



## Eastern Idaho: Lower Rainfall Dryland

### Feed Barley

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## Background and Assumptions

The University of Idaho's costs and returns estimates are based on economic costs, not accounting costs. All resources are valued at a market rate or "opportunity cost". Input prices are taken from the U of I's annual survey of agricultural supply companies. The selling price is a historical average, not a current year's price. The cost estimate shown here is representative of growing dryland spring barley in lower rainfall areas of eastern Idaho, typically less than 15 inches annually. Production practices are based on data from farmers, crop consultants, and extension personnel in eastern Idaho. Production practices most closely represent those in Bannock, Oneida, and Power counties. Although production practices may be similar for individual farms, each farm has a unique set of resources with different levels of productivity, different production problems, and therefore different costs. Farm size, crop rotation, age and type of equipment, and the quality and intensity of management are all crucial factors that influence production costs.

### The Model Farm

The model farm for this costs and returns estimate is a 4,000-acre dryland farm following a traditional winter wheat-summer fallow rotation, or a winter wheat-spring grain fallow rotation. The rotation can vary by field and moisture availability. On average, 2,200 acres are planted. The assumed acreage for the enterprise budgets includes 1,800 acres planted to winter wheat 400 acres planted to spring feed barley, and 1,800 acres left in summer fallow. An oil seed crop may substitute for the spring barley.

### Production Practices

The field is sprayed with glyphosate in the fall several weeks after harvest to kill weeds and volunteer grain. The field is chisel plowed in late fall. The field is worked with a field cultivator prior to planting in May. All fertilizer is applied at planting using an air-seeder drill.

A two-way tank mix herbicide to control broadleaf weeds and wild oats is ground applied in late May or early June. No post-planting insecticides or

fungicides are included because treatment is infrequent and unpredictable. Barley is harvested by the farm operator in August and hauled to an elevator and sold. No storage costs are included.

### Machinery

Equipment used to produce dryland spring grain is shown in Tables 4 and 5. Table 4 lists the equipment and their hourly operating and ownership costs, while Table 5 lists the equipment and their annual ownership costs. Machinery ownership cost (capital recovery) is based on 75% of the replacement cost of a new piece of equipment, except for trucks. Field truck prices are for a used vehicle with a new bed. Capital recovery combines depreciation and interest into a single value. To keep machinery prices current between years in which a comprehensive survey is conducted, machinery prices are adjusted using USDA's Farm Machinery Prices Paid Index. Equipment prices are collected approximately every five years.

The University of Idaho uses the budget generator program *Budget Planner* from the University of California-Davis to produce the various tables shown in this publication. Machinery operating and ownership costs are calculated based on engineering equations in this program. Machinery operating costs include fuel, lubricants and repairs.

### Labor and Management

The cost of labor used in this study includes a base wage, plus a percentage to account for various payroll taxes (FICA, SUTA & FUTA), and workman's compensation, as well as benefits such as paid vacation/personal leave days, health insurance and bonuses. Labor is classified by the type of work performed. Labor classifications, labor rates and payroll overhead are shown below.

### Labor Values

| Labor Class         | Base Rate | Payroll Overhead | Effective Rate |
|---------------------|-----------|------------------|----------------|
| General Farm Labor  | \$9.25    | 15%              | \$10.65        |
| Truck Drivers       | \$12.50   | 15%              | \$14.40        |
| Equipment Operators | \$14.80   | 25%              | \$18.50        |

Based on the speed, width and overall field efficiency, *Budget Planner* calculates equipment operator labor hours for all field operations except those performed on a custom basis. Custom operations are listed separately. General farm labor accounts for extra field labor used during planting or harvest. A management fee based on approximately 5% of the total production costs is included. Prior to 2013, the basis of the 5% charge was expected revenue.

### **Capital, Land and Overhead Costs**

Interest on operating capital is charged from the time an input is applied until harvest and is calculated at a nominal rate of 5.75 percent. Interest on intermediate term capital, primarily equipment, is calculated using a nominal rate of 5.5 percent. A general overhead charge, calculated at approximately 2.5 percent of operating expenses, is included to cover unallocated whole-farm costs such as office expenses, legal and accounting fees, cell phones, internet service and utilities. Irrigation power is not included as part of general farm utilities.

Land rent is based on a one-year cash lease for grain.

