# Southcentral Idaho: Magic Valley Alfalfa Hay Production

Ben Eborn

Magic Valley

## 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 based on data collected annually by the University of Idaho from agricultural supply companies. The selling price for the commodity is an historical average, not a current year's forecast price. The cost estimate shown here is typical for growing alfalfa hay under irrigation in the Magic Valley of southcentral Idaho. Production practices are based on data from farmers, crop consultants, and extension personnel. These aren't University of Idaho recommendations. Production practices most closely represent those in Cassia, Minidoka, Jerome, Gooding, and Twin Falls 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

This costs and returns estimate models a 2,200-acre farm with 400 acres in alfalfa hay, 550 acres in potatoes, 550 acres in sugarbeets, and 700 acres in some combination of grain, corn or dry beans. The alfalfa stand is kept in production 4 years. Approximately 100 acres of alfalfa are established each year.

The farm uses a center pivot irrigation system and surface water delivered to the farm from an irrigation district. The irrigation district charges a flat fee per acre for water. Irrigation power use is based only on pressurization (no lift). Power costs per acre-inch of water applied are calculated using 2017 Idaho Power Schedule 24 Agricultural Irrigation Service rates.

### Production Practices

Tillage costs are incurred only in the year hay is established and these are prorated along with other establishment costs over the alfalfa hay's four production years. This is approximately $75 per acre assuming a 4-year stand life. Alfalfa hay is cut four times, then raked, baled, hauled, and stacked by a custom operator. A total of seven tons of hay are produced.

Fertilizer is applied by a custom applicator in the spring before the stand breaks winter dormancy. An herbicide is applied along with the fertilizer. An insecticide is custom applied by air in June for aphid and weevil control. Alfalfa hay receives about 36 inches of water during the growing season: 3.0 inches in April, 5 inches in May, 7 inches in June, 7 inches in July, 7 inches in August, 5 inches in September, and 2 inches in October.

### Machinery

Equipment used to produce irrigated alfalfa hay 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. 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 publication 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 | $9.85 | 15% | $11.35 |
| Truck Drivers | $13.35 | 15% | $15.35 |
| Equipment Operators | $15.75 | 25% | $19.70 |
| Irrigation Labor | | | |
| Set Move: HL & WL | $10.75 | 30% | $14.00 |
| Continuous Move: CP & L | $15.75 | 25% | $19.70 |

Set Move includes: handlines and wheellines
Continuous Move includes: center pivots and linear move
Payroll overhead for set move systems includes housing

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 6.25 percent. Interest on intermediate term capital, primarily equipment, is calculated using a nominal rate of 6.0 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 multiple-year cash lease for hay and covers the irrigation system ownership costs (depreciation, interest, and insurance). Since charges for irrigation water, repairs and power costs are listed separately, land rent may appear low because land owners pay some or even all these expenses in many cash leases.

