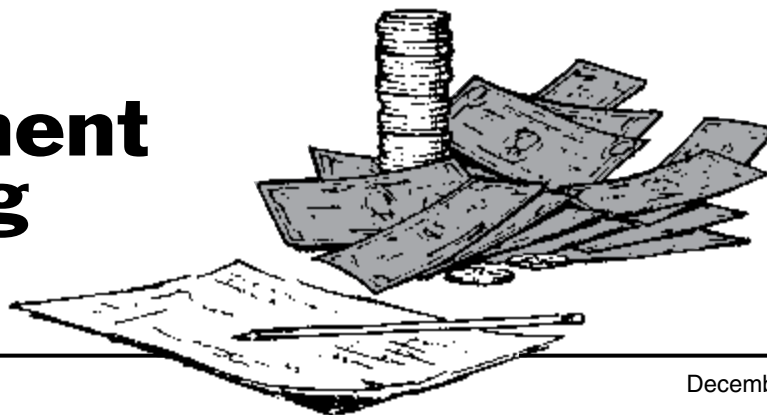


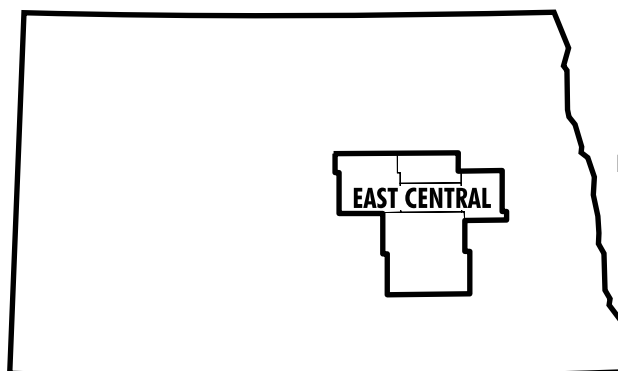
# Farm Management Planning Guide



December 2011

## Projected 2012 Crop Budgets East Central North Dakota

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

The 2012 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 2012 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.

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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 \$9.75 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 2004-2010, after the low and high yield years are removed. Yields for safflower, yellow mustard, buckwheat, millet, rye 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 - 32 lb  
 Phosphorus - 8 ppm  
 Potassium - 280 ppm

## Fertilizer prices:

Nitrogen - .58/lb  
 Phosphorus - .58/lb  
 Potassium - .52/lb

## Seed Prices:

Spring Wheat 12.75/bu  
 Durum 14.00/bu  
 Barley 12.00/bu  
 Corn grain RR/Bt 2.70/thou.kern.  
 Corn grain RR 2.37/thou.kern.  
 Soybean RR .345/thou.kern.  
 Dry Beans .92/lb  
 Oil Sunflower 1.35/thou.kern.  
 Conf. Sunflower 2.30/thou.kern.  
 Canola 9.10/lb  
 Flax 18.00/bu  
 Field Peas 13.50/bu  
 Oats 5.75/bu  
 Mustard 1.60/lb  
 Buckwheat .65/lb  
 Millet .32/lb  
 Winter Wheat 10.50/bu  
 Rye 9.50/bu

## Fuel prices:

Diesel 3.20/gal  
 Gas 3.40/gal

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

**Crop Insurance:** Coverage levels are 70% on all insurable crops. Yield Protection or APH insurance estimates are used, except for Revenue Protection on all wheat, corn, soybeans, corn, canola and sunflowers.

