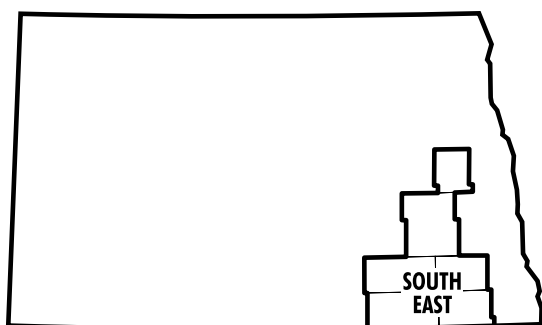




FARM MANAGEMENT PLANNING GUIDE

February 2022

Projected 2022 Crop Budgets



South East North Dakota

Ron Haugen, Farm Management Specialist

Note: This region consists of six counties:
Barnes, Dickey, LaMoure, Ransom, Sargent and Steele.

The 2021 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 2022 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.

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.

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The budget can be used to estimate cashflow by making a few modifications. Machinery depreciation should be omitted and the machinery investment number replaced with your per acre principal and interest payment on machinery debt. For owned land, the land charge should be replaced with your per acre real estate tax and principal and interest payment on land debt.

The 2018 Farm Bill continues the Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) support programs. PLC and ARC payments have been omitted from the budgets because those payments, if any, are tied to historic farm program base acres, not to current crop selection or production.

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 2014-2020, 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. N fertilizer can be reduced if previous crop was soybean, dry bean, field peas or lentil.

Fertilizer prices:

| | |
|------------|----------|
| Nitrogen | - .94/lb |
| Phosphorus | - .65/lb |
| Potassium | - .53/lb |

Seed Prices:

| | |
|-----------------|-----------------|
| Spring Wheat | 17.00/bu |
| Durum | 19.00/bu |
| Barley | 13.00/bu |
| Corn GM | 2.69/thou.kern. |
| Soybean GM | .34/thou.kern. |
| Dry Beans | .75/thou.kern. |
| Oil Sunflower | 1.55/thou.kern. |
| Conf. Sunflower | 2.75/thou.kern. |
| Canola | 12.40/lb |
| Flax | 27.00/bu |
| Field Peas | 20.00/bu |
| Oats | 10.00/bu |
| Buckwheat | .40/lb |
| Millet | .60/lb |
| Winter Wheat | 12.00/bu |

Fuel prices:

| | |
|--------|----------|
| Diesel | 2.90/gal |
| Gas | 3.10/gal |

Lubrication charge: 15% of fuel cost

Crop Insurance: Revenue Protection was used for all wheat, barley, soybeans, corn, canola, sunflowers, field peas, dry beans and lentils with a 75% coverage level and enterprise units. APH insurance was used for other crops for which 70% coverage and optional units were assumed.

Miscellaneous: soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 4.5% 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, \$4.00 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: 4.0% 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 | 60 | _____ | 49 | _____ |
| Market Price | 7.65 | _____ | 9.11* | _____ |
| MARKET REVENUE | 459.00 | _____ | 446.39 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 29.75 | _____ | 38.00 | _____ |
| -Herbicides | 29.40 | _____ | 29.40 | _____ |
| -Fungicides** | 17.00 | _____ | 17.00 | _____ |
| -Insecticides*** | 0.00 | _____ | 0.00 | _____ |
| -Fertilizer | 141.28 | _____ | 105.38 | _____ |
| -Crop Insurance | 5.50 | _____ | 7.00 | _____ |
| -Fuel & Lubrication | 19.36 | _____ | 18.65 | _____ |
| -Repairs | 20.79 | _____ | 20.48 | _____ |
| -Drying | 0.00 | _____ | 0.00 | _____ |
| -Miscellaneous | 1.50 | _____ | 1.50 | _____ |
| -Operating Interest | 5.95 | _____ | 5.34 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 270.53 | _____ | 242.75 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 8.87 | _____ | 8.66 | _____ |
| -Machinery Depreciation | 24.14 | _____ | 23.54 | _____ |
| -Machinery Investment | 14.14 | _____ | 13.83 | _____ |
| -Land Charge | 95.00 | _____ | 95.00 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 142.15 | _____ | 141.03 | _____ |
| SUM OF ALL LISTED COSTS | 412.68 | _____ | 383.78 | _____ |
| RETURN TO LABOR & MANAGEMENT | 46.32 | _____ | 62.61 | _____ |
| LISTED COSTS PER BUDGET UNIT | (bu): | | (bu): | |
| -Direct Costs | 4.51 | _____ | 4.95 | _____ |
| -Indirect Costs | 2.37 | _____ | 2.88 | _____ |
| -Total Costs | 6.88 | _____ | 7.83 | _____ |