### 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. It 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.

**Author**
Ben Eborn is a University of Idaho Extension agricultural economist.

UNIVERSITY OF IDAHO

**SOUTHCENTRAL IDAHO**

**EBB3-AH-17**

**TABLE 1. COSTS AND RETURNS PER ACRE TO PRODUCE ALFALFA HAY**

| | Quantity/ Acre | Unit | Price or Cost/Unit | Value or Cost/Acre | Your Cost |
|---|---|---|---|---|---|
| GROSS RETURNS | | | | | |
| Alfalfa Hay | 7.00 | ton | 130.00 | 910.00 | |
| TOTAL GROSS RETURNS | 7.00 | ton | | 910.00 | |
| OPERATING COSTS | | | | | |
| **Fertilizer:** | | | | **69.95** | |
| Dry P2O5 | 95.00 | lb | 0.38 | 36.10 | |
| K2O | 55.00 | lb | 0.31 | 17.05 | |
| Dry Nitrogen | 20.00 | lb | 0.40 | 8.00 | |
| Sulfur | 40.00 | lb | 0.22 | 8.80 | |
| **Pesticide:** | | | | **18.55** | |
| Metribuzin 75DF | 1.00 | lb | 11.50 | 11.50 | |
| Warrior II w/ Zeon Technology | 3.00 | fl oz | 2.35 | 7.05 | |
| **Custom:** | | | | **293.50** | |
| Custom Fertilize w/ Herbicide | 1.00 | acre | 8.75 | 8.75 | |
| Custom Swath Hay | 4.00 | acre | 18.00 | 72.00 | |
| Custom Rake & Bale: 4'x4'x8' | 7.00 | ton | 23.00 | 161.00 | |
| Custom Stack: 4'x4'x8' | 7.00 | ton | 6.25 | 43.75 | |
| Custom Air Spray - 3 gallon | 1.00 | acre | 8.00 | 8.00 | |
| **Irrigation:** | | | | **136.42** | |
| Water Assessment | 1.00 | acre | 47.50 | 47.50 | |
| Irrigation Repairs - CP | 36.00 | ac-in | 0.53 | 19.08 | |
| Irrigation Power - CP | 36.00 | ac-in | 1.94 | 69.84 | |
| **Labor** | | | | **47.67** | |
| Equipment Operator Labor | 0.98 | hrs | 19.70 | 19.31 | |
| Irrigation Labor: CP | 1.44 | hrs | 19.70 | 28.37 | |
| **Machinery** | | | | **9.23** | |
| Fuel-Gas | 2.47 | gal | 2.45 | 6.05 | |
| Fuel-Diesel | 0.00 | gal | 2.15 | 0.00 | |
| Fuel-Road Diesel | 0.19 | gal | 2.75 | 0.52 | |
| Lube | | | | 0.98 | |
| Machinery Repair | | | | 1.68 | |
| Interest on Operating Capital @ 6.25% | | | | 17.41 | |
| TOTAL OPERATING COSTS/ACRE | | | | 592.74 | |
| TOTAL OPERATING COSTS/TON | | | | 84.68 | |
| NET RETURNS ABOVE OPERATING COSTS | | | | 317.26 | |

UNIVERSITY OF IDAHO

**SOUTHCENTRAL IDAHO**

**EBB3-AH-17**

**TABLE 1. CONTINUED**

| | Quantity/ Acre | Unit | Price or Cost/Unit | Value or Cost/Acre | Your Cost |
|---|---|---|---|---|---|
| CASH OVERHEAD COSTS | | | | | |
| General Overhead | | | | 15.00 | |
| Land Rent | | | | 275.00 | |
| Management Fee | | | | 50.00 | |
| Property Taxes | | | | 0.00 | |
| Property Insurance | | | | 0.94 | |
| Investment Repairs | | | | 0.00 | |
| TOTAL CASH OVERHEAD COSTS/ACRE | | | | 340.94 | |
| TOTAL CASH OVERHEAD COSTS/TON | | | | 48.71 | |
| TOTAL CASH COSTS/ACRE | | | | 933.68 | |
| TOTAL CASH COSTS/TON | | | | 133.38 | |
| NET RETURNS ABOVE CASH COSTS | | | | -23.68 | |
| NON-CASH OVERHEAD COSTS (Capital Recovery) | | | | | |
| Amort. Est. Cost | | | | 78.64 | |
| Equipment | | | | 10.52 | |
| TOTAL NON-CASH OVERHEAD COSTS/ACRE | | | | 89.16 | |
| TOTAL NON-CASH OVERHEAD COSTS/TON | | | | 12.74 | |
| TOTAL COST/ACRE | | | | 1,022.84 | |
| TOTAL COST/TON | | | | 146.12 | |
| NET RETURNS ABOVE TOTAL COST | | | | -112.84 | |