### **Budget Format**

In addition to the Background and Assumption pages, this publication has six tables presenting a variety of cost and returns information.

Table 1 shows both expected revenue, based on a specified yield and price, and expenses. Expenses are broken into two main categories: operating and ownership. Operating expenses are those that typically vary with the level of production and involve inputs that are used in a single production cycle. Ownership expenses include a systematic cost recovery over the useful life for inputs used in the production process that have a useful life of more than one year. Machinery and land fall into this category. Operating inputs are organized by category. In addition to the cost per unit and cost per acre for each input, a total cost is given for each category. Table 1 also gives a total of all operating, ownership and total costs per acre, as well as these same categories on a yield basis (per bushel, cwt, ton, etc.).

Table 2 has most of the same cost information presented in Table 1 but the data is organized by operation for both pre-harvest and harvest costs. Operations can define a single activity, such as seed hauling, or multiple activities as in the case of tillage. The quantity of labor is shown for each operation. The cash costs per acre for labor, machinery costs,

materials and custom are also specified. Cash overhead expenses are listed separately as are the non-cash overhead.

Table 3 is a monthly cash flow of expenses based on when the operation occurs and when inputs are applied. Field operations are classified as pre-harvest, harvest and post-harvest.

Table 4 lists the equipment used to produce this crop and the costs per hour to operate this equipment. Total annual hours of use for the current crop and for all crops on the farm is also shown.

Table 5 lists the purchase price and salvage value of equipment used to produce this crop, as well annual capital recovery and cash overhead expenses.

Table 6 provides a ranging analysis, sometime referred to as a sensitivity analysis. Table 6 shows how the costs and returns per acre will vary as the yield and/or price ranges above and below the base values from Table 1.

### **Authors**

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### **Disclaimer**

The practices and chemicals specified in the publication are not recommendations. Always read and follow the directions printed on the pesticide label. Due to constantly changing pesticide laws and labels, some pesticides may have been cancelled or had certain uses prohibited. The use of trade names for various products simplifies presentation of this material and should not be considered an endorsement, nor is any criticism implied of similar products not mentioned.

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TABLE 1. COSTS AND RETURNS PER ACRE TO PRODUCE SPRING FEED BARLEY

|  | Quantity/<br>Acre | Unit      | Price or<br>Cost/Unit | Value or<br>Cost/Acre | Your<br>Cost |
|--|-------------------|-----------|-----------------------|-----------------------|--------------|
| <b>GROSS RETURNS</b>                     |                   |           |                       |                       |              |
| Feed Barley                              | 35.00             | bu        | 4.15                  | 145.25                |              |
| <b>TOTAL GROSS RETURNS</b>               | <b>35.00</b>      | <b>bu</b> |                       | <b>145.25</b>         |              |
| <b>OPERATING COSTS</b>                   |                   |           |                       |                       |              |
| <b>Seed:</b>                             |                   |           |                       | <b>13.20</b>          |              |
| Feed Barley Seed - Spring                | 60.00             | lb        | 0.22                  | 13.20                 |              |
| <b>Fertilizer:</b>                       |                   |           |                       | <b>30.00</b>          |              |
| Dry Nitrogen - Pre-plant                 | 40.00             | lb        | 0.55                  | 22.00                 |              |
| Dry P2O5                                 | 10.00             | lb        | 0.53                  | 5.30                  |              |
| Sulfur                                   | 10.00             | lb        | 0.27                  | 2.70                  |              |
| <b>Pesticides/Chemicals:</b>             |                   |           |                       | <b>10.26</b>          |              |
| Roundup Power Max 4.5                    | 16.00             | fl oz     | 0.21                  | 3.36                  |              |
| Ammonium Sulfate                         | 3.00              | lb        | 0.60                  | 1.80                  |              |
| 2,4-D Amine (4 lb)                       | 1.00              | pt        | 3.00                  | 3.00                  |              |
| Banvel 4L                                | 3.00              | fl oz     | 0.70                  | 2.10                  |              |
| <b>Custom:</b>                           |                   |           |                       | <b>5.25</b>           |              |
| Custom Haul: barley                      | 35.00             | bu        | 0.15                  | 5.25                  |              |
| <b>Other:</b>                            |                   |           |                       | <b>4.00</b>           |              |
| Crop Insurance                           | 1.00              | acre      | 4.00                  | 4.00                  |              |
| <b>Labor</b>                             |                   |           |                       | <b>17.72</b>          |              |
| Equipment Operator Labor                 | 0.80              | hrs       | 18.50                 | 14.77                 |              |
| General Farm Labor                       | 0.28              | hrs       | 10.65                 | 2.96                  |              |
| <b>Machinery</b>                         |                   |           |                       | <b>28.56</b>          |              |
| Fuel-Gas                                 | 0.78              | gal       | 2.50                  | 1.94                  |              |
| Fuel-Diesel                              | 5.03              | gal       | 2.35                  | 11.82                 |              |
| Fuel-Road Diesel                         | 0.14              | gal       | 2.85                  | 0.40                  |              |
| Lube                                     |                   |           |                       | 2.12                  |              |
| Machinery Repair                         |                   |           |                       | 12.28                 |              |
| Interest on Operating Capital @ 5.75%    |                   |           |                       | 2.50                  |              |
| <b>TOTAL OPERATING COSTS/ACRE</b>        |                   |           |                       | <b>111.50</b>         |              |
| <b>TOTAL OPERATING COSTS/BU</b>          |                   |           |                       | <b>3.19</b>           |              |
| <b>NET RETURNS ABOVE OPERATING COSTS</b> |                   |           |                       | <b>33.75</b>          |              |

