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**UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION**

**2001**

**SAMPLE COSTS  
TO ESTABLISH AND PRODUCE  
*ALFALFA HAY***



**INTERMOUNTAIN REGION – Siskiyou County**  
Center Pivot Irrigation

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# UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

## SAMPLE COSTS TO ESTABLISH AND PRODUCE ALFALFA HAY Intermountain Region - Siskiyou County - 2001

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### INTRODUCTION

Sample costs to establish an alfalfa stand and produce alfalfa hay, under center pivot irrigation, in the higher elevations of the Intermountain Region – Siskiyou County are shown in this study. The study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. Practices described are based on the production practices considered typical for this crop and region, but will not apply to every farm situation. Sample costs for labor, materials, equipment and custom services are based on current figures. A “*Your Costs*” column in Tables 1, 2, 5 and 6 is provided to enter your costs.

The hypothetical farm operations, production practices, overhead, and calculations are described under the assumptions. For additional information or an explanation of calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, California, (530) 752-3589 or the local UC Cooperative Extension office.

Sample Cost of Production Studies for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis, (530) 752-1515. Current studies can be downloaded from the department website <http://coststudies.ucdavis.edu> or obtained from the local county UC Cooperative Extension offices.

## ASSUMPTIONS

The following assumptions refer to Tables 1 to 10 and pertain to sample costs to establish an alfalfa stand and produce alfalfa hay using center pivot irrigation, typical of the higher elevations, in the Intermountain Region – Siskiyou County. Practices described are not University of California recommendations, but represent production practices and materials considered typical of a well-managed alfalfa stand in the region. Costs, materials, and practices in this study will not be applicable to all situations. Establishment and cultural practices vary among growers within the region; variations can be significant. For information on production practices refer to the *Intermountain Alfalfa Management* publication. **The use of trade names in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products.**

**Farm.** The hypothetical farm consist of 500 non-contiguous acres of land on which 400 acres are being planted to alfalfa, 95 acres are planted to other crops, and five acres are roads and farmstead. The farm is located in the higher elevations and has a shorter growing season, than other portions of the county. The owner manages the farm. Typically, the grower will rotate out a portion - one half to whole pivot (62 or 125 acres) - of the crop each year.

### Stand Establishment

Tables 1, 2, 3, and 4

**Land Preparation.** The ground is ripped to a depth of 20 to 32 inches to fracture the soil to improve water infiltration. The field is disced to break up large clods, creating better seed-to-soil contact for good germination. The land is level, so the fields are floated to remove small high and low spots.

**Planting.** A cultipacker is used to firm the seedbed prior to and after planting. In late August, alfalfa seed is planted at 20 pounds per acre to a depth of 1/4 to 1/2 inch. A custom operator does the planting with a pneumatic broadcast planter. Stand life in the region is 5 to 8 years. Stand life in this study is 6 years.

**Fertilization.** Prior to planting, fertilizers are spread and incorporated by discing. Sulfur is applied at a rate of 250 pounds per acre and phosphorus as 11-52-0 at 200 pounds per acre or 104 pounds of P<sub>2</sub>O<sub>5</sub>. This amount of sulfur is sufficient to supply crop needs for 3 to 4 years, and the phosphorus for two years. In this study one-third of the sulfur cost and one-half of the phosphorus cost is charged to the establishment year. The fertilizers are custom spread by a fertilizer company at a cost of \$5.35 per acre. Growers should apply fertilizer or soil amendments after soil tests determine pH and nutrient levels. Plant tissue tests are recommended in subsequent years.

**Irrigation.** Irrigation for the newly planted alfalfa begins immediately after planting. Water is applied through a center pivot sprinkler system from late August to early October or until fall rains. A total of six acre-inches is applied during the establishment year.

**Weed Control.** Grasses and broadleaf weeds compete with the seedlings during stand establishment. In early October, a post emergent application of Pursuit at 1.44 ounces per acre and Herbimax, a crop oil adjuvant, are applied by a custom applicator to control broadleaf weeds and some grasses.

**Harvest.** August plantings will not produce a crop in the current year.

## Production Cultural Practices and Material Inputs

Tables 5 to 10.

**Irrigation.** Irrigation begins in April and continues into September. Two and one-quarter acre-feet (28 acre inches) of water at \$25 per acre foot or \$2.08 per acre-inch is applied through the center pivot sprinkler system. Once the irrigation settings are made, the system makes revolutions on its own. Typically the grower turns the machine on and off, and manages the irrigation, therefore no irrigation labor costs are shown.

**Fertilization.** Phosphorus and sulfur are essential for alfalfa production in this region and are first applied in the establishment year. In March of the second and fourth production years, 200 pounds of phosphorus as 11-52-0 (104 lbs P<sub>2</sub>O<sub>5</sub>) is custom applied. Two hundred fifty pounds of sulfur (elemental) per acre is also custom spread in March of the third production year. Phosphorus is applied every two years and one-half the cost is charged to the budget each year. Sulfur is applied every three to four years and one-third of the cost is charged to the budget each year during the production years. The costs for the operations are shown in Tables 4, 5, and 6. Fertilize alfalfa after either a soil or plant tissue test has indicated a need.

**Pest Management.** The pesticides and rates mentioned in this cost study are listed in UC *Integrated Pest Management Guidelines: Alfalfa*. For more information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu). Written recommendations are required for many pesticides, and are made by licensed pest control advisors. For information on pesticide use permits, contact the local county agricultural commissioner's office.

**Weeds.** Weeds invade alfalfa in the fall, as the stand becomes dormant. In February, Velpar (a residual herbicide) at 0.33 pounds per acre and Gramoxone (a contact herbicide) at 1.5 pints per acre are tank mixed and applied to control winter weeds. Activator 90 (non-ionic adjuvant) is added to the mix. Summer grass control may be needed in some areas, but is not included in this study.

**Insects.** Several insect species attack alfalfa, but alfalfa weevil (*Hypera postica*) is the only pest assumed to cause economic damage. Weevils don't reach economic thresholds every year, but over the stand life, controls will be applied an average of every three years. In this study, weevils are treated every third year in April by a certified applicator with the insecticide Baythroid at two fluid ounces per acre. One-third of the actual cost is charged to the budget each year.