Wheat notes:

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

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is recommended when conditions are favorable for fusarium head blight (scab).

***Cereal grain aphid insecticide would cost about \$4.

Malting Barley

Corn Grain

| | Per Acre | Your Figures | Per Acre | Your Figures |
|-----------------------------------------|---------------|--------------|---------------|--------------|
| Market Yield | 76 | _____ | 164 | _____ |
| Market Price | 5.98* | _____ | 4.45 | _____ |
| MARKET REVENUE | 454.48 | _____ | 729.80 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 26.00 | _____ | 100.50* | _____ |
| -Herbicides | 21.70 | _____ | 53.20 | _____ |
| -Fungicides | 17.00** | _____ | 0.00 | _____ |
| -Insecticides | 0.00 | _____ | 0.00 | _____ |
| -Fertilizer | 97.03 | _____ | 211.37 | _____ |
| -Crop Insurance | 5.00 | _____ | 11.00 | _____ |
| -Fuel & Lubrication | 20.24 | _____ | 28.60 | _____ |
| -Repairs | 21.00 | _____ | 28.87 | _____ |
| -Drying | 0.00 | _____ | 28.44 | _____ |
| -Miscellaneous | 1.50 | _____ | 1.50 | _____ |
| -Operating Interest | 4.71 | _____ | 10.43 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 214.18 | _____ | 473.91 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 9.24 | _____ | 12.44 | _____ |
| -Machinery Depreciation | 25.35 | _____ | 40.03 | _____ |
| -Machinery Investment | 14.81 | _____ | 22.77 | _____ |
| -Land Charge | 95.00 | _____ | 95.00 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 144.40 | _____ | 170.24 | _____ |
| SUM OF ALL LISTED COSTS | 358.58 | _____ | 644.15 | _____ |
| RETURN TO LABOR & MANAGEMENT | 95.90 | _____ | 85.65 | _____ |
| LISTED COSTS PER BUDGET UNIT | (bu): | | (bu): | |
| -Direct Costs | 2.82 | _____ | 2.89 | _____ |
| -Indirect Costs | 1.90 | _____ | 1.04 | _____ |
| -Total Costs | 4.72 | _____ | 3.93 | _____ |

Barley notes:

*There is risk of not making malting barley quality. Use \$4.00 for feed barley.

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is recommended when conditions are favorable for fusarium head blight (scab).

Corn notes:

*GM corn with herbicide tolerance and above and below ground insect control traits.