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**TABLE 1. CONTINUED**

|   | Quantity/<br>Acre | Unit | Price or<br>Cost/Unit | Value or<br>Cost/Acre | Your<br>Cost |
|---|-------------------|------|-----------------------|-----------------------|--------------|
| <b>CASH OVERHEAD COSTS</b>                        |                   |      |                       |                       |              |
| General Overhead                                  |                   |      |                       | 3.00                  |              |
| Land Rent   |                   |      |                       | 35.00                 |              |
| Management Fee                                    |                   |      |                       | 10.00                 |              |
| Property Taxes                                    |                   |      |                       | 0.00                  |              |
| Property Insurance                                |                   |      |                       | 1.35                  |              |
| Investment Repairs                                |                   |      |                       | 0.00                  |              |
| <b>TOTAL CASH OVERHEAD COSTS/ACRE</b>             |                   |      |                       | <b>49.35</b>          |              |
| <b>TOTAL CASH OVERHEAD COSTS/BU</b>               |                   |      |                       | <b>1.41</b>           |              |
| <b>TOTAL CASH COSTS/ACRE</b>                      |                   |      |                       | <b>160.85</b>         |              |
| <b>TOTAL CASH COSTS/BU</b>                        |                   |      |                       | <b>4.60</b>           |              |
| <b>NET RETURNS ABOVE CASH COSTS</b>               |                   |      |                       | <b>-15.60</b>         |              |
| <b>NON-CASH OVERHEAD COSTS (Capital Recovery)</b> |                   |      |                       |                       |              |
| Equipment   |                   |      |                       | 45.88                 |              |
| <b>TOTAL NON-CASH OVERHEAD COSTS/ACRE</b>         |                   |      |                       | <b>45.88</b>          |              |
| <b>TOTAL NON-CASH OVERHEAD COSTS/BU</b>           |                   |      |                       | <b>1.31</b>           |              |
| <b>TOTAL COST/ACRE</b>                            |                   |      |                       | <b>206.73</b>         |              |
| <b>TOTAL COST/BU</b>                              |                   |      |                       | <b>5.91</b>           |              |
| <b>NET RETURNS ABOVE TOTAL COST</b>               |                   |      |                       | <b>-61.73</b>         |              |