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

**Operating Interest:** Direct costs charged 4.60% 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, \$3 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	44	_____	34	_____
Market Price	7.47	_____	8.56*	_____
<b>MARKET INCOME</b>	<b>328.68</b>	_____	<b>291.04</b>	_____
<b>DIRECT COSTS</b>				
-Seed	19.13	_____	21.00	_____
-Herbicides	20.00	_____	20.00	_____
-Fungicides**	5.50	_____	5.50	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	82.13	_____	59.25	_____
-Crop Insurance	15.80	_____	13.70	_____
-Fuel & Lubrication	19.50	_____	18.74	_____
-Repairs	16.08	_____	15.83	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.13	_____	3.58	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>183.77</b>	=====	<b>159.09</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	6.61	_____	6.45	_____
-Machinery Depreciation	18.21	_____	17.75	_____
-Machinery Investment	10.67	_____	10.43	_____
-Land Charge	53.80	_____	53.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>89.29</b>	=====	<b>88.43</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>273.06</b>	_____	<b>247.52</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>55.62</b>	_____	<b>43.52</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	4.18	_____	4.68	_____
-Indirect Costs	2.03	_____	2.60	_____
-Total Costs	6.21	_____	7.28	_____

**Wheat notes:**

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

\*\*Includes seed treatment (\$1.50-\$2.00) and early season foliar fungicide, which may not be warranted with good rotations, (\$2-\$4.50). Late season fungicides are often warranted in this region. For fusarium head blight (scab) control, prothioconazole or metconazole containing products are highly recommended when a more susceptible cultivar is grown and/or when conditions are favorable for infection.

\*\*\*Cereal grain aphid insecticide would cost about \$6 per acre plus application.

# Malting Barley

# Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	64	_____	108	_____
Market Price	6.06*	_____	4.85	_____
<b>MARKET INCOME</b>	<b>387.84</b>	_____	<b>523.80</b>	_____
<b>DIRECT COSTS</b>				
-Seed	18.00	_____	73.75*	_____
-Herbicides	17.00	_____	15.00	_____
-Fungicides	5.50**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	72.40	_____	107.50	_____
-Crop Insurance	12.10	_____	30.10	_____
-Fuel & Lubrication	22.62	_____	29.29	_____
-Repairs	17.46	_____	19.56	_____
-Drying	0.00	_____	21.60	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.83	_____	6.86	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>170.41</b>	=====	<b>305.16</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	7.26	_____	8.86	_____
-Machinery Depreciation	20.52	_____	27.99	_____
-Machinery Investment	12.22	_____	16.39	_____
-Land Charge	53.80	_____	53.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>93.81</b>	=====	<b>107.04</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>264.22</b>	_____	<b>412.21</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>123.62</b>	_____	<b>111.59</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	2.66	_____	2.83	_____
-Indirect Costs	1.47	_____	0.99	_____
-Total Costs	4.13	_____	3.82	_____

**Barley notes:**

\*On average, about 40% of production is feed quality.

Use \$4.06 estimate for feed barley price.

\*\*Includes seed treatment (\$1.50-\$2.00) and early season foliar fungicide (\$2-\$4.50).

**Corn notes:**

\*RR/Bt corn is planted 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	30	_____	1380	_____
Market Price	10.91	_____	0.37	_____
<b>MARKET INCOME</b>	<b>327.30</b>	_____	<b>510.60</b>	_____
<b>DIRECT COSTS</b>				
-Seed	60.37*	_____	46.00	_____
-Herbicides	15.00	_____	42.00**	_____
-Fungicides	0.00	_____	18.00***	_____
-Insecticides	7.00**	_____	0.00	_____
-Fertilizer	9.73	_____	45.72	_____
-Crop Insurance	11.30	_____	20.70	_____
-Fuel & Lubrication	16.92	_____	22.83	_____
-Repairs	15.85	_____	18.35	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	6.50	_____	11.50	_____
-Operating Interest	3.28	_____	5.18	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>145.95</b>	=====	<b>230.27</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	6.45	_____	7.19	_____
-Machinery Depreciation	18.10	_____	22.66	_____
-Machinery Investment	10.57	_____	13.24	_____
-Land Charge	53.80	_____	53.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>88.92</b>	=====	<b>96.89</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>234.87</b>	_____	<b>327.17</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>92.43</b>	_____	<b>183.43</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(lb):</b>	
-Direct Costs	4.87	_____	0.17	_____
-Indirect Costs	2.96	_____	0.07	_____
-Total Costs	7.83	_____	0.24	_____

### Soybean notes:

\*RR2 (glyphosate) resistant soybeans.

