

Hay Harvest Custom Hire Versus Machinery Ownership Cost Evaluator

Ranches can often reduce hay production cost by using custom hire harvest services with lower cost than operating their own machinery and providing the operating labor. This decision aid assists in evaluation of the current ownership or the necessary investment required to own the machinery versus using custom hire providers. Costs are divided between ownership, operating and indirect costs as follows:

Ownership Cost per Bale – Allocated over the total annual harvested production.

- a. Capital asset replacement or depreciation description below.
- b. Annual repair and maintenance costs.
- c. Insurance and other ownership costs.
- d. Interest cost for the investment – actual or opportunity cost.

Operating Cost per Bale - Calculated for a representative hay field to facilitate calculation.

- a. Fuel and oil for machinery operations costs.
- b. Supplies costs normally provided by a custom service provider like bale wraps.
- c. Hired operator labor costs.

Indirect Costs Including Management and Overhead.

Ownership of all the machinery is a major consideration to enter ownership or the change to custom hire and sell current machinery and use custom hire harvesting. The annual volume to annual production is a critical determinant to harvest ownership cost.

The question of investment requirement to owning or getting out of the current ownership is provided in a separate sheet 3.

Timeliness of availability of custom service providers is also critical in evaluation of the custom hire versus ownership. Hay harvest timing is particularly sensitive. If the custom service is not timely hay quality and yields suffer. Contractors face the reality “everyone wants the service” at the same time. Who will get taken care of first?

The operating labor costs present the question “do the current full-time employees or the owner have the time to operate the machinery or does additional labor have to be hired?” The decision aid facilitates the evaluation of this question. It’s critical to identify a representative hay field and get good numbers for each operation time and operating costs per acre.

There are first two spreadsheets used to evaluate each option. The first sheet that summarized ownership, operating costs and indirect costs. The capital investment and asset replacement or depreciation cost and repairs are calculated in the second sheet.

The example provided is to illustrate reports and data requirements. It does not provide an answer for any operation. The idea is “get your own numbers on paper” before making the major long-term investment decision. **Let your actual numbers do the talking.**

The decision aid facilitates “**what if**” analysis once owner cost is calculated by changing key numbers like custom rates, total acres harvested and yields.

Knowing harvest cost also is important when evaluating producing or purchasing hay.

Custom hire rates are published by a number of Land Grant Universities, and custom service providers will of course provide their rates.

Key Definitions to Clarify Data Needs

Indirect Costs or overhead are costs that can’t be assigned directly to a production activity. These costs are also referred to as fixed costs. Indirect costs continue irrespective of the level of production activities. **General and Administrative Costs (G&A) are indirect** costs that all businesses incur to cover bookkeeping, professional fees, insurance, office supplies, computer services, phone and utility costs. Administrative costs include the salary and payroll for support personnel.

Owner Operator Labor and Management compensation should be included in the production cost calculation at a level equivalent to the salary required to hire a non-family member to provide an equivalent service. These costs are reduced with custom hiring hay harvesting.

Ownership Costs

Equipment and machinery ownership costs are the most important determinants of the economics of owner versus custom hire for hay harvest. The largest ownership cost is depreciation or capital replacement cost. As explained below IRS calculated depreciation is an inadequate measure of depreciation. Purchase options should also include used equipment or machinery. Ownership cost per bale is based on total bales harvested annually. **Volume of hay production is a key determinant for ownership cost per bale.**

Depreciation or Capital Asset Recovery to Replace IRS Depreciation for Cost

Depreciation is the accounting procedure used to allocate a capital investment to the annual use cost of the capital asset. Capital assets include vehicles, machinery and equipment purchases that have a productive life of more than one year. The number of years the cost of an asset is allocated each year depends on the “productive or economic life” of the asset less the **salvage value** or what the asset is worth after the **economic life** is over. Cost of replacing these assets has a major cash flow requirement. Not replacing these assets is referred to as living on depreciation.

Internal Revenue Service (IRS) Depreciation is the procedure that IRS requires a business to follow to calculate tax-deductible depreciation. It should be clear that the rules followed to calculate IRS depreciation **are not good estimates** of depreciation for production cost calculation. IRS accelerated depreciation using Section 179 or use of recovery period is 5 years for tractors, equipment and machinery means IRS depreciation distorts year to year depreciation when calculating costs.

For a realistic “depreciation” or capital asset recovery it is necessary to replace IRS annual reported depreciation to more closely reflect the economic cost of depreciable assets for cost calculation. This is a large cost and is the primary reason the custom hire operator has the cost advantage as they harvest very large volume of hay. Their cost is spread over many more acres or bales compared to the owner operator.

Assets are valued at current replacement cost in these decision aids. Capital recovery cost is calculated using straight line depreciation with an expected ranch level salvage value and economic life.

Book Depreciation

Capital asset software used by the ranch CPA to calculate IRS depreciation will provide for calculation of “Book Depreciation”. The user defines the economic life and salvage value as is done in this spreadsheet. The tax CPA must be provided the economic lives and salvage values to report book depreciation. However, the asset values used are based on historical cost and most likely underestimate replacement cost depreciation.

Always communicate with the business CPA to address IRS tax issues.

For other decision aids see:

**Texas A&M University - Department of Agricultural Economics – Agri-Life Extension
Beef Cattle Decision Aids**

<http://agecoext.tamu.edu/resources/decisionaids/beef/>