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**TABLE 2. COSTS PER ACRE TO PRODUCE SPRING FEED BARLEY**

| Operation                              | Operation    | Cash and Labor Costs per Acre |              |                |               |             | Total Cost    | Your Cost |
|--|--------------|-------------------------------|--------------|----------------|---------------|-------------|---------------|-----------|
|  | Time (Hrs/A) | Labor Cost                    | Fuel         | Lube & Repairs | Material Cost | Custom/Rent |               |           |
| Preharvest:                            |              |                               |              |                |               |             |               |           |
| Ground Spray                           | 0.07         | 2.42                          | 1.58         | 1.00           | 10.26         | 0.00        | 15.26         |           |
| Plow                                   | 0.07         | 2.29                          | 2.94         | 1.41           | 0.00          | 0.00        | 6.64          |           |
| Crop Insurance                         | 0.00         | 0.00                          | 0.00         | 0.00           | 4.00          | 0.00        | 4.00          |           |
| Field Cultivation                      | 0.04         | 1.45                          | 1.87         | 1.08           | 0.00          | 0.00        | 4.40          |           |
| Seed Hauling                           | 0.01         | 0.22                          | 0.09         | 0.09           | 0.00          | 0.00        | 0.41          |           |
| Plant                                  | 0.06         | 2.14                          | 2.34         | 4.67           | 43.20         | 0.00        | 52.36         |           |
| Pickup Use                             | 0.23         | 5.18                          | 1.94         | 0.76           | 0.00          | 0.00        | 7.89          |           |
| Service Truck Use                      | 0.06         | 1.41                          | 0.30         | 0.42           | 0.00          | 0.00        | 2.13          |           |
| <b>TOTAL PREHARVEST COSTS</b>          | <b>0.55</b>  | <b>15.10</b>                  | <b>11.07</b> | <b>9.44</b>    | <b>57.46</b>  | <b>0.00</b> | <b>93.07</b>  |           |
| Harvest:                               |              |                               |              |                |               |             |               |           |
| Harvest                                | 0.12         | 2.62                          | 3.10         | 4.96           | 0.00          | 5.25        | 15.92         |           |
| <b>TOTAL HARVEST COSTS</b>             | <b>0.12</b>  | <b>2.62</b>                   | <b>3.10</b>  | <b>4.96</b>    | <b>0.00</b>   | <b>5.25</b> | <b>15.92</b>  |           |
| Interest on Operating Capital at 5.75% |              |                               |              |                |               |             | 2.50          |           |
| <b>TOTAL OPERATING COSTS/ACRE</b>      | <b>0.67</b>  | <b>17.72</b>                  | <b>14.16</b> | <b>14.40</b>   | <b>57.46</b>  | <b>5.25</b> | <b>111.50</b> |           |

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**TABLE 2. CONTINUED**

| Operation                             | Operation       | Cash and Labor Costs per Acre |      |                                 |                  |                 | Total<br>Cost | Your<br>Cost |
|---------------------------------------|-----------------|-------------------------------|------|---------------------------------|------------------|-----------------|---------------|--------------|
|                                       | Time<br>(Hrs/A) | Labor<br>Cost                 | Fuel | Lube<br>&Repairs                | Material<br>Cost | Custom/<br>Rent |               |              |
| <b>CASH OVERHEAD:</b>                 |                 |                               |      |                                 |                  |                 |               |              |
| General Overhead                      |                 |                               |      |                                 |                  |                 | 3.00          |              |
| Land Rent                             |                 |                               |      |                                 |                  |                 | 35.00         |              |
| Management Fee                        |                 |                               |      |                                 |                  |                 | 10.00         |              |
| Property Taxes                        |                 |                               |      |                                 |                  |                 | 0.00          |              |
| Property Insurance                    |                 |                               |      |                                 |                  |                 | 1.35          |              |
| Investment Repairs                    |                 |                               |      |                                 |                  |                 | 0.00          |              |
| <b>TOTAL CASH OVERHEAD COSTS/ACRE</b> |                 |                               |      |                                 |                  |                 | <b>49.35</b>  |              |
| <b>TOTAL CASH COSTS/ACRE</b>          |                 |                               |      |                                 |                  |                 | <b>160.85</b> |              |
| <b>NON-CASH OVERHEAD:</b>             |                 |                               |      |                                 |                  |                 |               |              |
|                                       |                 | Per Producing<br>Acre         |      | Annual Cost<br>Capital Recovery |                  |                 |               |              |
| Equipment                             |                 | 472.99                        |      | 45.88                           |                  |                 | 45.88         |              |
| <b>TOTAL NON-CASH OVERHEAD COSTS</b>  |                 |                               |      |                                 |                  |                 | <b>45.88</b>  |              |
| <b>TOTAL COSTS/ACRE</b>               |                 |                               |      |                                 |                  |                 | <b>206.73</b> |              |