\*\*Soybean aphid and/or spider mite 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 desiccant prior to straight cutting.

\*\*\*Fungicide for white mold. A second treatment may be necessary.

## Oil Sunflower

## Confectionery Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1380	_____	1250	_____
Market Price	0.235	_____	0.352	_____
<b>MARKET INCOME</b>	<b>324.30</b>	_____	<b>440.00</b>	_____
<b>DIRECT COSTS</b>				
-Seed	29.70*	_____	43.70*	_____
-Herbicides	24.70	_____	26.70	_____
-Fungicides	0.00**	_____	0.00**	_____
-Insecticides	7.00***	_____	14.00***	_____
-Fertilizer	45.22	_____	39.22	_____
-Crop Insurance	15.60	_____	16.90	_____
-Fuel & Lubrication	21.31	_____	20.99	_____
-Repairs	15.36	_____	15.26	_____
-Drying	2.76	_____	2.50	_____
-Miscellaneous	8.50	_____	15.50	_____
-Operating Interest	3.91	_____	4.48	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>174.06</b>	_____	<b>199.24</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	7.02	_____	6.96	_____
-Machinery Depreciation	19.68	_____	19.49	_____
-Machinery Investment	12.07	_____	11.97	_____
-Land Charge	53.80	_____	53.80	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>92.57</b>	_____	<b>92.22</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>266.64</b>	_____	<b>291.46</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>57.66</b>	_____	<b>148.54</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.13	_____	0.16	_____
-Indirect Costs	0.07	_____	0.07	_____
-Total Costs	0.19	_____	0.23	_____

**Oil Sunflower notes:**

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

\*\*Fungicide for rust would cost \$4 plus application.

\*\*\*One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$7 is under "Miscellaneous."

**Confectionery Sunflower notes:**

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

\*\*Fungicide for rust would cost \$4 plus application.

\*\*\*Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$7 per application. Each custom application cost of \$7 is under "Miscellaneous."

# Canola

# Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1520	_____	18	_____
Market Price	0.211	_____	13.29	_____
<b>MARKET INCOME</b>	<b>320.72</b>	_____	<b>239.22</b>	_____
<b>DIRECT COSTS</b>				
-Seed	45.50*	_____	12.60	_____
-Herbicides	18.00	_____	18.50	_____
-Fungicides	0.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	85.02	_____	30.11	_____
-Crop Insurance	12.60	_____	11.40	_____
-Fuel & Lubrication	19.94	_____	19.33	_____
-Repairs	16.58	_____	16.78	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.58	_____	2.54	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>203.73</b>	=====	<b>112.76</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	6.72	_____	6.66	_____
-Machinery Depreciation	19.12	_____	18.79	_____
-Machinery Investment	11.50	_____	11.64	_____
-Land Charge	53.80	_____	53.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>91.13</b>	=====	<b>90.89</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>294.86</b>	_____	<b>203.65</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>25.86</b>	_____	<b>35.57</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.13	_____	6.26	_____
-Indirect Costs	0.06	_____	5.05	_____
-Total Costs	0.19	_____	11.31	_____

**Canola notes:**

\*Cost includes insecticide seed treatment for flea beetles.