**Vertebrates.** Pocket gophers (*Thomomys spp.*), ground squirrels (*Spermophilus spp.*), and meadow mice (*Microtus spp.*) cause problems in alfalfa stands. Poison bait purchased from the local Agricultural Commissioner is used to control these pests. In this study, vertebrate pest treatment occurs in March and April. The cost for rodent bait in the study is an average of the separate costs of gopher, squirrel and mouse baits.

**Harvest.** Harvest equipment owned by the farm consists of a self-propelled swather, center-delivery rake, a self-propelled balewagon, and two engine driven pull-type balers. Alfalfa is cut with the self-propelled swather, cured or dried in windrows for several days and then turned with a center-delivery rake. When dried to the correct moisture, the hay is baled with the pull-type baler. The balewagon picks up the bales and moves them from the field to stacks. The costs for these operations are shown in Tables 5 and 7 and the equipment is listed in Tables 8 and 9. If a grower has their hay custom harvested, replace the harvest costs used in this study with the custom harvest charges.

**Yield.** The crop is assumed to yield 5.0 tons of hay per acre over three cuttings per year. Annual yields in the higher elevations of the region range from 4 to 7 tons per acre.

**Returns.** Based on current markets for premium to rain damaged hay, an estimated price of \$100 per ton of hay is used to calculate returns. Returns will vary during the season, depending upon the market. In some areas in the region, additional revenue is generated by charging a per head fee for grazing livestock on alfalfa that is going into dormancy. Table 10 shows a range of yields over a range of returns.

**Labor.** Hourly wages for workers are \$6.25 per hour for labor and \$10.00 per hour for machine operators. Adding 34% for the employers share of federal and state payroll taxes, insurance, and other possible benefits gives the labor rates shown of \$8.38 for non-machine labor and \$13.40 per hour for machine labor. The labor hours for operations involving machinery are 10% higher than the machine hours to account for extra labor involved in equipment set-up, moving, maintenance and repair.

### **Overhead and Capital Recovery Costs**

Assumptions in this section refer to the cash overhead and capital recovery sections in Tables 1 to 9. One-half of the annual overhead costs in the establishment year (Table 1) are allocated to the previous crop.

**Cash Overhead.** Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm, not to a particular operation. These costs include property taxes, interest, office expense, liability and property insurance, and investment repairs (buildings and irrigation equipment). Employee benefits, payroll taxes and workman's compensation insurance are included in labor costs and not under cash overhead.

*Property Taxes.* Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

*Interest On Operating Capital.* Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 10.51% per year. Postharvest operations are discounted back to the last harvest month at the same interest rate so that costs are adjusted to the same position in time.

*Insurance.* Insurance for farm investments varies depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.666% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$767 for the entire farm or \$1.53 per acre.

*Office Expense.* Office and business expenses for 500 acres are estimated at \$12,395 annually or \$25 per producing acre. These expenses include office supplies, telephones, accounting, legal fees, office and shop utilities, and miscellaneous overhead expenses.

*Investment Repairs.* Annual repairs on investments or capital recovery items that require maintenance are calculated as two percent of the purchase price.

**Capital Recovery Costs.** Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Annual ownership costs for equipment and other investments are shown in Tables 3 and 8.

*Capital Recovery Costs.* Capital recovery cost is the annual depreciation and interest costs for a capital investment and is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). The capital recovery costs are equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is  $((\text{Purchase Price} - \text{Salvage Value}) \times \text{Capital Recovery Factor}) + (\text{Salvage Value} \times \text{Interest Rate})$ .

*Salvage Value.* Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE by the annual hours of use in the operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in Tables 3 and 8.

*Capital Recovery Factor.* Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate and equipment life.

*Interest Rate.* The interest rate of 6.70% used to calculate capital recovery cost is the USDA-ERS's ten-year average of California's agricultural sector long-run rate of return to production assets from current income. It is used to reflect the long-term realized rate of return to these specialized resources that can only be used effectively in the agricultural sector. In other words, the next best alternative use for these resources is in another agricultural enterprise.

**Irrigation System.** Water cost varies across the Intermountain Region depending on well characteristics or irrigation district. The farm's wells are included in the land purchase price. The farm has two wells and each one is one hundred feet deep. Each well has a 75 horsepower electric pump and a 50 horsepower booster pump to cover two pivots. The center pivot sprinkler system was purchased new by the grower. The sprinkler system consists of four one-quarter mile center pivots. Each pivot covers 125 acres. Costs shown in the tables include two 75-horsepower electric pumps, two 50-horsepower electric booster pumps and four one-quarter mile center pivots.

**Land.** The price of the land includes developed wells. Land suitable for alfalfa production can vary widely in value across the region. Prices range from \$700 per acre to \$2,500. The land in this study is owned by the grower and cost \$1,000 per acre.

**Establishment Costs.** Costs to establish the alfalfa stand are used to determine capital recovery expenses, depreciation, and interest on investment, during the production years. The establishment cost is the sum of cash costs for land preparation, planting, production expenses, and cash overhead for establishing the alfalfa. The Total Cash Cost in the first year shown in Table 1 represents the establishment cost per acre. For this study, the cost is \$214 per acre or \$85,600 for the entire stand. The alfalfa stand establishment cost is amortized over the 6-year stand life.

**Equipment.** Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication. The fuel, lube, and repair cost per acre for each operation in Table 2 is determined by multiplying the total hourly operating cost in Table 6 for each piece of equipment used for the selected operation by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel and down time.

*Repairs, Fuel and Lube.* Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the American Society of Agricultural Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO horsepower, and fuel type. The on-farm delivery fuel price is \$1.26 per gallon for diesel and \$1.51 per gallon for gasoline.

**Risk.** The risks associated with producing and marketing alfalfa hay should not be minimized. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks, which affect the profitability and economic viability of alfalfa hay production.

**Table Values.** Due to rounding, the totals may be slightly different from the sum of the components.

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For information concerning the above mentioned University of California publications contact UC DANR Communications Services at 1-800-994-8849, online at <http://danrcs.ucdavis.edu> or your local county UC Cooperative Extension office.

