

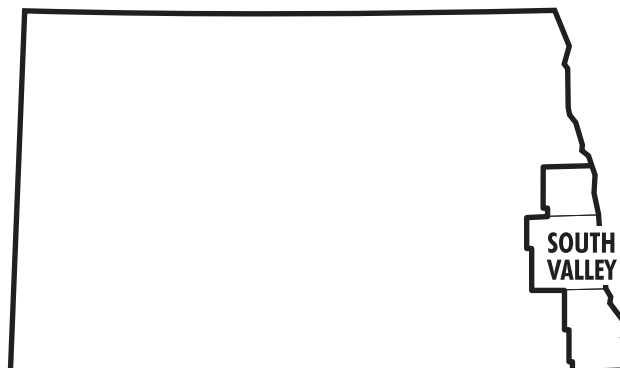
# Farm Management Planning Guide



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## Projected 2009 Crop Budgets South Valley 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 \$13.00 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.

**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 - 30 lb  
 Phosphorus - 10 ppm  
 Potassium - 278 ppm

## Fertilizer prices:

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

## Seed Prices:

Spring Wheat 10.50/bu  
 Durum 11.35/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.  
 Flax 14.00/bu  
 Oats 4.40/bu  
 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. MPCl 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

|                              | Per Acre | Your<br>Figures | Per Acre | Your<br>Figures |
|------------------------------|----------|-----------------|----------|-----------------|
| Market Yield                 | 45       | _____           | 34       | _____           |
| Market Price                 | 6.26     | _____           | 7.72*    | _____           |
| MARKET INCOME                | 281.70   | _____           | 262.48   | _____           |
| DIRECT COSTS                 |          |                 |          |                 |
| -Seed                        | 21.00    | _____           | 22.70    | _____           |
| -Herbicides                  | 17.00    | _____           | 17.00    | _____           |
| -Fungicides**                | 5.50     | _____           | 5.50     | _____           |
| -Insecticides                | 0.00     | _____           | 0.00     | _____           |
| -Fertilizer                  | 78.26    | _____           | 55.17    | _____           |
| -Crop Insurance              | 12.10    | _____           | 9.90     | _____           |
| -Fuel & Lubrication          | 13.70    | _____           | 13.19    | _____           |
| -Repairs                     | 14.51    | _____           | 14.18    | _____           |
| -Drying                      | 0.00     | _____           | 0.00     | _____           |
| -Miscellaneous               | 6.00     | _____           | 6.00     | _____           |
| -Operating Interest          | 4.62     | _____           | 3.95     | _____           |
|                              | =====    | =====           | =====    | =====           |
| SUM OF LISTED DIRECT COSTS   | 172.69   | _____           | 147.58   | _____           |
| INDIRECT (FIXED) COSTS       |          |                 |          |                 |
| -Misc. Overhead              | 5.52     | _____           | 5.35     | _____           |
| -Machinery Depreciation      | 17.21    | _____           | 16.76    | _____           |
| -Machinery Investment        | 10.42    | _____           | 10.17    | _____           |
| -Land Taxes                  | 0.00     | _____           | 0.00     | _____           |
| -Land Investment             | 74.40    | _____           | 74.40    | _____           |
|                              | =====    | =====           | =====    | =====           |
| SUM OF LISTED INDIRECT COSTS | 107.55   | _____           | 106.67   | _____           |
| SUM OF ALL LISTED COSTS      | 280.24   | _____           | 254.25   | _____           |
| RETURN TO LABOR & MANAGEMENT | 1.46     | _____           | 8.23     | _____           |
| LISTED COSTS PER BUDGET UNIT | (bu):    |                 | (bu):    |                 |
| -Direct Costs                | 3.84     | _____           | 4.34     | _____           |
| -Indirect Costs              | 2.39     | _____           | 3.14     | _____           |
| -Total Costs                 | 6.23     | _____           | 7.48     | _____           |