UNIVERSITY OF IDAHO

SOUTHCENTRAL IDAHO

EBB3-AH-17

**TABLE 2. COSTS PER ACRE TO PRODUCE ALFALFA HAY**

| Operation | Operation Time (Hrs/A) | Cash and Labor Costs per Acre | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Labor Cost | Fuel | Lube &Repairs | Material Cost | Custom/ Rent | Total Cost | Your Cost |
| Preharvest: | | | | | | | | |
| Fertilize | 0.00 | 0.00 | 0.00 | 0.00 | 81.45 | 8.75 | 90.20 | |
| Water Assessment | 0.00 | 0.00 | 0.00 | 0.00 | 47.50 | 0.00 | 47.50 | |
| Irrigation Repairs | 0.00 | 0.00 | 0.00 | 0.00 | 19.08 | 0.00 | 19.08 | |
| Irrigate | 0.00 | 28.37 | 0.00 | 0.00 | 69.84 | 0.00 | 98.21 | |
| Air Spray | 0.00 | 0.00 | 0.00 | 0.00 | 7.05 | 8.00 | 15.05 | |
| General Pickup Use | 0.74 | 17.53 | 6.05 | 2.45 | 0.00 | 0.00 | 26.03 | |
| Service Truck Use | 0.08 | 1.77 | 0.52 | 0.22 | 0.00 | 0.00 | 2.50 | |
| TOTAL PREHARVEST COSTS | 0.82 | 47.67 | 6.57 | 2.67 | 224.92 | 16.75 | 298.58 | |
| Harvest : | | | | | | | | |
| Swath | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 72.00 | 72.00 | |
| Rake & Bale | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 161.00 | 161.00 | |
| Stack with Short Haul | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 43.75 | 43.75 | |
| TOTAL HARVEST COSTS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 276.75 | 276.75 | |
| Interest on Operating Capital at 6.25% | | | | | | | 17.41 | |
| TOTAL OPERATING COSTS/ACRE | 0.82 | 47.67 | 6.57 | 2.67 | 224.92 | 293.50 | 592.74 | |

UNIVERSITY OF IDAHO

**SOUTHCENTRAL IDAHO**

**EBB3-AH-17**

**TABLE 2. CONTINUED**

| Operation | Operation Time (Hrs/A) | Cash and Labor Costs per Acre | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Labor Cost | Fuel | Lube &Repairs | Material Cost | Custom/ Rent | Total Cost | Your Cost |
| CASH OVERHEAD: | | | | | | | | |
| General Overhead | | | | | | | 15.00 | |
| Land Rent | | | | | | | 275.00 | |
| Management Fee | | | | | | | 50.00 | |
| Property Taxes | | | | | | | 0.00 | |
| Property Insurance | | | | | | | 0.94 | |
| Investment Repairs | | | | | | | 0.00 | |
| TOTAL CASH OVERHEAD COSTS/ACRE | | | | | | | 340.94 | |
| TOTAL CASH COSTS/ACRE | | | | | | | 933.68 | |
| NON-CASH OVERHEAD: | | Per Producing Acre | | Annual Cost Capital Recovery | | | | |
| Amort. Est. Cost | | 272.50 | | 78.64 | | | 78.64 | |
| Equipment | | 87.90 | | 10.52 | | | 10.52 | |
| TOTAL NON-CASH OVERHEAD COSTS | | 360.40 | | 89.16 | | | 89.16 | |
| TOTAL COSTS/ACRE | | | | | | | 1,022.84 | |