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**TABLE 3. MONTHLY COSTS PER ACRE TO PRODUCE SPRING FEED BARLEY**

|                                      | SEP<br>14   | OCT<br>14   | NOV<br>14   | DEC<br>14   | JAN<br>15   | FEB<br>15   | MAR<br>15    | APR<br>15    | MAY<br>15    | JUN<br>15   | JUL<br>15   | AUG<br>15    | Total         |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|-------------|-------------|--------------|---------------|
| Preharvest:                          |             |             |             |             |             |             |              |              |              |             |             |              |               |
| Ground Spray                         | 7.66        |             |             |             |             |             |              |              |              | 7.60        |             |              | 15.26         |
| Plow                                 |             | 6.64        |             |             |             |             |              |              |              |             |             |              | 6.64          |
| Crop Insurance                       |             |             |             |             |             |             |              | 4.00         |              |             |             |              | 4.00          |
| Field Cultivation                    |             |             |             |             |             |             |              | 4.40         |              |             |             |              | 4.40          |
| Seed Hauling                         |             |             |             |             |             |             |              |              | 0.41         |             |             |              | 0.41          |
| Plant                                |             |             |             |             |             |             |              |              | 52.36        |             |             |              | 52.36         |
| Pickup Use                           | 0.66        | 0.66        | 0.66        | 0.66        | 0.66        | 0.66        | 0.66         | 0.66         | 0.66         | 0.66        | 0.66        | 0.66         | 7.89          |
| Service Truck Use                    | 0.18        | 0.18        | 0.18        | 0.18        | 0.18        | 0.18        | 0.18         | 0.18         | 0.18         | 0.18        | 0.18        | 0.18         | 2.13          |
| <b>TOTAL PREHARVEST COSTS</b>        | <b>8.49</b> | <b>7.47</b> | <b>0.83</b> | <b>0.83</b> | <b>0.83</b> | <b>0.83</b> | <b>0.83</b>  | <b>9.24</b>  | <b>53.60</b> | <b>8.43</b> | <b>0.83</b> | <b>0.83</b>  | <b>93.07</b>  |
| Harvest:                             |             |             |             |             |             |             |              |              |              |             |             |              |               |
| Harvest                              |             |             |             |             |             |             |              |              |              |             |             | 15.92        | 15.92         |
| <b>TOTAL HARVEST COSTS</b>           | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>  | <b>0.00</b>  | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b> | <b>15.92</b> | <b>15.92</b>  |
| Interest on Operating Capital @5.75% | 0.04        | 0.08        | 0.08        | 0.08        | 0.09        | 0.09        | 0.10         | 0.14         | 0.40         | 0.44        | 0.44        | 0.52         | 2.50          |
| <b>TOTAL OPERATING COSTS/ACRE</b>    | <b>8.54</b> | <b>7.55</b> | <b>0.92</b> | <b>0.92</b> | <b>0.92</b> | <b>0.93</b> | <b>0.93</b>  | <b>9.38</b>  | <b>53.99</b> | <b>8.87</b> | <b>1.28</b> | <b>17.28</b> | <b>111.50</b> |
| CASH OVERHEAD                        |             |             |             |             |             |             |              |              |              |             |             |              |               |
| General Overhead                     | 0.25        | 0.25        | 0.25        | 0.25        | 0.25        | 0.25        | 0.25         | 0.25         | 0.25         | 0.25        | 0.25        | 0.25         | 3.00          |
| Land Rent                            |             |             |             |             |             |             | 35.00        |              |              |             |             |              | 35.00         |
| Management Fee                       | 0.83        | 0.83        | 0.83        | 0.83        | 0.83        | 0.83        | 0.83         | 0.83         | 0.83         | 0.83        | 0.83        | 0.83         | 10.00         |
| Property Taxes                       |             |             |             |             |             |             |              |              |              |             |             |              | 0.00          |
| Property Insurance                   |             |             |             |             |             |             |              | 1.35         |              |             |             |              | 1.35          |
| Investment Repairs                   | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00         | 0.00         | 0.00         | 0.00        | 0.00        | 0.00         | 0.00          |
| <b>TOTAL CASH OVERHEAD COSTS</b>     | <b>1.08</b> | <b>1.08</b> | <b>1.08</b> | <b>1.08</b> | <b>1.08</b> | <b>1.08</b> | <b>36.08</b> | <b>2.43</b>  | <b>1.08</b>  | <b>1.08</b> | <b>1.08</b> | <b>1.08</b>  | <b>49.35</b>  |
| <b>TOTAL CASH COSTS/ACRE</b>         | <b>9.62</b> | <b>8.63</b> | <b>2.00</b> | <b>2.00</b> | <b>2.01</b> | <b>2.01</b> | <b>37.01</b> | <b>11.81</b> | <b>55.08</b> | <b>9.96</b> | <b>2.36</b> | <b>18.36</b> | <b>160.85</b> |