### 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.

## Malting Barley

## Corn Grain

|                              | Per Acre | Your<br>Figures | Per Acre | Your<br>Figures |
|------------------------------|----------|-----------------|----------|-----------------|
| Market Yield                 | 61       |                 | 126      |                 |
| Market Price                 | 4.18*    |                 | 3.48     |                 |
| MARKET INCOME                | 254.98   |                 | 438.48   |                 |
| DIRECT COSTS                 |          |                 |          |                 |
| -Seed                        | 15.20    |                 | 70.62*   |                 |
| -Herbicides                  | 14.00    |                 | 20.00    |                 |
| -Fungicides                  | 1.50     |                 | 0.00     |                 |
| -Insecticides                | 0.00     |                 | 0.00     |                 |
| -Fertilizer                  | 62.95    |                 | 118.05   |                 |
| -Crop Insurance              | 7.20     |                 | 25.00    |                 |
| -Fuel & Lubrication          | 15.09    |                 | 20.10    |                 |
| -Repairs                     | 15.43    |                 | 19.59    |                 |
| -Drying                      | 0.00     |                 | 25.20    |                 |
| -Miscellaneous               | 6.00     |                 | 6.00     |                 |
| -Operating Interest          | 3.78     |                 | 8.38     |                 |
| SUM OF LISTED DIRECT COSTS   | 141.15   |                 | 312.93   |                 |
| INDIRECT (FIXED) COSTS       |          |                 |          |                 |
| -Misc. Overhead              | 5.88     |                 | 7.76     |                 |
| -Machinery Depreciation      | 18.24    |                 | 26.73    |                 |
| -Machinery Investment        | 11.16    |                 | 15.79    |                 |
| -Land Taxes                  | 0.00     |                 | 0.00     |                 |
| -Land Investment             | 74.40    |                 | 74.40    |                 |
| SUM OF LISTED INDIRECT COSTS | 109.67   |                 | 124.68   |                 |
| SUM OF ALL LISTED COSTS      | 250.82   |                 | 437.62   |                 |
| RETURN TO LABOR & MANAGEMENT | 4.16     |                 | 0.86     |                 |
| LISTED COSTS PER BUDGET UNIT | (bu):    |                 | (bu):    |                 |
| -Direct Costs                | 2.31     |                 | 2.48     |                 |
| -Indirect Costs              | 1.80     |                 | 0.99     |                 |
| -Total Costs                 | 4.11     |                 | 3.47     |                 |

### Barley notes:

\*Use \$2.78 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<br>Figures | Per Acre | Your<br>Figures |
|------------------------------|----------|-----------------|----------|-----------------|
| Market Yield                 | 34       |                 | 1530     |                 |
| Market Price                 | 8.59     |                 | 0.24     |                 |
| MARKET INCOME                | 292.06   |                 | 367.20   |                 |
| DIRECT COSTS                 |          |                 |          |                 |
| -Seed                        | 46.56*   |                 | 42.00    |                 |
| -Herbicides                  | 20.00    |                 | 27.30    |                 |
| -Fungicides                  | 0.00     |                 | 0.00**   |                 |
| -Insecticides                | 8.00**   |                 | 0.00     |                 |
| -Fertilizer                  | 4.38     |                 | 45.18    |                 |
| -Crop Insurance              | 12.40    |                 | 16.70    |                 |
| -Fuel & Lubrication          | 11.60    |                 | 14.52    |                 |
| -Repairs                     | 13.77    |                 | 15.64    |                 |
| -Drying                      | 0.00     |                 | 0.00     |                 |
| -Miscellaneous               | 3.50     |                 | 6.00     |                 |
| -Operating Interest          | 3.31     |                 | 4.60     |                 |
|                              | =====    | =====           | =====    | =====           |
| SUM OF LISTED DIRECT COSTS   | 123.52   |                 | 171.94   |                 |
| INDIRECT (FIXED) COSTS       |          |                 |          |                 |
| -Misc. Overhead              | 5.16     |                 | 6.08     |                 |
| -Machinery Depreciation      | 16.19    |                 | 20.25    |                 |
| -Machinery Investment        | 9.54     |                 | 12.86    |                 |
| -Land Taxes                  | 0.00     |                 | 0.00     |                 |
| -Land Investment             | 74.40    |                 | 74.40    |                 |
|                              | =====    | =====           | =====    | =====           |
| SUM OF LISTED INDIRECT COSTS | 105.29   |                 | 113.59   |                 |
| SUM OF ALL LISTED COSTS      | 228.80   |                 | 285.53   |                 |
| RETURN TO LABOR & MANAGEMENT | 63.26    |                 | 81.67    |                 |
| LISTED COSTS PER BUDGET UNIT | (bu):    |                 | (lb):    |                 |
| -Direct Costs                | 3.63     |                 | 0.11     |                 |
| -Indirect Costs              | 3.10     |                 | 0.07     |                 |
| -Total Costs                 | 6.73     |                 | 0.19     |                 |