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

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	34		62	
Market Price	8.10*		3.10	
<b>MARKET INCOME</b>	<b>275.40</b>		<b>192.20</b>	
<b>DIRECT COSTS</b>				
-Seed	40.50		11.50	
-Herbicides	27.00		4.75	
-Fungicides	1.50		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	12.77		56.98	
-Crop Insurance	13.60		10.10	
-Fuel & Lubrication	20.30		22.47	
-Repairs	17.71		17.41	
-Drying	0.00		0.00	
-Miscellaneous	9.00		1.50	
-Operating Interest	3.27		2.87	
<b>SUM OF LISTED DIRECT COSTS</b>	<b>145.64</b>		<b>127.58</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	6.84		7.23	
-Machinery Depreciation	20.33		20.43	
-Machinery Investment	11.74		12.17	
-Land Charge	53.80		53.80	
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>92.70</b>		<b>93.64</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>238.35</b>		<b>221.22</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>37.05</b>		<b>(29.02)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	4.28		2.06	
-Indirect Costs	2.73		1.51	
-Total Costs	7.01		3.57	

**Field Pea notes:**

\*Food quality price. Feed quality peas would have a lower price.



# Yellow Mustard

# Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	900	_____	950	_____
Market Price	0.349	_____	0.284	_____
<b>MARKET INCOME</b>	<b>314.10</b>	_____	<b>269.80</b>	_____
<b>DIRECT COSTS</b>				
-Seed	19.20	_____	32.50	_____
-Herbicides	12.50	_____	11.00	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00*	_____	0.00	_____
-Fertilizer	38.04	_____	24.06	_____
-Crop Insurance	0.00**	_____	14.80*	_____
-Fuel & Lubrication	17.93	_____	18.19	_____
-Repairs	15.97	_____	16.06	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.56	_____	2.72	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>113.70</b>	=====	<b>120.83</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	6.42	_____	6.49	_____
-Machinery Depreciation	18.04	_____	18.21	_____
-Machinery Investment	10.90	_____	10.99	_____
-Land Charge	53.80	_____	53.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>89.16</b>	=====	<b>89.49</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>202.86</b>	_____	<b>210.32</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>111.24</b>	_____	<b>59.48</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.13	_____	0.13	_____
-Indirect Costs	0.10	_____	0.09	_____
-Total Costs	0.23	_____	0.22	_____

**Yellow Mustard notes:**

\*Insecticide seed treatment for flea beetles.

\*\*Crop insurance is not available.

**Buckwheat notes:**

\*Crop insurance is not available in most counties of the region.

# Millet

# Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1700	_____	49*	_____
Market Price	0.125	_____	6.16	_____
<b>MARKET INCOME</b>	<b>212.50</b>	_____	<b>301.84</b>	_____
<b>DIRECT COSTS</b>				
-Seed	8.00	_____	10.50	_____
-Herbicides	3.00	_____	19.80	_____
-Fungicides	0.00	_____	9.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	36.94	_____	93.57	_____
-Crop Insurance	0.00	_____	15.80	_____
-Fuel & Lubrication	20.33	_____	17.40	_____
-Repairs	16.71	_____	15.10	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	6.50	_____
-Operating Interest	1.99	_____	4.32	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>88.47</b>	=====	<b>191.99</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	6.77	_____	6.35	_____
-Machinery Depreciation	19.17	_____	17.16	_____
-Machinery Investment	11.50	_____	9.63	_____
-Land Charge	53.80	_____	53.80	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>91.23</b>	=====	<b>86.93</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>179.70</b>	_____	<b>278.92</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>32.80</b>	_____	<b>22.92</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.05	_____	3.92	_____
-Indirect Costs	0.05	_____	1.77	_____
-Total Costs	0.11	_____	5.69	_____

**Winter Wheat notes:**

\*Yield is per harvested acre, 2003-2009 acreage abandonment averaged 7%.

# Rye

	Per Acre	Your Figures
Market Yield	43	_____
Market Price	7.15	_____
<b>MARKET INCOME</b>	<b>307.45</b>	_____
<b>DIRECT COSTS</b>		
-Seed	11.40	_____
-Herbicides	3.50	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	79.84	_____
-Crop Insurance	8.10	_____
-Fuel & Lubrication	17.01	_____
-Repairs	14.69	_____
-Drying	0.00	_____
-Miscellaneous	6.50	_____
-Operating Interest	3.24	_____
	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>144.28</b>	_____
<b>INDIRECT (FIXED) COSTS</b>		
-Misc. Overhead	6.28	_____
-Machinery Depreciation	16.90	_____
-Machinery Investment	9.59	_____
-Land Charge	53.80	_____
	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>86.58</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>230.86</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>76.59</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>	
-Direct Costs	3.36	_____
-Indirect Costs	2.01	_____
-Total Costs	5.37	_____