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TABLE 4. HOURLY EQUIPMENT COSTS

| Yr | Description                     | Spring Feed Barley | Total      | Cash Overhead    |           |       | Operating     |       | Total Oper. | Total Costs/Hr. |
|----|---------------------------------|--------------------|------------|------------------|-----------|-------|---------------|-------|-------------|-----------------|
|    |                                 | Hours Used         | Hours Used | Capital Recovery | Insurance | Taxes | Lube& Repairs | Fuel  |             |                 |
| 15 | Sprayer - 50' 1,000 gallon Tank | 29                 | 150        | 15.70            | 0.39      | 0.00  | 8.85          | 0.00  | 8.85        | 24.94           |
| 15 | Truck 10-Wheeler                | 4                  | 75         | 65.92            | 2.40      | 0.00  | 8.82          | 9.49  | 18.31       | 86.63           |
| 15 | Service Truck                   | 25                 | 140        | 26.44            | 0.84      | 0.00  | 6.65          | 4.76  | 11.41       | 38.69           |
| 15 | Chisel Plow - 27'               | 26                 | 150        | 26.46            | 0.70      | 0.00  | 12.37         | 0.00  | 12.37       | 39.53           |
| 15 | F. Cultivator -36'              | 17                 | 100        | 42.90            | 1.37      | 0.00  | 16.92         | 0.00  | 16.92       | 61.20           |
| 15 | Tractor 300 HP WT - Used        | 47                 | 250        | 57.60            | 2.03      | 0.00  | 8.37          | 40.92 | 49.28       | 108.91          |
| 15 | Tractor 145 HP - Used           | 32                 | 200        | 27.00            | 0.95      | 0.00  | 4.53          | 19.78 | 24.30       | 52.25           |
| 15 | Tractor 255 HP Rubber Track     | 27                 | 225        | 72.89            | 2.71      | 0.00  | 8.19          | 34.78 | 42.97       | 118.58          |
| 15 | Air Seeder Grain Drill 35'      | 24                 | 150        | 117.74           | 2.91      | 0.00  | 67.29         | 0.00  | 67.29       | 187.95          |
| 15 | SP Combine: 25'                 | 52                 | 300        | 112.24           | 2.83      | 0.00  | 38.22         | 23.87 | 62.09       | 177.15          |
| 15 | Pickup 1 - 3/4 ton              | 53                 | 295        | 13.02            | 0.37      | 0.00  | 3.28          | 8.32  | 11.60       | 25.00           |
| 15 | Pickup 2 - 3/4ton               | 40                 | 220        | 15.61            | 0.48      | 0.00  | 3.28          | 8.32  | 11.60       | 27.70           |



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**TABLE 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS**