### 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.

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

## Oil Sunflower

## Confectionery Sunflower

|                               | Per Acre | Your<br>Figures | Per Acre | Your<br>Figures |
|-------------------------------|----------|-----------------|----------|-----------------|
| Market Yield                  | 1540     | _____           | 1360     | _____           |
| Market Price                  | 0.162    | _____           | 0.220    | _____           |
| MARKET INCOME                 | 249.48   | _____           | 299.20   | _____           |
| <b>DIRECT COSTS</b>           |          |                 |          |                 |
| -Seed                         | 25.68*   | _____           | 39.00*   | _____           |
| -Herbicides                   | 22.00    | _____           | 22.00    | _____           |
| -Fungicides                   | 0.00     | _____           | 0.00     | _____           |
| -Insecticides                 | 6.00**   | _____           | 12.00**  | _____           |
| -Fertilizer                   | 49.09    | _____           | 41.45    | _____           |
| -Crop Insurance               | 10.20    | _____           | 13.60    | _____           |
| -Fuel & Lubrication           | 13.53    | _____           | 13.26    | _____           |
| -Repairs                      | 14.03    | _____           | 13.86    | _____           |
| -Drying                       | 3.08     | _____           | 2.72     | _____           |
| -Miscellaneous                | 11.75    | _____           | 17.50    | _____           |
| -Operating Interest           | 4.27     | _____           | 4.82     | _____           |
|                               | =====    | =====           | =====    | =====           |
| SUM OF LISTED DIRECT COSTS    | 159.63   | _____           | 180.22   | _____           |
| <b>INDIRECT (FIXED) COSTS</b> |          |                 |          |                 |
| -Misc. Overhead               | 5.84     | _____           | 5.75     | _____           |
| -Machinery Depreciation       | 18.91    | _____           | 18.67    | _____           |
| -Machinery Investment         | 11.41    | _____           | 11.28    | _____           |
| -Land Taxes                   | 0.00     | _____           | 0.00     | _____           |
| -Land Investment              | 74.40    | _____           | 74.40    | _____           |
|                               | =====    | =====           | =====    | =====           |
| SUM OF LISTED INDIRECT COSTS  | 110.56   | _____           | 110.11   | _____           |
| SUM OF ALL LISTED COSTS       | 270.20   | _____           | 290.33   | _____           |
| RETURN TO LABOR & MANAGEMENT  | (20.72)  | _____           | 8.87     | _____           |
| LISTED COSTS PER BUDGET UNIT  | (lb):    |                 | (lb):    |                 |
| -Direct Costs                 | 0.10     | _____           | 0.13     | _____           |
| -Indirect Costs               | 0.07     | _____           | 0.08     | _____           |
| -Total Costs                  | 0.18     | _____           | 0.21     | _____           |

### 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."

# Flax

# Oats

|                              | Per Acre | Your<br>Figures | Per Acre | Your<br>Figures |
|------------------------------|----------|-----------------|----------|-----------------|
| Market Yield                 | 21       |                 | 66       |                 |
| Market Price                 | 8.18     |                 | 2.43     |                 |
| MARKET INCOME                | 171.78   |                 | 160.38   |                 |
| DIRECT COSTS                 |          |                 |          |                 |
| -Seed                        | 11.20    |                 | 8.80     |                 |
| -Herbicides                  | 17.00    |                 | 4.00     |                 |
| -Fungicides                  | 0.00     |                 | 0.00     |                 |
| -Insecticides                | 0.00     |                 | 0.00     |                 |
| -Fertilizer                  | 35.95    |                 | 57.28    |                 |
| -Crop Insurance              | 6.60     |                 | 8.40     |                 |
| -Fuel & Lubrication          | 13.29    |                 | 15.32    |                 |
| -Repairs                     | 14.47    |                 | 15.59    |                 |
| -Drying                      | 0.00     |                 | 0.00     |                 |
| -Miscellaneous               | 1.50     |                 | 6.00     |                 |
| -Operating Interest          | 2.75     |                 | 3.17     |                 |
|                              | =====    | =====           | =====    | =====           |
| SUM OF LISTED DIRECT COSTS   | 102.77   |                 | 118.56   |                 |
| INDIRECT (FIXED) COSTS       |          |                 |          |                 |
| -Misc. Overhead              | 5.40     |                 | 5.95     |                 |
| -Machinery Depreciation      | 16.84    |                 | 18.45    |                 |
| -Machinery Investment        | 10.72    |                 | 11.27    |                 |
| -Land Taxes                  | 0.00     |                 | 0.00     |                 |
| -Land Investment             | 74.40    |                 | 74.40    |                 |
|                              | =====    | =====           | =====    | =====           |
| SUM OF LISTED INDIRECT COSTS | 107.35   |                 | 110.07   |                 |
| SUM OF ALL LISTED COSTS      | 210.12   |                 | 228.63   |                 |
| RETURN TO LABOR & MANAGEMENT | (38.34)  |                 | (68.25)  |                 |
| LISTED COSTS PER BUDGET UNIT | (bu):    |                 | (bu):    |                 |
| -Direct Costs                | 4.89     |                 | 1.80     |                 |
| -Indirect Costs              | 5.11     |                 | 1.67     |                 |
| -Total Costs                 | 10.01    |                 | 3.46     |                 |

notes:

# Winter Wheat

|                              | Per Acre | Your<br>Figures |
|------------------------------|----------|-----------------|
| Market Yield                 | 50*      | _____           |
| Market Price                 | 5.64     | _____           |
| MARKET INCOME                | 282.00   | _____           |
| DIRECT COSTS                 |          |                 |
| -Seed                        | 10.50    | _____           |
| -Herbicides                  | 17.00    | _____           |
| -Fungicides                  | 9.00     | _____           |
| -Insecticides                | 0.00     | _____           |
| -Fertilizer                  | 88.75    | _____           |
| -Crop Insurance              | 12.10    | _____           |
| -Fuel & Lubrication          | 12.91    | _____           |
| -Repairs                     | 14.19    | _____           |
| -Drying                      | 0.00     | _____           |
| -Miscellaneous               | 6.00     | _____           |
| -Operating Interest          | 4.69     | _____           |
|                              | =====    | =====           |
| SUM OF LISTED DIRECT COSTS   | 175.14   | _____           |
| INDIRECT (FIXED) COSTS       |          |                 |
| -Misc. Overhead              | 5.45     | _____           |
| -Machinery Depreciation      | 16.91    | _____           |
| -Machinery Investment        | 10.06    | _____           |
| -Land Taxes                  | 0.00     | _____           |
| -Land Investment             | 74.40    | _____           |
|                              | =====    | =====           |
| SUM OF LISTED INDIRECT COSTS | 106.81   | _____           |
| SUM OF ALL LISTED COSTS      | 281.95   | _____           |
| RETURN TO LABOR & MANAGEMENT | 0.05     | _____           |
| LISTED COSTS PER BUDGET UNIT | (bu):    |                 |
| -Direct Costs                | 3.50     | _____           |
| -Indirect Costs              | 2.14     | _____           |
| -Total Costs                 | 5.64     | _____           |

## Winter Wheat notes:

\*Yield is per harvested acre, 2001-2007 acreage abandonment averaged 15%.

# 2009 Machinery List

| Machine                   | Purch.<br>Price | Annual<br>Use | Years<br>to trade | Trade<br>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  |
| Row-crop cultivator 12-30 | 12000           | 800 ac        | 15                | 6606        | 0.45 /ac  | 0.52 /ac  | 0.45 /ac  | 11.6  |
| 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  |
| Bean cutter 6-30          | 9800            | 400 ac        | 20                | 2815        | 0.87 /ac  | 0.71 /ac  | 0.54 /ac  | 6.5   |
| 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   |
| Head w/drybean pickups    | 24700           | 400 ac        | 20                | 2603        | 2.76 /ac  | 1.54 /ac  | 0.46 /ac  | 8.5   |
| 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.<br>NO. | DESCRIPTION             | (FEET)<br>WIDTH | (MPH)<br>SPEED | (AC/HR)<br>Fld Cap | (\$/AC)<br>FUEL &<br>LUBE | (\$/AC)<br>EST.<br>REPAIRS |
|------------|-------------------------|-----------------|----------------|--------------------|---------------------------|----------------------------|
| 1          | Field Cultivate         | 45              | 5.0            | 23.2               | \$ 1.28                   | \$ 1.00                    |
| 2          | Plant                   | 35              | 5.0            | 14.8               | 2.00                      | 4.27                       |
| 3          | Spray (130%)            | 90              | 6.0            | 42.5               | 0.33                      | 0.69                       |
| 4          | Swath (20%)             | 25              | 5.0            | 12.1               | 0.17                      | 0.17                       |
| 5          | Combine                 | 25              | 4.0            | 8.5                | 2.88                      | 3.84                       |
| 6          | Chisel Plow             | 35              | 4.5            | 16.2               | 1.83                      | 1.29                       |
| 7          | Chisel Plow             | 35              | 4.5            | 16.2               | 1.83                      | 1.29                       |
|            | Grain Cart*             |                 |                |                    | 0.73                      | 0.61                       |
|            | Trucks*                 |                 |                |                    | 1.40                      | 0.74                       |
|            | Grain auger (pto)       |                 |                |                    | 0.15                      | 0.08                       |
|            | Pickup truck allocation |                 |                |                    | 1.10                      | 0.53                       |
|            | Total                   |                 |                |                    | 13.70                     | 14.51                      |

\* 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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