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**Table 1. COSTS PER ACRE to ESTABLISH ALFALFA**  
 INTERMOUNTAIN REGION - Siskiyou County 2001

| Operation                                   | Operation<br>Time<br>(Hrs/A) | Cash and Labor Cost per acre |                         |                                       |                 |            | Total<br>Cost | Your<br>Cost |
|---|------------------------------|------------------------------|-------------------------|---------------------------------------|-----------------|------------|---------------|--------------|
|   |                              | Labor<br>Cost                | Fuel, Lube<br>& Repairs | Material<br>Cost                      | Custom/<br>Rent |            |               |              |
| <b>Cultural:</b>                            |                              |                              |                         |                                       |                 |            |               |              |
| Subsoil/Rip                                 | 0.39                         | 6                            | 7                       | 0                                     | 0               | 14         |               |              |
| Fertilize: Sulfur 1X/3yr                    | 0.00                         | 0                            | 0                       | 5                                     | 2               | 7          |               |              |
| Fertilize :11-52-0 1X/2yr                   | 0.00                         | 0                            | 0                       | 13                                    | 3               | 16         |               |              |
| Disc Stubble 2X                             | 0.14                         | 2                            | 3                       | 0                                     | 0               | 5          |               |              |
| Level Field with Float                      | 0.15                         | 2                            | 1                       | 0                                     | 0               | 4          |               |              |
| Roll Field                                  | 0.44                         | 7                            | 4                       | 0                                     | 0               | 11         |               |              |
| Plant – 20 lb/acre: August                  | 0.00                         | 0                            | 0                       | 52                                    | 6               | 58         |               |              |
| Irrigate                                    | 0.00                         | 0                            | 0                       | 12                                    | 0               | 12         |               |              |
| Weeds- Post-Emergent: Pursuit               | 0.00                         | 0                            | 0                       | 29                                    | 7               | 35         |               |              |
| Pickup Truck Use                            | 0.36                         | 6                            | 2                       | 0                                     | 0               | 7          |               |              |
| <b>TOTAL CULTURAL COSTS</b>                 | <b>1.48</b>                  | <b>24</b>                    | <b>17</b>               | <b>111</b>                            | <b>17</b>       | <b>168</b> |               |              |
| Interest on operating capital @ 10.51%      |                              |                              |                         |                                       |                 | 3          |               |              |
| <b>TOTAL OPERATING COSTS/ACRE</b>           |                              | <b>24</b>                    | <b>17</b>               | <b>111</b>                            | <b>17</b>       | <b>171</b> |               |              |
| <b>Cash Overhead:</b>                       |                              |                              |                         |                                       |                 |            |               |              |
| Office Expense                              |                              |                              |                         |                                       |                 | 14         |               |              |
| Liability Insurance                         |                              |                              |                         |                                       |                 | 1          |               |              |
| Property Taxes                              |                              |                              |                         |                                       |                 | 10         |               |              |
| Property Insurance                          |                              |                              |                         |                                       |                 | 3          |               |              |
| Investment Repairs                          |                              |                              |                         |                                       |                 | 15         |               |              |
| <b>TOTAL CASH OVERHEAD COSTS</b>            |                              |                              |                         |                                       |                 | <b>43</b>  |               |              |
| <b>TOTAL CASH COSTS/ACRE</b>                |                              |                              |                         |                                       |                 | <b>214</b> |               |              |
| <b>Non-cash Overhead:</b>                   |                              |                              |                         |                                       |                 |            |               |              |
|   |                              | Per producing<br>acre*       |                         | -- Annual Cost --<br>Capital Recovery |                 |            |               |              |
| Land  |                              | 559                          |                         | 37                                    |                 | 37         |               |              |
| Storage Building                            |                              | 11                           |                         | 1                                     |                 | 1          |               |              |
| Shop Building                               |                              | 51                           |                         | 5                                     |                 | 5          |               |              |
| Hay Barns 2 @ 1000 tons                     |                              | 122                          |                         | 11                                    |                 | 11         |               |              |
| Shop Tools                                  |                              | 13                           |                         | 1                                     |                 | 1          |               |              |
| Fuel Tanks/Above Ground                     |                              | 7                            |                         | 1                                     |                 | 1          |               |              |
| Irrigation System-Center Pivot<br>Equipment |                              | 525                          |                         | 47                                    |                 | 47         |               |              |
|   |                              | 143                          |                         | 16                                    |                 | 16         |               |              |
| <b>TOTAL NON-CASH OVERHEAD COSTS</b>        |                              | <b>1,431</b>                 |                         | <b>119</b>                            |                 | <b>119</b> |               |              |
| <b>TOTAL COSTS/ACRE</b>                     |                              |                              |                         |                                       |                 | <b>333</b> |               |              |

\*includes allocation to previous crop acres

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**Table 2. MATERIAL and INPUT COSTS to ESTABLISH ALFALFA**  
 INTERMOUNTAIN REGION - Siskiyou County 2001

| OPERATING COSTS                        | Amt./acre | Unit | \$/unit | \$/acre | Your cost  |
|--|-----------|------|---------|---------|------------|
| <b>Fertilizer:</b>                     |           |      |         |         |            |
| Sulfur - Elemental                     | 83.33     | lb   | 0.06    | 5       |            |
| 11-52-0                                | 100.00    | lb   | 0.13    | 13      |            |
| <b>Herbicide:</b>                      |           |      |         |         |            |
| Pursuit DG                             | 1.44      | oz   | 13.82   | 20      |            |
| <b>Adjuvant:</b>                       |           |      |         |         |            |
| Herbimax                               | 32        | floz | 0.27    | 9       |            |
| <b>Seed:</b>                           |           |      |         |         |            |
| Seed - Alfalfa                         | 20.00     | lb   | 2.60    | 52      |            |
| <b>Water:</b>                          |           |      |         |         |            |
| Water                                  | 6.00      | acin | 2.08    | 12      |            |
| <b>Custom:</b>                         |           |      |         |         |            |
| Spread – Fertilizer 1X/2yr + 1X/3yr    | 0.83      | acre | 5.50    | 5       |            |
| Plant Alfalfa Seed                     | 1.00      | acre | 5.50    | 6       |            |
| Pesticide Application                  | 1.00      | acre | 6.50    | 7       |            |
| Labor (machine)                        | 1.78      | hrs  | 13.40   | 24      |            |
| Labor (non-machine)                    | 0.00      | hrs  | 8.38    | 0       |            |
| Fuel - Gas                             | 0.71      | gal  | 1.51    | 1       |            |
| Fuel - Diesel                          | 6.38      | gal  | 1.26    | 8       |            |
| Lube                                   |           |      |         | 1       |            |
| Machinery repair                       |           |      |         | 6       |            |
| Interest on operating capital @ 10.51% |           |      |         | 3       |            |
| <b>TOTAL OPERATING COSTS/ACRE</b>      |           |      |         |         | <b>171</b> |