Soybeans

Drybeans

| | Per Acre | Your Figures | Per Acre | Your Figures |
|-----------------------------------------|---------------|--------------|---------------|--------------|
| Market Yield | 40 | _____ | 1970 | _____ |
| Market Price | 11.58 | _____ | 0.33 | _____ |
| MARKET REVENUE | 463.20 | _____ | 650.10 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 65.80* | _____ | 61.88 | _____ |
| -Herbicides | 70.00 | _____ | 46.90* | _____ |
| -Fungicides | 0.00 | _____ | 20.00** | _____ |
| -Insecticides | 4.00** | _____ | 0.00 | _____ |
| -Fertilizer | 4.87 | _____ | 59.14 | _____ |
| -Crop Insurance | 5.00 | _____ | 12.00 | _____ |
| -Fuel & Lubrication | 15.29 | _____ | 21.13 | _____ |
| -Repairs | 18.83 | _____ | 24.42 | _____ |
| -Drying | 0.00 | _____ | 0.00 | _____ |
| -Miscellaneous | 5.00 | _____ | 13.50 | _____ |
| -Operating Interest | 4.25 | _____ | 5.83 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 193.04 | _____ | 264.80 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 8.50 | _____ | 9.55 | _____ |
| -Machinery Depreciation | 22.88 | _____ | 29.52 | _____ |
| -Machinery Investment | 13.61 | _____ | 17.36 | _____ |
| -Land Charge | 95.00 | _____ | 95.00 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 139.99 | _____ | 151.43 | _____ |
| SUM OF ALL LISTED COSTS | 333.03 | _____ | 416.23 | _____ |
| RETURN TO LABOR & MANAGEMENT | 130.17 | _____ | 233.87 | _____ |
| LISTED COSTS PER BUDGET UNIT | (bu): | | (lb): | |
| -Direct Costs | 4.83 | _____ | 0.134 | _____ |
| -Indirect Costs | 3.50 | _____ | 0.077 | _____ |
| -Total Costs | 8.33 | _____ | 0.211 | _____ |

Soybean notes:

*GM soybeans with herbicide tolerance. The cost includes \$8 for inoculant and fungicide treatment in addition to seed expense.

**Insecticide for soybean aphid, spider mite, or foliage-feeding caterpillars.

Drybean notes:

*Includes dessicant prior to straight cutting.

**Fungicide for white mold. A second treatment may be necessary. Fungicide for rust at \$4-\$12 plus application maybe necessary.

Oil Sunflower

Confection Sunflower

| | Per Acre | Your Figures | Per Acre | Your Figures |
|-----------------------------------------|---------------|--------------|---------------|--------------|
| Market Yield | 1550 | _____ | 1600 | _____ |
| Market Price | 0.254 | _____ | 0.356 | _____ |
| MARKET REVENUE | 393.70 | _____ | 569.60 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 34.10 | _____ | 52.25 | _____ |
| -Herbicides | 36.00 | _____ | 38.90 | _____ |
| -Fungicides | 0.00* | _____ | 0.00* | _____ |
| -Insecticides | 5.00** | _____ | 10.00** | _____ |
| -Fertilizer | 47.25 | _____ | 50.53 | _____ |
| -Crop Insurance | 8.50 | _____ | 16.50 | _____ |
| -Fuel & Lubrication | 20.41 | _____ | 20.51 | _____ |
| -Repairs | 21.28 | _____ | 21.33 | _____ |
| -Drying | 4.92 | _____ | 4.92 | _____ |
| -Miscellaneous | 10.00 | _____ | 18.50 | _____ |
| -Operating Interest | 4.22 | _____ | 5.25 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 191.68 | _____ | 238.69 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 9.66 | _____ | 9.69 | _____ |
| -Machinery Depreciation | 27.73 | _____ | 27.82 | _____ |
| -Machinery Investment | 17.16 | _____ | 17.20 | _____ |
| -Land Charge | 95.00 | _____ | 95.00 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 149.55 | _____ | 149.71 | _____ |
| SUM OF ALL LISTED COSTS | 341.23 | _____ | 388.40 | _____ |
| RETURN TO LABOR & MANAGEMENT | 52.47 | _____ | 181.20 | _____ |
| LISTED COSTS PER BUDGET UNIT | (lb): | | (lb): | |
| -Direct Costs | 0.124 | _____ | 0.149 | _____ |
| -Indirect Costs | 0.096 | _____ | 0.094 | _____ |
| -Total Costs | 0.220 | _____ | 0.243 | _____ |

Oil Sunflower notes:

*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 \$8 is under "Miscellaneous."

Confection Sunflower notes:

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

**Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$5 per application. Each custom application cost of \$8 is under "Miscellaneous."

