	5.0	14.8	2.00	4.27
4	Spray (130%)	90	6.0	42.5	0.33	0.69
5	Swath (20%)	25	5.0	12.1	0.17	0.17
6	Combine	25	4.0	8.5	2.88	3.84
7	Chisel Plow	35	4.5	16.2	1.83	1.29
	Grain Cart*				0.60	0.50
	Trucks*				1.15	0.61
	Grain auger (pto)				0.15	0.08
	Pickup truck allocation				1.10	0.53
				Total	11.86	13.46

\* 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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