UC COOPERATIVE EXTENSION  
**Table 3. WHOLE FARM ANNUAL EQUIPMENT COSTS for ESTABLISHMENT YEAR**  
 INTERMOUNTAIN REGION - Siskiyou County 2001

**ANNUAL EQUIPMENT COSTS**

| Yr                | Description           | Price          | Yrs Life | Salvage Value | Capital Recovery | Cash Overhead |              | Total         |
|-------------------|-----------------------|----------------|----------|---------------|------------------|---------------|--------------|---------------|
|                   |                       |                |          |               |                  | Insur-ance    | Taxes        |               |
| 01                | 130 HP 2WD Tractor    | 81,939         | 15       | 15,952        | 8,177            | 326           | 489          | 8,993         |
| 01                | 62 HP 2WD Tractor     | 32,060         | 15       | 6,242         | 3,199            | 128           | 192          | 3,518         |
| 01                | Cultipacker - 16'     | 15,000         | 15       | 1,440         | 1,557            | 55            | 82           | 1,694         |
| 01                | Disc - Tandem 21'     | 19,595         | 15       | 1,881         | 2,034            | 72            | 107          | 2,213         |
| 01                | Float - 16'           | 12,944         | 15       | 1,243         | 1,344            | 47            | 71           | 1,462         |
| 01                | Pickup - 1/2 Ton      | 20,000         | 5        | 8,964         | 3,271            | 96            | 145          | 3,512         |
| 01                | Subsoiler 5 Shank 10' | 14,800         | 10       | 2,617         | 1,886            | 58            | 87           | 2,031         |
| <b>TOTAL</b>      |                       | <b>196,338</b> |          | <b>38,339</b> | <b>21,468</b>    | <b>781</b>    | <b>1,173</b> | <b>23,423</b> |
| 60% of New Cost * |                       | 117,803        |          | 23,003        | 12,881           | 469           | 704          | 14,054        |

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**Table 4. HOURLY EQUIPMENT COST FOR ESTABLISHMENT YEAR**  
 INTERMOUNTAIN REGION – Siskiyou County 2001

**COSTS PER HOUR**

| Yr | Description           | Actual Hours Used | Cash Overhead    |            |       |         | Operating   |             | Total Costs/Hr. |
|----|-----------------------|-------------------|------------------|------------|-------|---------|-------------|-------------|-----------------|
|    |                       |                   | Capital Recovery | Insur-ance | Taxes | Repairs | Fuel & Lube | Total Oper. |                 |
| 01 | 130 HP 2WD Tractor    | 522.30            | 9.39             | 0.37       | 0.56  | 3.47    | 10.93       | 14.40       | 24.73           |
| 01 | 62 HP 2WD Tractor     | 590.40            | 3.25             | 0.13       | 0.19  | 1.36    | 4.41        | 5.77        | 9.35            |
| 01 | Cultipacker - 16'     | 222.70            | 4.19             | 0.15       | 0.22  | 1.66    | 0.00        | 1.66        | 6.22            |
| 01 | Disc - Tandem 21'     | 126.00            | 9.69             | 0.34       | 0.51  | 3.00    | 0.00        | 3.00        | 13.54           |
| 01 | Float - 16'           | 136.80            | 5.89             | 0.21       | 0.31  | 1.99    | 0.00        | 1.99        | 8.40            |
| 01 | Pickup - 1/2 Ton      | 320.50            | 6.12             | 0.18       | 0.27  | 1.48    | 3.47        | 4.95        | 11.53           |
| 01 | Subsoiler 5 Shank 10' | 194.20            | 5.83             | 0.18       | 0.27  | 3.32    | 0.00        | 3.32        | 9.60            |

UC COOPERATIVE EXTENSION  
**Table 5. COSTS PER ACRE to PRODUCE ALFALFA HAY**  
 INTERMOUNTAIN REGION – Siskiyou County 2001