ANNUAL EQUIPMENT COSTS

| Yr               | Description                     | Price        | Yrs<br>Life | Salvage<br>Value | Capital<br>Recovery | Cash Overhead  |       | Total      |
|------------------|---------------------------------|--------------|-------------|------------------|---------------------|----------------|-------|------------|
|                  |                                 |              |             |                  |                     | Insur-<br>ance | Taxes |            |
| 15               | Sprayer - 50' 1,000 gallon Tank | 22,000.00    | 10          | 3,890.51         | 2,616.52            | 64.73          | 0.00  | 2,681.25   |
| 15               | Truck 10-Wheeler                | 75,000.00    | 25          | 5,000.00         | 5,493.45            | 200.00         | 0.00  | 5,693.45   |
| 15               | Service Truck                   | 50,000.00    | 20          | 2,500.00         | 4,112.27            | 131.25         | 0.00  | 4,243.52   |
| 15               | Chisel Plow - 27'               | 41,000.00    | 12          | 5,678.77         | 4,410.63            | 116.70         | 0.00  | 4,527.32   |
| 15               | F. Cultivator -36'              | 58,000.00    | 20          | 3,023.04         | 4,766.70            | 152.56         | 0.00  | 4,919.26   |
| 15               | Tractor 300 HP WT - Used        | 200,000.00   | 20          | 25,662.30        | 15,999.89           | 564.16         | 0.00  | 16,564.04  |
| 15               | Tractor 145 HP - Used           | 75,000.00    | 20          | 9,623.36         | 5,999.96            | 211.56         | 0.00  | 6,211.52   |
| 15               | Tractor 255 HP Rubber Track     | 250,000.00   | 25          | 21,141.94        | 18,224.03           | 677.85         | 0.00  | 18,901.88  |
| 15               | Air Seeder Grain Drill 35'      | 165,000.00   | 10          | 29,178.83        | 19,623.93           | 485.45         | 0.00  | 20,109.37  |
| 15               | SP Combine: 25'                 | 317,000.00   | 10          | 59,795.97        | 37,411.46           | 941.99         | 0.00  | 38,353.45  |
| 15               | Pickup 1 - 3/4 ton              | 41,000.00    | 12          | 8,000.00         | 4,268.96            | 122.50         | 0.00  | 4,391.46   |
| 15               | Pickup 2 - 3/4ton               | 41,000.00    | 15          | 6,000.00         | 3,816.90            | 117.50         | 0.00  | 3,934.40   |
| TOTAL            |                                 | 1,335,000.00 | -           | 179,494.73       | 126,744.70          | 3,786.24       | 0.00  | 130,530.94 |
| 90% of New Cost* |                                 | 1,201,500.00 | -           | 161,545.25       | 114,070.23          | 3,407.61       | 0.00  | 117,477.84 |

\*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

| Description      | Price | Yrs<br>Life | Salvage<br>Value | Capital<br>Recovery | Cash Overhead  |       |         | Total |
|------------------|-------|-------------|------------------|---------------------|----------------|-------|---------|-------|
|                  |       |             |                  |                     | Insur-<br>ance | Taxes | Repairs |       |
| INVESTMENT       |       |             |                  |                     |                |       |         |       |
| TOTAL INVESTMENT | 0.00  | -           | 0.00             | 0.00                | 0.00           | 0.00  | 0.00    | 0.00  |

ANNUAL BUSINESS OVERHEAD COSTS

| Description      | Units/<br>Farm | Unit | Price/<br>Unit | Total<br>Cost |
|------------------|----------------|------|----------------|---------------|
| General Overhead | 400            | acre | 3.00           | 1,200.00      |
| Land Rent        | 400            | acre | 35.00          | 14,000.00     |
| Management Fee   | 400            | acre | 10.00          | 4,000.00      |

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**TABLE 6. RANGING ANALYSIS - SPRING FEED BARLEY**

COSTS PER ACRE AND PER BU AT VARYING YIELDS TO PRODUCE SPRING FEED BARLEY

|                                       | YIELD(BU) |        |        |        |        |        |        |
|---------------------------------------|-----------|--------|--------|--------|--------|--------|--------|
|                                       | 29.00     | 31.00  | 33.00  | 35.00  | 37.00  | 39.00  | 41.00  |
| OPERATING COSTS/ACRE:                 |           |        |        |        |        |        |        |
| Preharvest                            | 93.07     | 93.07  | 93.07  | 93.07  | 93.07  | 93.07  | 93.07  |
| Harvest                               | 15.92     | 15.92  | 15.92  | 15.92  | 15.92  | 15.92  | 15.92  |
| Interest on Operating Capital @ 5.75% | 2.50      | 2.50   | 2.50   | 2.50   | 2.50   | 2.50   | 2.50   |
| TOTAL OPERATING COSTS/ACRE            | 111.50    | 111.50 | 111.50 | 111.50 | 111.50 | 111.50 | 111.50 |
| TOTAL OPERATING COSTS/BU              | 3.84      | 3.60   | 3.38   | 3.19   | 3.01   | 2.86   | 2.72   |
| CASH OVERHEAD COSTS/ACRE              | 49.35     | 49.35  | 49.35  | 49.35  | 49.35  | 49.35  | 49.35  |
| TOTAL CASH COSTS/ACRE                 | 160.85    | 160.85 | 160.85 | 160.85 | 160.85 | 160.85 | 160.85 |
| TOTAL CASH COSTS/BU                   | 5.55      | 5.19   | 4.87   | 4.60   | 4.35   | 4.12   | 3.92   |
| NON-CASH OVERHEAD COSTS/ACRE          | 45.88     | 45.88  | 45.88  | 45.88  | 45.88  | 45.88  | 45.88  |
| TOTAL COSTS/ACRE                      | 206.73    | 206.73 | 206.73 | 206.73 | 206.73 | 206.73 | 206.73 |
| TOTAL COSTS/BU                        | 7.13      | 6.67   | 6.26   | 5.91   | 5.59   | 5.30   | 5.04   |