UNIVERSITY OF IDAHO

SOUTHCENTRAL IDAHO

EBB3-AH-17

**TABLE 3. MONTHLY COSTS PER ACRE TO PRODUCE ALFALFA HAY**

| | NOV 14 | DEC 14 | JAN 15 | FEB 15 | MAR 15 | APR 15 | MAY 15 | JUN 15 | JUL 15 | AUG 15 | SEP 15 | OCT 15 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preharvest: | | | | | | | | | | | | | |
| Fertilize | 90.20 | | | | | | | | | | | | 90.20 |
| Water Assessment | | | | | | 47.50 | | | | | | | 47.50 |
| Irrigation Repairs | | | | | | 19.08 | | | | | | | 19.08 |
| Irrigate | | | | | | 8.18 | 13.64 | 19.10 | 19.10 | 19.10 | 13.64 | 5.46 | 98.21 |
| Air Spray | | | | | | | | 15.05 | | | | | 15.05 |
| General Pickup Use | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 26.03 |
| Service Truck Use | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 2.50 |
| TOTAL PREHARVEST COSTS | 92.58 | 2.38 | 2.38 | 2.38 | 2.38 | 77.14 | 16.02 | 36.52 | 21.47 | 21.47 | 16.02 | 7.83 | 298.58 |
| Harvest : | | | | | | | | | | | | | |
| Swath | | | | | | | 18.00 | | 18.00 | 18.00 | 18.00 | | 72.00 |
| Rake & Bale | | | | | | | 57.50 | | 46.00 | 34.50 | 23.00 | | 161.00 |
| Stack with Short Haul | | | | | | | 15.63 | | 12.50 | 9.38 | 6.25 | | 43.75 |
| TOTAL HARVEST COSTS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 91.13 | 0.00 | 76.50 | 61.88 | 47.25 | 0.00 | 276.75 |
| Interest on Operating Capital @6.25% | 0.48 | 0.49 | 0.51 | 0.52 | 0.53 | 0.93 | 1.49 | 1.68 | 2.19 | 2.63 | 2.96 | 3.00 | 17.41 |
| TOTAL OPERATING COSTS/ACRE | 93.06 | 2.87 | 2.89 | 2.90 | 2.91 | 78.08 | 108.63 | 38.21 | 100.17 | 85.98 | 66.22 | 10.83 | 592.74 |
| CASH OVERHEAD | | | | | | | | | | | | | |
| General Overhead | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 15.00 |
| Land Rent | | | | | | | | | | | | | 275.00 |
| Management Fee | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 50.00 |
| Property Taxes | | | | | | | | | | | | | 0.00 |
| Property Insurance | | | | | | 0.94 | | | | | | | 0.94 |
| 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 |
| TOTAL CASH OVERHEAD COSTS | 5.42 | 5.42 | 5.42 | 5.42 | 5.42 | 6.36 | 5.42 | 5.42 | 5.42 | 5.42 | 5.42 | 5.42 | 340.94 |
| TOTAL CASH COSTS/ACRE | 98.48 | 8.29 | 8.30 | 8.31 | 8.33 | 84.43 | 114.05 | 43.62 | 105.58 | 91.39 | 71.64 | 16.25 | 933.68 |

UNIVERSITY OF IDAHO

**SOUTHCENTRAL IDAHO**

**EBB3-AH-17**

**TABLE 4. HOURLY EQUIPMENT COSTS**

| Yr | Description | Alfalfa Hay Hours Used | Total Hours Used | Capital Recovery | Cash Overhead Insur-ance | Cash Overhead Taxes | Operating Lube& Repairs | Operating Fuel | Operating Total Oper. | Total Costs/Hr. |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | Pickup 1 - 3/4 ton | 100 | 750 | 9.04 | 0.17 | 0.00 | 3.30 | 8.16 | 11.46 | 20.67 |
| 15 | Pickup 2 - 3/4 ton | 100 | 750 | 9.04 | 0.17 | 0.00 | 3.30 | 8.16 | 11.46 | 20.67 |
| 15 | Service Truck | 30 | 80 | 39.30 | 1.24 | 0.00 | 2.88 | 6.88 | 9.75 | 50.29 |
| 15 | Pickup 3 - 3/4 ton | 48 | 325 | 12.64 | 0.34 | 0.00 | 3.30 | 8.16 | 11.46 | 24.45 |
| 15 | Pickup 4 - 3/4 ton | 48 | 325 | 12.64 | 0.34 | 0.00 | 3.30 | 8.16 | 11.46 | 24.45 |