| Operation                              | Operation    | Cash and Labor Cost per acre |                      |                   |             |            | Total Cost | Your Cost |
|--|--------------|------------------------------|----------------------|-------------------|-------------|------------|------------|-----------|
|  | Time (Hrs/A) | Labor Cost                   | Fuel, Lube & Repairs | Material Cost     | Custom/Rent |            |            |           |
| <b>Cultural:</b>                       |              |                              |                      |                   |             |            |            |           |
| Rodent Bait - 25% acres                | 0.50         | 4                            | 0                    | 1                 | 0           | 5          |            |           |
| Insects-Weevil 1X/2yr: Baythroid       | 0.00         | 0                            | 0                    | 4                 | 2           | 6          |            |           |
| Irrigation                             | 0.00         | 0                            | 0                    | 58                | 0           | 58         |            |           |
| Fertilize - 1X/2 yrs: 11-52-00         | 0.00         | 0                            | 0                    | 13                | 3           | 16         |            |           |
| Fertilize - 1X/3 yrs: Sulfur           | 0.00         | 0                            | 0                    | 5                 | 2           | 7          |            |           |
| Weeds - Winter: Velpar/Gramoxone       | 0.00         | 0                            | 0                    | 22                | 7           | 29         |            |           |
| Pickup Truck Use                       | 0.57         | 9                            | 3                    | 0                 | 0           | 12         |            |           |
| <b>TOTAL CULTURAL COSTS</b>            | <b>1.07</b>  | <b>13</b>                    | <b>3</b>             | <b>104</b>        | <b>13</b>   | <b>133</b> |            |           |
| <b>Harvest:</b>                        |              |                              |                      |                   |             |            |            |           |
| Swath Hay - 3X                         | 0.55         | 9                            | 3                    | 0                 | 0           | 11         |            |           |
| Rake Hay - 3X                          | 0.22         | 4                            | 2                    | 0                 | 0           | 6          |            |           |
| Bale Hay - 3X                          | 0.64         | 10                           | 11                   | 10                | 0           | 32         |            |           |
| Roadside Hay - 3X                      | 0.47         | 8                            | 2                    | 0                 | 0           | 9          |            |           |
| <b>TOTAL HARVEST COSTS</b>             | <b>1.88</b>  | <b>30</b>                    | <b>17</b>            | <b>10</b>         | <b>0</b>    | <b>58</b>  |            |           |
| Interest on operating capital @ 10.51% |              |                              |                      |                   |             |            | 8          |           |
| <b>TOTAL OPERATING COSTS/ACRE</b>      |              | <b>44</b>                    | <b>20</b>            | <b>114</b>        | <b>13</b>   | <b>199</b> |            |           |
| <b>Total Operating Costs/Ton</b>       |              |                              |                      |                   |             |            | <b>40</b>  |           |
| <b>CASH OVERHEAD:</b>                  |              |                              |                      |                   |             |            |            |           |
| Office Expense                         |              |                              |                      |                   |             |            | 25         |           |
| Liability Insurance                    |              |                              |                      |                   |             |            | 2          |           |
| Property Taxes                         |              |                              |                      |                   |             |            | 18         |           |
| Property Insurance                     |              |                              |                      |                   |             |            | 5          |           |
| Investment Repairs                     |              |                              |                      |                   |             |            | 16         |           |
| <b>TOTAL CASH OVERHEAD COSTS</b>       |              |                              |                      |                   |             |            | <b>65</b>  |           |
| <b>TOTAL CASH COSTS/ACRE</b>           |              |                              |                      |                   |             |            | <b>264</b> |           |
| <b>Total Cash Costs/Ton</b>            |              |                              |                      |                   |             |            | <b>53</b>  |           |
| <b>NON-CASH OVERHEAD:</b>              |              |                              |                      |                   |             |            |            |           |
| Investment                             |              | Per producing acre*          |                      | -- Annual Cost -- |             |            |            |           |
| Land                                   |              | 1,010                        |                      | Capital Recovery  |             |            | 68         |           |
| Shop Building                          |              | 92                           |                      | 8                 |             |            | 8          |           |
| Storage Building                       |              | 19                           |                      | 2                 |             |            | 2          |           |
| Shop Tools                             |              | 24                           |                      | 2                 |             |            | 2          |           |
| Hay Barns 2 @ 1000 tons                |              | 122                          |                      | 11                |             |            | 11         |           |
| Fuel Tanks/Above Ground                |              | 13                           |                      | 1                 |             |            | 1          |           |
| Irrigation System-Center Pivot         |              | 525                          |                      | 47                |             |            | 47         |           |
| Alfalfa Establishment                  |              | 214                          |                      | 44                |             |            | 44         |           |
| Equipment                              |              | 481                          |                      | 61                |             |            | 61         |           |
| <b>TOTAL NON-CASH OVERHEAD COSTS</b>   |              | <b>2,501</b>                 |                      | <b>245</b>        |             |            | <b>245</b> |           |
| <b>TOTAL COSTS/ACRE</b>                |              |                              |                      |                   |             |            | <b>509</b> |           |
| <b>Total Costs/Ton</b>                 |              |                              |                      |                   |             |            | <b>102</b> |           |

\*495 acres

UC COOPERATIVE EXTENSION  
**Table 6. COSTS AND RETURNS PER ACRE to PRODUCE ALFALFA HAY**  
 INTERMOUNTAIN REGION – Siskiyou County - 2001