# 2012 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
2WD 100HP Tractor	64600	400hr	20	20830	5.47 /hr	4.81 /hr	6.58 /hr	
2WD 160HP Tractor	109900	500hr	15	32513	10.32 /hr	6.41 /hr	11.19 /hr	
4WD 330HP Tractor	190700	500hr	15	56409	17.91 /hr	11.12 /hr	11.09 /hr	
SP Combine (base unit)	241000	250hr	12	59947	60.35 /hr	27.09 /hr	39.12 /hr	
Tandem Truck (used)	34800	150hr	15	11100	10.53 /hr	6.89 /hr	6.93 /hr	
Semi & Trailer (used)	39100	150hr	10	11200	18.60 /hr	7.55 /hr	8.53 /hr	
Pick-up Truck	27500	300hr	10	5400	7.37 /hr	2.47 /hr	3.13 /hr	
Swather 25 ft	22000	1000ac	20	5198	0.84 /ac	0.61 /ac	0.38 /ac	12.1
Sprayer 90 ft	34800	5000ac	10	15792	0.32 /ac	0.23 /ac	0.45 /ac	42.5
Chisel Plow 38 ft	36100	3000ac	15	21108	0.33 /ac	0.43 /ac	0.80 /ac	19.6
Field Cultivator 48 ft	42000	3000ac	15	24535	0.39 /ac	0.50 /ac	0.74 /ac	24.7
Tandem Disk 28 ft	30800	800ac	20	8810	1.37 /ac	1.11 /ac	0.87 /ac	12.2
Heavy Harrow 70 ft	27800	2000ac	20	16234	0.29 /ac	0.50 /ac	0.31 /ac	39.7
Air Seeder 40 ft	162200	2400ac	12	76449	2.97 /ac	2.23 /ac	5.61 /ac	17.0
Planter 12-30	51100	800ac	20	17011	2.13 /ac	1.92 /ac	2.82 /ac	10.6
Corn head	43900	600ac	20	4137	3.31 /ac	1.80 /ac	1.02 /ac	6.8
Grain head w/pu	14000	800ac	15	2924	0.92 /ac	0.48 /ac	0.27 /ac	8.5
Grain str. cut 30 ft	23400	2000ac	8	9409	0.87 /ac	0.37 /ac	0.36 /ac	10.2
Head w/sunf pans 30 ft	28100	600ac	20	2871	2.10 /ac	1.16 /ac	0.43 /ac	10.2
Soybeans str. cut 30 ft	34600	1000ac	20	3174	1.57 /ac	0.85 /ac	0.53 /ac	10.2
Rock picker	20000	50hr	20	6386	0.45 /ac	0.40 /ac	0.30 /ac	29.1
Grain Cart	28700	100hr	20	4900	11.90 /hr	7.56 /hr	7.20 /hr	
Grain auger	8700	50hr	20	630	8.07 /hr	4.20 /hr	4.30 /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	48	5.0	24.7	\$ 2.30	\$ 1.19
2	Pick Rocks				0.59	0.52
3	Plant	40	5.0	17.0	3.35	6.27
4	Spray (130%)	90	6.0	42.5	0.53	0.78
5	Combine	30	4.0	10.2	4.39	4.20
6	Chisel Plow	38	5.0	19.6	2.90	1.37
	Grain Cart*				1.15	0.30
	Trucks*				2.20	0.80
	Grain auger (pto)				0.23	0.09
	Pickup truck allocation				1.86	0.56
	<b>Total</b>				<b>19.50</b>	<b>16.08</b>

\* Truck costs will vary between crops.

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