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Forages

MARKETING HAY BY NUTRITIVE VALUE AND WEIGHT

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Introduction

The use of hay-only winter feeding programs is expensive and contributes significantly to the overall cost of cow ownership. Producers should examine the use of alternative winter feeding strategies that reduce the dependence on hay and reduce input costs for the cow-calf production system. A backup plan, however, for the inevitable drought or ice/snow cover days will require a store of hay that in most cases should be purchased from reputable sources rather than produced Livestock production systems generally have too much forage in spring and not enough the rest of the year. If stocked for the reduced forage growth during late summer, there is an abundance of forage during the spring. Rather than bale their own hay, producers should arrange for custom hay producers to harvest the surplus, or calves should be used and sold when surplus forage is used up. This is especially true for producers with less than 100 head of cattle who probably have little business owning hay harvesting equipment. Therefore, it may be necessary to re-evaluate the primary method in which hay is marketed in Texas and the southern US.

The Problem

Although much hay is put up and sold as small square bales, most cow-calf producers primarily feed hay in large round bales. The use of round bales is popular due to reduced labor requirements associated with storing and feeding the hay. Most hay sold for cow-calf production systems is sold on a per round bale basis. There are two major problems associated with this procedure.

The first problem with purchasing hay strictly on a per round bale basis relates to the unknown nutritive value of the bale. Producers buying hay need to know whether the nutritive value of the forage is high enough to meet the requirements of animals being fed. If the forage is below the nutrient level required by the kind and class of animals being fed, then additional supplementation is required during the hay-feeding period. This can add dramatically to the cost of the feeding program.

Many times hay is advertised as "well" or "heavily fertilized", but the meaning of these terms is unclear at best. The actual level of crude protein, digestible energy, and possibly other aspects of the forage should be determined from a forage analysis. This information enables the producer to make sound feeding, and if necessary, supplementation decisions. Without a forage analysis, it is difficult to determine which of two bales of similar weight has more value. Many times higher-priced hay may actually prove to be a better bargain if no additional supplement is required. Ask yourself the question: Why should a bale with only 6% crude protein sell for the same as a bale that contains 16% crude protein? In most cases they should not, yet these differences are not obvious from a visual appraisal.

Another problem relates to the amount of dry matter being sold/purchased. Bale size can and does vary tremendously due to differences in (a) baling equipment, (b) experience/skill of the equipment operator, (c) forage species, (d) moisture content of the forage when baled, (e) type of wrap used, and (f) storage conditions (inside versus outside). A complete economic analysis indicates bermudagrass hay costs $65-$70 per ton to produce if all inputs, which include labor, equipment, fuel, repairs, taxes, depreciation, fertility, herbicide, etc. are accounted for. Recent work by Falconer indi-

cated production costs alone, without the added expenses of hauling hay out of and back into a field were $58.00 per ton, or $29.00 per 1,000-lb. round bale. Therefore, a round bale that sells for $25 can either be a wise purchase if the bale weighs 1,200 lbs., or a poor investment if the bale only weighs 700 lbs. When hay is sold by the bale rather than weight, someone, either the seller or the purchaser, is getting short-changed. Producers may also be feeding less nutrients than required for good animal performance if nutrient content is low or bales weigh less than estimated.

The Solution

The obvious answer to the problem of marketing round bales of unknown weight and nutritive value is to analyze and weigh the hay. Nutritive value of the forage can be determined by sending forage samples of each ***lot*** of hay to a forage testing laboratory. The actual weight of a load of hay can be determined by a trip across a set of local scales. Scales likely could be located at the production site. This weight, adjusted for moisture content determined by a moisture probe, results in the actual dry weight of the hay. For the purposes of hay marketing, a ***lot*** of hay is defined as:

All the forage harvested and baled from one field at one harvest date and stored under similar conditions.

In other words, random forage samples should be obtained representing all harvest dates for all fields. Samples should be obtained using a hay core inserted into the bale from the curved, not flat, side. Ten percent of the bales should be sampled to obtain one composite sample for analysis. This sample should be representative of the nutritive value for that lot of hay. Sample cost is presently $5.00 per sample for crude protein analysis, a small price to pay to ensure the potential purchaser of the level of nutrients in that particular lot of hay.

Once the nutritive value and weight of the hay is known, prices per ton based on nutritive value may be established based on another accepted standard feed stuff, such as cottonseed meal. Finally, classifying hay based on nutritive value would provide information to purchasers regarding the kind and class of livestock for which a particular lot of hay is suited. A classification system also allows producers of better hay to be rewarded accordingly. A suggested hay classification system is illustrated in Table 1.

A feed stuff other than cottonseed meal may be used to estimate the value of the hay and these prices will vary with year, but the weight and nutritive value of hay crops ***must*** be determined in order to facilitate a fair and equitable hay market. If you currently purchase hay, insist on seeing evidence that the hay has been weighed and has undergone forage analysis. If you currently produce hay, consider providing the customer a forage analysis and demonstrate the value of your efforts in putting up a good product. In the end, both parties will benefit from hay that is marketed by the ton and based on nutritive value.

For more information, contact your local County Extension Agriculture Agent.

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Table 1. Hay classification based on crude protein content and class of livestock for which the hay is applicable.

Hay Classification	Crude Protein Content	Value of Cottonseed Meal[1]	Estimated Value of Hay Crop[2]	Class of Livestock[3]
A	> 14%	$250/ton	$91.46/ton	1 - 4
B	> 12 - 14%	$250/ton	$79.27/ton	2 - 4
C	> 10 - 12%	$250/ton	$67.07/ton	3 - 4
D	> 8 - 10%	$250/ton	$54.88/ton	4
E	< 7%	$250/ton	$36.59/ton	NA

[1] Value of cottonseed meal in East Texas, spring 2000.
[2] Value of hay crop based on crude protein (CP) content as related to cottonseed meal, which is 41% crude protein, or in this case $0.30 per lb. of CP. Class A hay is assumed to be 15% CP, Class B hay is 13% CP, Class C is 11% CP, Class D is 9%, and Class E is 6%.
[3] Classes of Livestock: 1= growing beef animals, first calf heifers; 2 = high-milk beef cows, horses; 3 = late gestating cows, lactating cows; 4 = dry, early to mid gestating cows, N/A = not appropriate for any class of livestock without an appropriate supplement.

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