|   | *Quantity/<br>Acre | Unit | Price or<br>Cost/Unit | Value or<br>Cost/Acre | Your<br>Cost |
|---|--------------------|------|-----------------------|-----------------------|--------------|
| <b>GROSS RETURNS</b>                              |                    |      |                       |                       |              |
| Hay   | 5.00               | ton  | 100.00                | 500                   |              |
| <b>OPERATING COSTS</b>                            |                    |      |                       |                       |              |
| <b>Rodenticide:</b>                               |                    |      |                       |                       |              |
| Rodent Bait: Poison Grain 25% acres               | 0.50               | lb   | 1.75                  | 1                     |              |
| <b>Insecticide:</b>                               |                    |      |                       |                       |              |
| Baythroid 2, 1X/3 yrs                             | 0.67               | floz | 6.45                  | 4                     |              |
| <b>Herbicide:</b>                                 |                    |      |                       |                       |              |
| Velpar DF   | 0.33               | lb   | 33.33                 | 11                    |              |
| Gramoxone Extra                                   | 1.50               | pint | 6.31                  | 9                     |              |
| <b>Adjuvant:</b>                                  |                    |      |                       |                       |              |
| Activator 90                                      | 6.40               | floz | 0.27                  | 2                     |              |
| <b>Fertilizer:</b>                                |                    |      |                       |                       |              |
| 11-52-0 1X/2 yrs                                  | 100.00             | lb   | 0.13                  | 13                    |              |
| Sulfur – Elemental 1X/3 yrs                       | 83.33              | lb   | 0.06                  | 5                     |              |
| <b>Custom:</b>                                    |                    |      |                       |                       |              |
| Pesticide Application 1X/3 yrs                    | 0.33               | acre | 6.50                  | 2                     |              |
| Herbicide Application                             | 1.00               | acre | 6.50                  | 7                     |              |
| Spread Fertilizer 1X/2 yrs + 1X/3 yrs             | 0.83               | acre | 5.50                  | 5                     |              |
| <b>Water:</b>                                     |                    |      |                       |                       |              |
| Water   | 28.00              | acin | 2.08                  | 58                    |              |
| <b>Harvest Aid:</b>                               |                    |      |                       |                       |              |
| Baling Twine                                      | 5.00               | ton  | 2.00                  | 10                    |              |
| Labor (machine)                                   | 2.94               | hrs  | 13.40                 | 39                    |              |
| Labor (non-machine)                               | 0.50               | hrs  | 8.38                  | 4                     |              |
| Fuel - Gas  | 1.14               | gal  | 1.51                  | 2                     |              |
| Fuel - Diesel                                     | 2.88               | gal  | 1.26                  | 4                     |              |
| Lube  |                    |      |                       | 1                     |              |
| Machinery repair                                  |                    |      |                       | 14                    |              |
| Interest on operating capital @ 10.51%            |                    |      |                       | 8                     |              |
| <b>TOTAL OPERATING COSTS/ACRE</b>                 |                    |      |                       | 199                   |              |
| <b>NET RETURNS ABOVE OPERATING COSTS</b>          |                    |      |                       |                       | 301          |
| <b>CASH OVERHEAD COSTS:</b>                       |                    |      |                       |                       |              |
| Office Expense                                    |                    |      |                       | 25                    |              |
| Liability Insurance                               |                    |      |                       | 2                     |              |
| Property Taxes                                    |                    |      |                       | 18                    |              |
| Property Insurance                                |                    |      |                       | 5                     |              |
| Investment Repairs                                |                    |      |                       | 16                    |              |
| <b>TOTAL CASH OVERHEAD COSTS/ACRE</b>             |                    |      |                       | 65                    |              |
| <b>TOTAL CASH COSTS/ACRE</b>                      |                    |      |                       |                       | 264          |
| <b>NON-CASH OVERHEAD COSTS (Capital Recovery)</b> |                    |      |                       |                       |              |
| Land  |                    |      |                       | 68                    |              |
| Shop Building                                     |                    |      |                       | 8                     |              |
| Storage Building                                  |                    |      |                       | 2                     |              |
| Shop Tools  |                    |      |                       | 2                     |              |
| Hay Barns-2 @ 1000 ton                            |                    |      |                       | 11                    |              |
| Fuel Tanks/Above Ground                           |                    |      |                       | 1                     |              |
| Irrigation System Center Pivot                    |                    |      |                       | 47                    |              |
| Alfalfa Establishment                             |                    |      |                       | 44                    |              |
| Equipment   |                    |      |                       | 61                    |              |
| <b>TOTAL NON-CASH OVERHEAD COSTS/ACRE</b>         |                    |      |                       | 245                   |              |
| <b>TOTAL COSTS/ACRE</b>                           |                    |      |                       |                       | 509          |
| <b>NET RETURNS ABOVE TOTAL COSTS</b>              |                    |      |                       |                       | -9           |

\*Quantity per acre over 400 acres

UC COOPERATIVE EXTENSION  
**Table 7. MONTHLY CASH COSTS PER ACRE to PRODUCE ALFALFA HAY**  
 INTERMOUNTAIN REGION – Siskiyou County 2001

| Beginning JAN 01                    | JAN       | FEB       | MAR       | APR       | MAY       | JUN       | JUL       | AUG       | SEP       | OCT      | NOV      | DEC      | TOTAL      |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|------------|
| Ending DEC 01                       | 01        | 01        | 01        | 01        | 01        | 01        | 01        | 01        | 01        | 01       | 01       | 01       |            |
| <b>Cultural:</b>                    |           |           |           |           |           |           |           |           |           |          |          |          |            |
| Rodent Bait - 25% acres             |           |           | 5         |           |           |           |           |           |           |          |          |          | 5          |
| Insects-Weevil (1X/3 yrs) Baythroid |           |           |           | 6         |           |           |           |           |           |          |          |          | 6          |
| Irrigation                          |           |           |           | 5         | 11        | 15        | 12        | 10        | 4         |          |          |          | 58         |
| Fertilize - (1X/2 yrs) 11-52-00     |           |           | 16        |           |           |           |           |           |           |          |          |          | 16         |
| Fertilize - (1X/3 yrs) Sulfur       |           |           | 7         |           |           |           |           |           |           |          |          |          | 7          |
| Weeds – Winter: Velpar/Gramoxone    |           | 29        |           |           |           |           |           |           |           |          |          |          | 29         |
| Pickup Truck Use                    | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1        | 1        | 1        | 12         |
| <b>TOTAL CULTURAL COSTS</b>         | <b>1</b>  | <b>30</b> | <b>29</b> | <b>13</b> | <b>12</b> | <b>16</b> | <b>13</b> | <b>11</b> | <b>5</b>  | <b>1</b> | <b>1</b> | <b>1</b> | <b>133</b> |
| <b>Harvest:</b>                     |           |           |           |           |           |           |           |           |           |          |          |          |            |
| Swath Hay - 3X                      |           |           |           |           | 4         |           | 4         |           | 4         |          |          |          | 11         |
| Rake Hay - 3X                       |           |           |           |           | 2         |           | 2         |           | 2         |          |          |          | 6          |
| Bale Hay - 3X                       |           |           |           |           | 11        |           | 11        |           | 10        |          |          |          | 32         |
| Roadside Hay - 3X                   |           |           |           |           | 3         |           | 3         |           | 3         |          |          |          | 9          |
| <b>TOTAL HARVEST COSTS</b>          |           |           |           |           | <b>19</b> |           | <b>19</b> |           | <b>19</b> |          |          |          | <b>58</b>  |
| Interest on operating capital       | 0         | 0         | 1         | 1         | 1         | 1         | 1         | 1         | 2         | 0        | 0        | 0        | 8          |
| <b>TOTAL OPERATING COSTS/ACRE</b>   | <b>1</b>  | <b>30</b> | <b>29</b> | <b>13</b> | <b>33</b> | <b>17</b> | <b>34</b> | <b>13</b> | <b>26</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>199</b> |
| <b>OVERHEAD:</b>                    |           |           |           |           |           |           |           |           |           |          |          |          |            |
| Office Expense                      | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2        | 2        | 2        | 25         |
| Liability Insurance                 | 2         |           |           |           |           |           |           |           |           |          |          |          | 2          |
| Property Taxes                      | 9         |           |           |           |           |           | 9         |           |           |          |          |          | 18         |
| Property Insurance                  | 5         |           |           |           |           |           |           |           |           |          |          |          | 5          |
| Investment Repairs                  | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1        | 1        | 1        | 16         |
| <b>TOTAL CASH OVERHEAD COSTS</b>    | <b>19</b> | <b>3</b>  | <b>3</b>  | <b>3</b>  | <b>3</b>  | <b>3</b>  | <b>13</b> | <b>3</b>  | <b>3</b>  | <b>3</b> | <b>3</b> | <b>3</b> | <b>65</b>  |
| <b>TOTAL CASH COSTS/ACRE</b>        | <b>20</b> | <b>33</b> | <b>33</b> | <b>17</b> | <b>36</b> | <b>20</b> | <b>47</b> | <b>16</b> | <b>29</b> | <b>4</b> | <b>4</b> | <b>4</b> | <b>264</b> |

