

Buy It or Bale It: Is it more cost-effective to purchase hay or make it?

by Peg Reedy

Introduction

With the proliferation of small farms on the rural landscape, a common question from smaller scale livestock producers and horse owners has been: Is it cheaper to purchase hay or to raise and harvest my own hay? The easiest way to approach this query is by asking some basic questions:

- Do I have the labor and land resources to grow and harvest hay?
- Am I getting the quality of hay I desire?
- How much does it actually cost to raise an acre of hay versus the cost of purchasing hay?
- What if I grow hay and have it custom harvested?
- Are there better uses for personal time and land than raising hay, for instance another job, family time or possibly renting land for another use or grazing your livestock on it? Reflecting on these alternative uses is commonly known as considering your opportunity costs.

Resources for Current Hay Prices

There are a number of good resources for determining the current price of hay, including the UW-Extension Hay Price Summary, published every other week at: <http://fyi.uwex.edu/forage/h-m-r/>. The cost of hay is dependent on the hay market, which is in turn dependent on the quality of the hay, the growing season and the supplies of hay on hand. Don't forget to figure in any delivery and storage costs associated with purchasing hay.

Determine what the cost of the hay is per ton, not by the bale, since bale size can be extremely variable and

animals eat pounds of hay – not bales. Generally large bales are less expensive per ton than small square bales, although handling and storage constraints may limit options.

What Costs Are Involved in Making Hay?

When making the decision whether to make or purchase hay, it is necessary to consider all of the costs involved, including variable costs and fixed costs. Variable or production costs includes equipment needed for making your hay crop including the mower, rake, baler, tractors, and wagons.

Fixed costs are associated with the ownership of land and equipment. Also known as the 'DIRTI 5' of ownership, fixed costs include:

- **D**epreciation
- **I**nterest
- **R**epairs
- **T**axes
- **I**nsurance

and rent if the land is leased.

Your Schedule F depreciation schedule may be a good way to determine equipment costs associated with hay production. You can also use the Wisconsin Custom Rate guide to estimate these costs ([http://www.nass.usda.gov/Statistics by State/Wisconsin/Publications/custom_rates_2013.pdf](http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/custom_rates_2013.pdf)). While purchasing used equipment may initially decrease machinery investment costs, keep in mind that repair costs and lost time may become an issue.

Variable costs will include establishment costs: seed, fertilizer, fuel, herbicides, and land preparation needed to prepare and plant the hayfield. These costs can be amortized over the life of the stand. Baling supplies like twine, hay preservatives, hay wrap, etc. are also considered variable costs. Remember, harvesting hay removes nutrients from the soil, so

those nutrients needed to be replenished periodically with fertilizer. Keep current soil test reports and fertilize according to those recommendations. Other variable costs also include labor—your own as well as any help you may need to put up the crop. Don't undervalue your time and the opportunity costs of that time.

Other Considerations

There are also a number of other issues to be considered, both positive and negative. When you make your own hay you have much more control over the type of hay you choose to seed, weed management, and possibly more control over timely harvest to maximize quality. On the other hand, off-farm employment may limit the amount of time you have to harvest in a timely manner. If you have a limited number of acres that can be dedicated to growing hay, it may be more cost effective to purchase hay and use those acres to graze for efficient harvest of the forage.

With more acres, you can spread the costs out over more land. As with all farming, there is risk involved with each growing season and as yields fluctuate so does the cost of hay per ton that you grow. The higher your yields, the lower the cost per ton to produce hay, but conversely a poor growing season means that hay becomes more expensive. During a good year, any surplus hay might be sold, improving the bottom line for your hay enterprise.

Another option might be to grow the hay acres, but have a custom operator make the hay. It may be less expensive to have a custom operator assume the cost of equipment. The most recent Wisconsin Custom Rate Guide for your region can give a fairly accurate estimate of the harvest costs if you decide to go this route. Keep in mind that it will cost the same to take one ton of hay off an acre as three tons, so fertility management remains a high priority. Advantages of custom harvest may include more consistent forage quality, possible use of the latest technology vs. used equipment, no repair costs, reduced farm labor requirements, less cost in machinery ownership, and once again, opportunity costs. It is very important to

have good communications with your custom operator, keeping them apprised of field conditions, crop progress, and possible field hazards. Have a contract in place that spells out the responsibilities of each party to avoid any confusion.

Summary

If one has limited acres (<10) and little or no farm equipment and/or time, it is probably more cost effective to purchase hay and utilize grazing on the available acres.

Tables 1 and 2 can help you estimate your cost of production for alfalfa and grass hay. If you can make hay for less than the calculated cost of production with acceptable quality, then you may want to consider making your own. The more acres you have to harvest, the more you can reduce the per acre costs of having some equipment and baling it.

Resources

For an example breakdown of production costs, or to calculate your own cost of hay production based on your inputs, please see the following spreadsheets: <http://fyi.uwex.edu/forage/fof/>

View the latest Wisconsin Custom Rate Guide to determine the average cost of having a custom operator harvest your hay based on the area of the state you live in and the size of bales that are harvested: [http://www.nass.usda.gov/Statistics by State/Wisconsin/Publications/custom_rates_2013.pdf](http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/custom_rates_2013.pdf)

Wisconsin and Upper Midwest Hay Market Reports are available on the UW Extension Team Forage website: <http://fyi.uwex.edu/forage/>

Table 1. Cost to Purchase Hay

Hay Type	Yield per Acre	Cost per Ton DM	Cost per Acre
Alfalfa/Grass	6 tons	\$155	\$930
Grass	5	\$85	\$425
Clover/Grass	5	\$120	\$600

This table reflects an average cost of hay. This cost does not include any delivery or storage costs. Actual cost will vary by quality of hay, size of bales, transportation, storage and handling costs. Look at weekly hay market reports to determine purchase cost based on these factors.

Table 2. Cost of Raising Hay

Hay Type	Operating Costs*		Fixed Costs**		Cost to Produce Hay***	
	Per Acre	Per Ton DM	Per Acre	Per Ton DM	Cost per Acre	Cost per Ton DM
	----- dollars -----					
Alfalfa/Grass 6T/acre	263.37	43.90	197.97	32.99	461.34	76.89
Grass 5T/acre	299.05	59.81	199.72	39.94	498.77	99.75
Clover/Grass 5T/acre	222.21	44.44	195.95	39.19	418.16	83.63

* Operating costs include ¼ of establishment costs, fertilizer, pesticides, fuel, repair and maintenance of machinery, etc.

** Fixed costs include land and machinery ownership costs, labor and DIRT 5

*** Differences in production costs reflect the higher seed prices for alfalfa and clover and the cost of nitrogen fertilizer for grass hay. Alfalfa/grass hay typically yields more than a grass or grass/clover hay. Based on two cuttings per year.