Introduction
Pershing County has approximately 36,900 acres of alfalfa production, with an approximate annual value of $37 million. (Foster, 2010)

The enterprise budget (2012 Pershing County Conventional Alfalfa Hay Production Budget) estimates the typical costs of establishing alfalfa hay in Pershing County, Nev., (specifically in the Lovelock Valley area). It should be used as a guide to estimate costs and returns for conventional alfalfa hay (non Roundup-Ready) establishment and production.

Enterprise budgets contain several cost components, and it can often be difficult to determine which should be considered for a given decision, because production costs are unique to each farming situation.

Categories or items most used in enterprise budgets are income/receipts, and variable and fixed costs. Income/receipt values are calculated from estimated production levels and expected prices to be received from the product produced.

Variable costs are those that vary within a production period. Examples include seed, fertilizer, chemicals, fuel and repairs.

Fixed costs include machinery/equipment costs, taxes, and land charges. Management fees are normally included as a fixed cost. Since the cost of management for the enterprise remains the same, regardless of the enterprise production level, it is considered to be “fixed”.

Total costs are calculated by adding variable and fixed costs. The goal of the operation should be to earn a profit above total costs every year.

Assumptions
Production data was gathered from a panel of Pershing County alfalfa producers in February 2012. The following assumptions refer to the Excel spreadsheet, “Conventional Alfalfa Hay Production Budget,” and they represent the average income and cost estimates to establish and produce an alfalfa hay stand under flood irrigation in Pershing County, Nevada. Materials and practices are not applicable to all situations, as establishment and cultural practices vary among growers within the region.

Land and Irrigation
This budget is based on a farm consisting of 200 total acres. Alfalfa stands are assumed to last five years. Flood irrigation is the primary irrigation system and costs $27.32 per acre.
Production
Yield production is estimated at 5.5 tons the first year; and yields of approximately 5, 4.5, 4.5 and 4 tons in years two through five years (depending on soil productivity).

Quality of the hay is based on 86 percent DM (dry matter) alfalfa hay. Alfalfa hay quality will often vary over the growing season. High-quality alfalfa is assumed to be harvested at optimum maturity and condition. Lower quality alfalfa is assumed to be harvested at less than optimum maturity and/or condition. Seventy percent of the crop is assumed to be harvested at optimum conditions.

Variable Costs
Expenses associated with seeding are prorated over the 5-year stand life.

Seed Costs
Seed Costs are calculated at a 25 pounds per acre seeding rate, with a cost of $5 per pound of seed, equaling a total seed cost of $125 per acre prorated over five years of production.

Seedbed Preparation Costs
Seedbed preparation and seeding costs are charged at custom hire rates and prorated over five years. The following rates per acre are included: Chisel Plow, $14.05; Field Cultivate, $11.10; Cultimulch, $11.40; Seeding, $14.30, which equals $50.85 total cost of establishment. $50.85 prorated over five years equals $10.17 per acre per year.

Fertilizer Costs
The following fertilizer amounts and costs are calculated for standard application rates as determined by a panel of Pershing County alfalfa producers. Costs are averaged over the life of the stand: 300 pounds per acre of MAP (Monoammonium Phosphate 11-52-0) costs $750 per ton. Fertilizer prices vary over time and by area, it is recommended that producers check with local suppliers for current prices.

Chemical Costs
The following chemical applications and costs are calculated for standard application rates as determined by a panel of Pershing County alfalfa producers.

First year:
Raptor – two applications the first year at a rate of 5 ounces per acre per application.

Years two through five:
Gramoxone – one application per year at a rate of 48 ounces/acre.
Lorsban – One application per year at a rate of 16 ounces/acre.
Adjuvant/Surfactant equals $1 per acre per application.

Machinery/Equipment and Fuel/Repair Costs
Machinery cost estimates, fuel estimates and cost calculations are based on information from the "Farm Machinery Cost Estimates." See the reference online at:
The machinery and equipment charge (cost per acre) is equal to the machinery cost (new cost) assuming eight or 16-year useful life using straight-line depreciation, 6 percent interest on average value, .5 percent insurance cost on average value and 1 percent housing cost on average value. Salvage Values are based on ASAE formulas. Machines are all assumed to be new and in the first year of use (except for pickup truck). Fuel calculations are based on the fuel requirements for each implement and the tractor, times the number of cuttings estimated per year. Lubrication costs are assumed to be 10 percent of fuel costs. (Williams, 2011)
Other Variable Costs
Miscellaneous costs include the following: twine, other supplies, utilities, soil tests, small tools, crop insurance, etc. Interest on capital is calculated for 6 months at a 6 percent interest rate.

Custom hire includes 10 chemical spray applications over a five year period at a cost of $6.20 per acre; this equals a total cost of $62.00 per acre. $62.00 per acre prorated over a five year period equals a custom hire cost of $12.40 per acre per year.

Fixed Costs
The following fixed costs are reflected in this budget:

Labor Costs
Part or all of labor may be a variable cost if paid labor varies with acres farmed. It is a fixed cost if labor costs do not change with acres farmed. Labor costs are calculated at a rate of $13.50 per hour, but may be adjusted to specific areas.

Management Charge
If a consulting firm or other entity is being used to help with management decisions, then this expense would be reflected in the management charge. If it is the owner/operator making management decisions then they should be receiving additional compensation over the average labor charge.

Discussion
An enterprise budget provides the best means to evaluate the potential profitability for a given enterprise or farm income source. Developing an enterprise budget allows an operator to identify costs, both variable and fixed, and probable returns associated with the production and marketing of a product.

“By understanding the basic concepts and formats of an enterprise budget, a producer is better able to analyze short and long-run fiscal impacts and evaluate profitability, as changes in break-even prices occur due to input cost and market pressures. Utilizing enterprise budgets developed by the University of Nevada Cooperative Extension provides producers an example format for evaluating current and potential profit centers in their agricultural operation.” (Riggs, Curtis, Harris, 2005)

Click on this link to access the inter-active “2012 Pershing County Conventional Alfalfa Hay Production Budget”.

The attached excel spreadsheet, “2012 Pershing County Conventional Alfalfa Hay Production Budget, Fall Seeding – 5 Year Stand,” was formatted after the “2011 Alfalfa Hay Production Budget, Spring Seeding – 4 Year Stand,” (Ward, Sulc, 2011) with permission of the author. (via email, 3/14/2012)

References


1 Or paste http://www.unce.unr.edu/publications/files/ag/2012/fs1213Conventional.xls