Net Return Per Acre Above Operating Costs For Spring Feed Barley

| PRICE (\$/bu) | YIELD (bu/acre) |       |       |       |       |       |       |
|---------------|-----------------|-------|-------|-------|-------|-------|-------|
| Feed Barley   | 29.00           | 31.00 | 33.00 | 35.00 | 37.00 | 39.00 | 41.00 |
| 3.40          | -12.90          | -6.10 | 0.70  | 7.50  | 14.30 | 21.10 | 27.90 |
| 3.65          | -5.65           | 1.65  | 8.95  | 16.25 | 23.55 | 30.85 | 38.15 |
| 3.90          | 1.60            | 9.40  | 17.20 | 25.00 | 32.80 | 40.60 | 48.40 |
| 4.15          | 8.85            | 17.15 | 25.45 | 33.75 | 42.05 | 50.35 | 58.65 |
| 4.40          | 16.10           | 24.90 | 33.70 | 42.50 | 51.30 | 60.10 | 68.90 |
| 4.65          | 23.35           | 32.65 | 41.95 | 51.25 | 60.55 | 69.85 | 79.15 |
| 4.90          | 30.60           | 40.40 | 50.20 | 60.00 | 69.80 | 79.60 | 89.40 |

Net Return Per Acre Above Cash Costs For Spring Feed Barley

| PRICE (\$/bu) | YIELD (bu/acre) |        |        |        |        |        |        |
|---------------|-----------------|--------|--------|--------|--------|--------|--------|
| Feed Barley   | 29.00           | 31.00  | 33.00  | 35.00  | 37.00  | 39.00  | 41.00  |
| 3.40          | -62.25          | -55.45 | -48.65 | -41.85 | -35.05 | -28.25 | -21.45 |
| 3.65          | -55.00          | -47.70 | -40.40 | -33.10 | -25.80 | -18.50 | -11.20 |
| 3.90          | -47.75          | -39.95 | -32.15 | -24.35 | -16.55 | -8.75  | -0.95  |
| 4.15          | -40.50          | -32.20 | -23.90 | -15.60 | -7.30  | 1.00   | 9.30   |
| 4.40          | -33.25          | -24.45 | -15.65 | -6.85  | 1.95   | 10.75  | 19.55  |
| 4.65          | -26.00          | -16.70 | -7.40  | 1.90   | 11.20  | 20.50  | 29.80  |
| 4.90          | -18.75          | -8.95  | 0.85   | 10.65  | 20.45  | 30.25  | 40.05  |

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**TABLE 6. RANGING ANALYSIS CONTINUED**

Net Return Per Acre Above Total Costs For Spring Feed Barley

| PRICE (\$/bu) | YIELD (bu/acre) |         |        |        |        |        |        |
|---------------|-----------------|---------|--------|--------|--------|--------|--------|
| Feed Barley   | 29.00           | 31.00   | 33.00  | 35.00  | 37.00  | 39.00  | 41.00  |
| 3.40          | -108.13         | -101.33 | -94.53 | -87.73 | -80.93 | -74.13 | -67.33 |
| 3.65          | -100.88         | -93.58  | -86.28 | -78.98 | -71.68 | -64.38 | -57.08 |
| 3.90          | -93.63          | -85.83  | -78.03 | -70.23 | -62.43 | -54.63 | -46.83 |
| 4.15          | -86.38          | -78.08  | -69.78 | -61.48 | -53.18 | -44.88 | -36.58 |
| 4.40          | -79.13          | -70.33  | -61.53 | -52.73 | -43.93 | -35.13 | -26.33 |
| 4.65          | -71.88          | -62.58  | -53.28 | -43.98 | -34.68 | -25.38 | -16.08 |
| 4.90          | -64.63          | -54.83  | -45.03 | -35.23 | -25.43 | -15.63 | -5.83  |