UC COOPERATIVE EXTENSION  
**Table 8. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT,  
and BUSINESS OVERHEAD COSTS**  
INTERMOUNTAIN REGION – Siskiyou County 2001

**ANNUAL EQUIPMENT COSTS**

| Yr                       | Description                | Price          | Yrs<br>Life | Salvage<br>Value | Capital<br>Recovery | Cash Overhead  |              |  | Total         |
|--------------------------|----------------------------|----------------|-------------|------------------|---------------------|----------------|--------------|--|---------------|
|                          |                            |                |             |                  |                     | Insur-<br>ance | Taxes        |  |               |
| 01                       | 62 HP 2WD Tractor #1       | 32,060         | 15          | 6,242            | 3,199               | 128            | 192          |  | 3,518         |
| 01                       | 62HP 2WD Tractor #2        | 32,060         | 15          | 6,242            | 3,199               | 128            | 192          |  | 3,518         |
| 01                       | Baler – Pull w/Engine #1   | 44,184         | 10          | 4,418            | 5,880               | 162            | 243          |  | 6,284         |
| 01                       | Baler – Pull w/Engine #2   | 44,184         | 10          | 4,418            | 5,880               | 162            | 243          |  | 6,284         |
| 01                       | Balewagon - Self Propelled | 102,350        | 10          | 10,235           | 13,620              | 375            | 563          |  | 14,557        |
| 01                       | Pickup - 1/2 Ton           | 20,000         | 5           | 8,964            | 3,271               | 96             | 145          |  | 3,512         |
| 01                       | Rake - 20' Center Delivery | 18,419         | 15          | 1,842            | 1,909               | 67             | 101          |  | 2,078         |
| 01                       | Swather - 14'              | 47,150         | 10          | 8,338            | 6,008               | 185            | 277          |  | 6,470         |
| <b>TOTAL</b>             |                            | <b>340,407</b> |             | <b>50,669</b>    | <b>42,965</b>       | <b>1,302</b>   | <b>1,956</b> |  | <b>46,223</b> |
| <b>60% of New Cost *</b> |                            | <b>204,244</b> |             | <b>30,419</b>    | <b>25,779</b>       | <b>781</b>     | <b>1,173</b> |  | <b>27,734</b> |

\*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      |                |
| Alfalfa Establishment          | 85,600         | 6           |                  | 17,792              | 0              | 428          | 0            | 18,221         |
| Fuel Tanks/Above Ground        | 6,514          | 20          |                  | 601                 | 22             | 33           | 130          | 785            |
| Hay Barns 2 @ 1000 tons        | 48,900         | 20          |                  | 4,509               | 163            | 244          | 978          | 5,894          |
| Land                           | 500,000        | 40          | 500,000          | 33,500              | 0              | 5,000        | 0            | 38,500         |
| Shop Building                  | 45,619         | 20          |                  | 4,206               | 152            | 228          | 912          | 5,498          |
| Shop Tools                     | 11,705         | 20          |                  | 1,079               | 39             | 59           | 234          | 1,411          |
| Storage Building               | 9,650          | 20          |                  | 890                 | 32             | 48           | 193          | 1,163          |
| Irrigation System Center Pivot | 260,000        | 20          | 26,000           | 23,318              | 952            | 1,430        | 5,200        | 30,900         |
| <b>TOTAL INVESTMENT</b>        | <b>967,988</b> |             | <b>526,000</b>   | <b>85,895</b>       | <b>1,360</b>   | <b>7,470</b> | <b>7,647</b> | <b>102,371</b> |

**ANNUAL BUSINESS OVERHEAD COSTS**

| Description         | Units/<br>Farm | Unit | Price/<br>Unit | Total<br>Cost |
|---------------------|----------------|------|----------------|---------------|
| Liability Insurance | 500            | acre | 1.53           | 765           |
| Office Expense      | 500            | acre | 25.00          | 12,375        |

UC COOPERATIVE EXTENSION  
**Table 9. HOURLY EQUIPMENT COSTS**  
INTERMOUNTAIN REGION – Siskiyou County 2001

| Yr | Description                | Actual<br>Hours<br>Used | COSTS PER HOUR      |                |       |         |                |                | Total<br>Costs/Hr |
|----|----------------------------|-------------------------|---------------------|----------------|-------|---------|----------------|----------------|-------------------|
|    |                            |                         | Capital<br>Recovery | Cash Overhead  |       |         | Operating      |                |                   |
|    |                            |                         |                     | Insur-<br>ance | Taxes | Repairs | Fuel &<br>Lube | Total<br>Oper. |                   |
| 01 | 62HP 2WD Tractor #1        | 297.60                  | 6.45                | 0.26           | 0.39  | 1.36    | 4.41           | 5.77           | 12.87             |
| 01 | 62HP 2WD Tractor #2        | 174.90                  | 10.97               | 0.44           | 0.66  | 1.36    | 4.41           | 5.77           | 17.84             |
| 01 | Baler – Pull w/Engine #1   | 127.20                  | 27.73               | 0.76           | 1.15  | 11.53   | 0.00           | 11.53          | 41.18             |
| 01 | Baler – Pull w/Engine #2   | 127.20                  | 27.73               | 0.76           | 1.15  | 11.53   | 0.00           | 11.53          | 41.18             |
| 01 | Balewagon – Self Propelled | 187.20                  | 43.65               | 1.20           | 1.80  | 3.29    | 0.00           | 3.29           | 49.95             |
| 01 | Pickup - 1/2 Ton           | 328.00                  | 5.98                | 0.18           | 0.26  | 1.48    | 3.47           | 4.95           | 11.38             |
| 01 | Rake - 20' Center Delivery | 88.80                   | 12.90               | 0.46           | 0.68  | 2.48    | 0.00           | 2.48           | 16.52             |
| 01 | Swather - 14'              | 220.80                  | 16.33               | 0.50           | 0.75  | 4.55    | 0.00           | 4.55           | 22.14             |