UNIVERSITY OF IDAHO

**SOUTHCENTRAL IDAHO**

**EBB3-AH-17**

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

ANNUAL EQUIPMENT COSTS

| | | | | | | Cash Overhead | | |
|---|---|---|---|---|---|---|---|---|
| Yr | Description | Price | Yrs Life | Salvage Value | Capital Recovery | Insur-ance | Taxes | Total |
| 15 | Pickup 1 - 3/4 ton | 42,000.00 | 5 | 13,750.00 | 7,531.45 | 139.38 | 0.00 | 7,670.82 |
| 15 | Pickup 2 - 3/4 ton | 42,000.00 | 5 | 13,750.00 | 7,531.45 | 139.38 | 0.00 | 7,670.82 |
| 15 | Service Truck | 41,000.00 | 20 | 3,000.00 | 3,493.01 | 110.00 | 0.00 | 3,603.01 |
| 15 | Pickup 3 - 3/4 ton | 42,000.00 | 12 | 7,500.00 | 4,565.06 | 123.75 | 0.00 | 4,688.81 |
| 15 | Pickup 4 - 3/4 ton | 42,000.00 | 12 | 7,500.00 | 4,565.06 | 123.75 | 0.00 | 4,688.81 |
| | TOTAL | 209,000.00 | - | 45,500.00 | 27,686.02 | 636.25 | 0.00 | 28,322.27 |
| | 90% of New Cost* | 188,100.00 | - | 40,950.00 | 24,917.42 | 572.63 | 0.00 | 25,490.05 |

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

| | | | | | Cash Overhead | | | |
|---|---|---|---|---|---|---|---|---|
| Description | Price | Yrs Life | Salvage Value | Capital Recovery | Insur-ance | Taxes | Repairs | Total |
| INVESTMENT | | | | | | | | |
| Amort. Est. Cost | 109,000.00 | 4 | 0.00 | 31,456.47 | 272.50 | 0.00 | 0.00 | 31,728.97 |
| TOTAL INVESTMENT | 109,000.00 | - | 0.00 | 31,456.47 | 272.50 | 0.00 | 0.00 | 31,728.97 |

ANNUAL BUSINESS OVERHEAD COSTS

| Description | Units/ Farm | Unit | Price/ Unit | Total Cost |
|---|---|---|---|---|
| General Overhead | 400 | acre | 15.00 | 6,000.00 |
| Land Rent | 400 | acre | 275.00 | 110,000.00 |
| Management Fee | 400 | acre | 50 | 20,000.00 |

UNIVERSITY OF IDAHO

SOUTHCENTRAL IDAHO

EBB3-AH-17

**TABLE 6. RANGING ANALYSIS - ALFALFA HAY**

COSTS PER ACRE AND PER TON AT VARYING YIELDS TO PRODUCE ALFALFA HAY

| | YIELD(TON) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 |
| OPERATING COSTS/ACRE: | | | | | | | |
| Preharvest | 298.58 | 298.58 | 298.58 | 298.58 | 298.58 | 298.58 | 298.58 |
| Harvest | 276.75 | 276.75 | 276.75 | 276.75 | 276.75 | 276.75 | 276.75 |
| Interest on Operating Capital @ 6.25% | 17.41 | 17.41 | 17.41 | 17.41 | 17.41 | 17.41 | 17.41 |
| TOTAL OPERATING COSTS/ACRE | 592.74 | 592.74 | 592.74 | 592.74 | 592.74 | 592.74 | 592.74 |
| TOTAL OPERATING COSTS/TON | 107.77 | 98.79 | 91.19 | 84.68 | 79.03 | 74.09 | 69.73 |
| CASH OVERHEAD COSTS/ACRE | 340.94 | 340.94 | 340.94 | 340.94 | 340.94 | 340.94 | 340.94 |
| TOTAL CASH COSTS/ACRE | 933.68 | 933.68 | 933.68 | 933.68 | 933.68 | 933.68 | 933.68 |
| TOTAL CASH COSTS/TON | 169.76 | 155.61 | 143.64 | 133.38 | 124.49 | 116.71 | 109.84 |
| NON-CASH OVERHEAD COSTS/ACRE | 89.16 | 89.16 | 89.16 | 89.16 | 89.16 | 89.16 | 89.16 |
| TOTAL COSTS/ACRE | 1,022.84 | 1,022.84 | 1,022.84 | 1,022.84 | 1,022.84 | 1,022.84 | 1,022.84 |
| TOTAL COSTS/TON | 185.97 | 170.47 | 157.36 | 146.12 | 136.38 | 127.86 | 120.33 |

