Extension shopper article for 8-8-17

Considerations When Pricing Hay

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Bale weight and nutrient content are critical factors in determining the value of a given bale of hay. Bale weight affects not only the amount of hay being bought or sold but also the cost of feeding and transporting it. An accurate assessment of nutrient content is also needed to determine the cost per pound of energy (e.g. TDN) and protein supplied. Round bales are generally described by bale width × bale diameter or bale height. For example, a 5' × 6' bale would be five feet wide and six feet in diameter and a 4' × 5' bale would be four feet wide and five feet in diameter. The effect that bale size has on bale weight by using a 5' × 5' bale that weighs 1,100 pounds for comparison; this bale would have a density of 11.21 pounds per cubic foot. If all bales had the same density, round bales of varying sizes would range in weight from 563 to 1,584 pounds. The percentage difference among various sizes of bales.

- A 4' × 4' bale is only 51 percent the size of a 5' × 5' bale.
- A 5' × 6' bale is 44 percent larger than a 5' × 5' bale.

In addition to size, bale density also has a major impact on bale weight. Density as influenced by tightness of wrap or bale compression can vary considerably, depending on operator preference and the equipment being used. Most balers have a range of settings that allow the operator to increase or decrease wrap tightness and bale compression. Another factor affecting bale density is that some forages are naturally denser than others. Both plant maturity and forage species influence forage density. As plants mature, the neutral detergent fiber (NDF) content generally increases, which reduces density. Differences in forage species also affect density.

Instead of price per bale, hay should be purchased by the ton. The importance of pricing hay by the ton is shown in this example: if all bales – regardless of weight – were priced at $50 each. The 1,100-pound bales would cost $90.91 per ton ($50 ÷ 1,100 pounds = $0.04545 per pound; 2,000 pounds × $0.04545 per pound = $90.91 per ton). In comparison, the 563-pound bales would cost $177.56 per ton.

In addition to cost per ton, the cost per pound of energy (e.g. TDN) and protein should be calculated. To determine nutrient content each load or cutting of hay should be sampled and sent to a reputable lab for testing. The most appropriate analysis will depend on forage species, intended use and laboratory experience, so producers should consult with a nutritionist or your Extension office for specific testing recommendations. Reputable labs will report nutrient concentration on both an as-fed and dry matter basis. For example, a lab may report that a sample contains 10 percent moisture, 52.2 percent TDN on an as-fed basis and 58.0 percent TDN on a dry matter basis. Values reported on an as-fed basis are handy when calculating cost per pound of nutrient and values reported on a dry matter basis are useful when evaluating animal nutrient requirements. This information can be used to calculate the cost per unit of TDN, protein or any nutrients found in hay as well as other feedstuffs and supplements. Depending on nutrient content and price per ton it may be cheaper to purchase hay that is slightly more expensive per ton but has a higher nutrient content. Calculating cost per pound of nutrient will allow for the selection of more economical sources of hay, resulting in reduced feeding and supplementation costs.

Additionally, forage condition (free of mold, foreign objects and weeds), forage species, the potential presence of toxic compounds (such as nitrates), palatability, storage characteristics and potential feeding losses should be considered when selecting hay and evaluating its value.