Canola

Flax

| | Per Acre | Your Figures | Per Acre | Your Figures |
|-----------------------------------------|---------------|--------------|---------------|--------------|
| Market Yield | 1770 | _____ | 24 | _____ |
| Market Price | 0.25 | _____ | 14.26 | _____ |
| MARKET REVENUE | 442.50 | _____ | 342.24 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 62.00 | _____ | 27.00 | _____ |
| -Herbicides | 32.30 | _____ | 34.60 | _____ |
| -Fungicides | 0.00* | _____ | 0.00 | _____ |
| -Insecticides | 0.00 | _____ | 0.00 | _____ |
| -Fertilizer | 108.80 | _____ | 38.66 | _____ |
| -Crop Insurance | 8.00 | _____ | 12.50 | _____ |
| -Fuel & Lubrication | 18.44 | _____ | 18.23 | _____ |
| -Repairs | 20.40 | _____ | 21.22 | _____ |
| -Drying | 0.00 | _____ | 0.00 | _____ |
| -Miscellaneous | 1.50 | _____ | 1.50 | _____ |
| -Operating Interest | 5.66 | _____ | 3.46 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 257.10 | _____ | 157.17 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 8.55 | _____ | 8.66 | _____ |
| -Machinery Depreciation | 24.50 | _____ | 24.81 | _____ |
| -Machinery Investment | 14.01 | _____ | 14.68 | _____ |
| -Land Charge | 95.00 | _____ | 95.00 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 142.05 | _____ | 143.15 | _____ |
| SUM OF ALL LISTED COSTS | 399.16 | _____ | 300.32 | _____ |
| RETURN TO LABOR & MANAGEMENT | 43.34 | _____ | 41.92 | _____ |
| LISTED COSTS PER BUDGET UNIT | (lb): | | (bu): | |
| -Direct Costs | 0.145 | _____ | 6.55 | _____ |
| -Indirect Costs | 0.080 | _____ | 5.96 | _____ |
| -Total Costs | 0.226 | _____ | 12.51 | _____ |

Canola notes:

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

Field Peas

Oats

| | Per Acre | Your Figures | Per Acre | Your Figures |
|-----------------------------------------|---------------|--------------|----------------|--------------|
| Market Yield | 38 | _____ | 81 | _____ |
| Market Price | 9.00 | _____ | 3.58 | _____ |
| MARKET REVENUE | 342.00 | _____ | 289.98 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 60.00 | _____ | 20.00 | _____ |
| -Herbicides | 42.00 | _____ | 5.90 | _____ |
| -Fungicides | 0.00 | _____ | 0.00 | _____ |
| -Insecticides | 0.00 | _____ | 0.00 | _____ |
| -Fertilizer | 11.40 | _____ | 84.61 | _____ |
| -Crop Insurance | 7.00 | _____ | 9.00 | _____ |
| -Fuel & Lubrication | 19.09 | _____ | 21.80 | _____ |
| -Repairs | 21.86 | _____ | 21.88 | _____ |
| -Drying | 0.00 | _____ | 0.00 | _____ |
| -Miscellaneous | 9.50 | _____ | 1.50 | _____ |
| -Operating Interest | 3.84 | _____ | 3.71 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 174.69 | _____ | 168.40 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 8.91 | _____ | 9.64 | _____ |
| -Machinery Depreciation | 26.20 | _____ | 26.72 | _____ |
| -Machinery Investment | 15.04 | _____ | 15.96 | _____ |
| -Land Charge | 95.00 | _____ | 95.00 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 145.15 | _____ | 147.32 | _____ |
| SUM OF ALL LISTED COSTS | 319.84 | _____ | 315.72 | _____ |
| RETURN TO LABOR & MANAGEMENT | 22.16 | _____ | (25.74) | _____ |
| LISTED COSTS PER BUDGET UNIT | (bu): | | (bu): | |
| -Direct Costs | 4.60 | _____ | 2.08 | _____ |
| -Indirect Costs | 3.82 | _____ | 1.82 | _____ |
| -Total Costs | 8.42 | _____ | 3.90 | _____ |