U.C. COOPERATIVE EXTENSION  
**Table 10. RANGING ANALYSIS**  
 INTERMOUNTAIN REGION – Siskiyou County 2001

COSTS PER ACRE AT **VARYING YIELD** TO PRODUCE ALFALFA HAY

|                                   | YIELD (ton/acre) |            |            |            |            |            |            |
|-----------------------------------|------------------|------------|------------|------------|------------|------------|------------|
|                                   | 4.00             | 4.50       | 5.00       | 5.50       | 6.00       | 6.50       | 7.00       |
| <b>OPERATING COSTS:</b>           |                  |            |            |            |            |            |            |
| Cultural Cost                     | 133              | 133        | 133        | 133        | 133        | 133        | 133        |
| Harvest Cost                      | 47               | 52         | 58         | 63         | 68         | 74         | 79         |
| Interest on operating capital     | 7                | 8          | 8          | 8          | 8          | 8          | 8          |
| <b>TOTAL OPERATING COSTS/acre</b> | <b>188</b>       | <b>193</b> | <b>199</b> | <b>204</b> | <b>210</b> | <b>215</b> | <b>221</b> |
| <b>Total Operating Cost/ton</b>   | <b>47</b>        | <b>43</b>  | <b>40</b>  | <b>37</b>  | <b>35</b>  | <b>33</b>  | <b>32</b>  |
| <b>CASH OVERHEAD COSTS</b>        | <b>65</b>        | <b>65</b>  | <b>65</b>  | <b>65</b>  | <b>65</b>  | <b>65</b>  | <b>65</b>  |
| <b>TOTAL CASH COSTS/acre</b>      | <b>253</b>       | <b>258</b> | <b>264</b> | <b>269</b> | <b>275</b> | <b>280</b> | <b>286</b> |
| <b>Total Cash Costs/ton</b>       | <b>63</b>        | <b>57</b>  | <b>53</b>  | <b>49</b>  | <b>46</b>  | <b>43</b>  | <b>41</b>  |
| <b>NON-CASH OVERHEAD COSTS</b>    | <b>245</b>       | <b>245</b> | <b>245</b> | <b>245</b> | <b>245</b> | <b>246</b> | <b>246</b> |
| <b>TOTAL COSTS/acre</b>           | <b>497</b>       | <b>503</b> | <b>509</b> | <b>515</b> | <b>520</b> | <b>526</b> | <b>532</b> |
| <b>Total Costs/ton</b>            | <b>124</b>       | <b>112</b> | <b>102</b> | <b>94</b>  | <b>87</b>  | <b>81</b>  | <b>76</b>  |

NET RETURNS PER ACRE **ABOVE OPERATING COSTS** FOR ALFALFA HAY

| PRICE<br>\$/ton | YIELD (ton/acre) |      |      |      |      |      |      |
|-----------------|------------------|------|------|------|------|------|------|
|                 | 4.00             | 4.50 | 5.00 | 5.50 | 6.00 | 6.50 | 7.00 |
| 70.00           | 92               | 122  | 151  | 181  | 210  | 240  | 269  |
| 80.00           | 132              | 167  | 201  | 236  | 270  | 305  | 339  |
| 90.00           | 172              | 212  | 251  | 291  | 330  | 370  | 409  |
| 100.00          | 212              | 257  | 301  | 346  | 390  | 435  | 479  |
| 110.00          | 252              | 302  | 351  | 401  | 450  | 500  | 549  |
| 120.00          | 292              | 347  | 401  | 456  | 510  | 565  | 619  |
| 130.00          | 332              | 392  | 451  | 511  | 570  | 630  | 689  |

NET RETURN PER ACRE **ABOVE CASH COST** FOR ALFALFA HAY

| PRICE<br>\$/ton | YIELD (ton/acre) |      |      |      |      |      |      |
|-----------------|------------------|------|------|------|------|------|------|
|                 | 4.00             | 4.50 | 5.00 | 5.50 | 6.00 | 6.50 | 7.00 |
| 70.00           | 27               | 57   | 86   | 116  | 145  | 175  | 204  |
| 80.00           | 67               | 102  | 136  | 171  | 205  | 240  | 274  |
| 90.00           | 107              | 147  | 186  | 226  | 265  | 305  | 344  |
| 100.00          | 147              | 192  | 236  | 281  | 325  | 370  | 414  |
| 110.00          | 187              | 237  | 286  | 336  | 385  | 435  | 484  |
| 120.00          | 227              | 282  | 336  | 391  | 445  | 500  | 554  |
| 130.00          | 267              | 327  | 386  | 446  | 505  | 565  | 624  |

NET RETURNS PER ACRE **ABOVE TOTAL COST** FOR ALFALFA HAY

| PRICE<br>\$/ton | YIELD (ton/acre) |      |      |      |      |      |      |
|-----------------|------------------|------|------|------|------|------|------|
|                 | 4.00             | 4.50 | 5.00 | 5.50 | 6.00 | 6.50 | 7.00 |
| 70.00           | -217             | -188 | -159 | -130 | -100 | -71  | -42  |
| 80.00           | -177             | -143 | -109 | -75  | -40  | -6   | 28   |
| 90.00           | -137             | -98  | -59  | -20  | 20   | 59   | 98   |
| 100.00          | -97              | -53  | -9   | 35   | 80   | 124  | 168  |
| 110.00          | -57              | -8   | 41   | 90   | 140  | 189  | 238  |
| 120.00          | -17              | 37   | 91   | 145  | 200  | 254  | 308  |
| 130.00          | 23               | 82   | 141  | 200  | 260  | 319  | 378  |