Net Return Per Acre Above Operating Costs For Alfalfa Hay

| PRICE ($/ton) | YIELD (ton/acre) | | | | | | |
|---|---|---|---|---|---|---|---|
| Alfalfa Hay | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 |
| 145.00 | 204.76 | 277.26 | 349.76 | 422.26 | 494.76 | 567.26 | 639.76 |
| 150.00 | 232.26 | 307.26 | 382.26 | 457.26 | 532.26 | 607.26 | 682.26 |
| 155.00 | 259.76 | 337.26 | 414.76 | 492.26 | 569.76 | 647.26 | 724.76 |
| 160.00 | 287.26 | 367.26 | 447.26 | 527.26 | 607.26 | 687.26 | 767.26 |
| 165.00 | 314.76 | 397.26 | 479.76 | 562.26 | 644.76 | 727.26 | 809.76 |
| 170.00 | 342.26 | 427.26 | 512.26 | 597.26 | 682.26 | 767.26 | 852.26 |
| 175.00 | 369.76 | 457.26 | 544.76 | 632.26 | 719.76 | 807.26 | 894.76 |

Net Return Per Acre Above Cash Costs For Alfalfa Hay

| PRICE ($/ton) | YIELD (ton/acre) | | | | | | |
|---|---|---|---|---|---|---|---|
| Alfalfa Hay | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 |
| 145.00 | -136.18 | -63.68 | 8.82 | 81.32 | 153.82 | 226.32 | 298.82 |
| 150.00 | -108.68 | -33.68 | 41.32 | 116.32 | 191.32 | 266.32 | 341.32 |
| 155.00 | -81.18 | -3.68 | 73.82 | 151.32 | 228.82 | 306.32 | 383.82 |
| 160.00 | -53.68 | 26.32 | 106.32 | 186.32 | 266.32 | 346.32 | 426.32 |
| 165.00 | -26.18 | 56.32 | 138.82 | 221.32 | 303.82 | 386.32 | 468.82 |
| 170.00 | 1.32 | 86.32 | 171.32 | 256.32 | 341.32 | 426.32 | 511.32 |
| 175.00 | 28.82 | 116.32 | 203.82 | 291.32 | 378.82 | 466.32 | 553.82 |

UNIVERSITY OF IDAHO

SOUTHCENTRAL IDAHO

EBB3-AH-17

**TABLE 6. RANGING ANALYSIS CONTINUED**

Net Return Per Acre Above Total Costs For Alfalfa Hay

| PRICE ($/ton) | YIELD (ton/acre) | | | | | | |
|---|---|---|---|---|---|---|---|
| Alfalfa Hay | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 |
| 145.00 | -225.34 | -152.84 | -80.34 | -7.84 | 64.66 | 137.16 | 209.66 |
| 150.00 | -197.84 | -122.84 | -47.84 | 27.16 | 102.16 | 177.16 | 252.16 |
| 155.00 | -170.34 | -92.84 | -15.34 | 62.16 | 139.66 | 217.16 | 294.66 |
| 160.00 | -142.84 | -62.84 | 17.16 | 97.16 | 177.16 | 257.16 | 337.16 |
| 165.00 | -115.34 | -32.84 | 49.66 | 132.16 | 214.66 | 297.16 | 379.66 |
| 170.00 | -87.84 | -2.84 | 82.16 | 167.16 | 252.16 | 337.16 | 422.16 |
| 175.00 | -60.34 | 27.16 | 114.66 | 202.16 | 289.66 | 377.16 | 464.66 |