Buckwheat

Millet

| | Per Acre | Your Figures | Per Acre | Your Figures |
|-----------------------------------------|---------------|--------------|---------------|--------------|
| Market Yield | 950 | _____ | 1800 | _____ |
| Market Price | 0.315 | _____ | 0.21 | _____ |
| MARKET REVENUE | 299.25 | _____ | 378.00 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 20.50 | _____ | 17.50 | _____ |
| -Herbicides | 13.00 | _____ | 3.70 | _____ |
| -Fungicides | 0.00 | _____ | 0.00 | _____ |
| -Insecticides | 0.00 | _____ | 0.00 | _____ |
| -Fertilizer | 7.88 | _____ | 28.43 | _____ |
| -Crop Insurance | 9.50* | _____ | 6.00 | _____ |
| -Fuel & Lubrication | 15.90 | _____ | 18.92 | _____ |
| -Repairs | 19.00 | _____ | 20.58 | _____ |
| -Drying | 0.00 | _____ | 0.00 | _____ |
| -Miscellaneous | 1.50 | _____ | 1.50 | _____ |
| -Operating Interest | 1.96 | _____ | 2.17 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 89.24 | _____ | 98.80 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 8.07 | _____ | 8.78 | _____ |
| -Machinery Depreciation | 21.51 | _____ | 24.26 | _____ |
| -Machinery Investment | 12.83 | _____ | 14.68 | _____ |
| -Land Charge | 95.00 | _____ | 95.00 | _____ |
| | ===== | ===== | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 137.41 | _____ | 142.72 | _____ |
| SUM OF ALL LISTED COSTS | 226.65 | _____ | 241.52 | _____ |
| RETURN TO LABOR & MANAGEMENT | 72.60 | _____ | 136.48 | _____ |
| LISTED COSTS PER BUDGET UNIT | | | | |
| | (lb): | | (lb): | |
| -Direct Costs | 0.094 | _____ | 0.055 | _____ |
| -Indirect Costs | 0.145 | _____ | 0.079 | _____ |
| -Total Costs | 0.239 | _____ | 0.134 | _____ |

Buckwheat notes:

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

Winter Wheat

| | Per Acre | Your Figures |
|-----------------------------------------|---------------|--------------|
| Market Yield | 63* | _____ |
| Market Price | 6.70 | _____ |
| MARKET INCOME | 422.10 | _____ |
| DIRECT COSTS | | |
| -Seed | 14.40 | _____ |
| -Herbicides | 34.30 | _____ |
| -Fungicides | 9.00 | _____ |
| -Insecticides | 0.00 | _____ |
| -Fertilizer | 151.07 | _____ |
| -Crop Insurance | 5.50 | _____ |
| -Fuel & Lubrication | 16.82 | _____ |
| -Repairs | 18.45 | _____ |
| -Drying | 0.00 | _____ |
| -Miscellaneous | 8.25 | _____ |
| -Operating Interest | 5.80 | _____ |
| | ===== | ===== |
| SUM OF LISTED DIRECT COSTS | 263.59 | _____ |
| INDIRECT (FIXED) COSTS | | |
| -Misc. Overhead | 8.29 | _____ |
| -Machinery Depreciation | 21.79 | _____ |
| -Machinery Investment | 12.10 | _____ |
| -Land Charge | 95.00 | _____ |
| | ===== | ===== |
| SUM OF LISTED INDIRECT COSTS | 137.18 | _____ |
| SUM OF ALL LISTED COSTS | 400.77 | _____ |
| RETURN TO LABOR & MANAGEMENT | 21.33 | _____ |
| LISTED COSTS PER BUDGET UNIT | (bu): | |
| -Direct Costs | 4.18 | _____ |
| -Indirect Costs | 2.18 | _____ |
| -Total Costs | 6.36 | _____ |

Winter Wheat notes:

*Yield is per harvested acre. There is some risk of acreage abandonment in spring.

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