Estimating Dry Hay Value

It is important to understand the value of your hay purchases. The most economical and balanced way to compare values of different hay types is by analyzing them on a dry matter basis and calculating the value per ton. The Dry Hay Value Estimator (Excel file) can help you make more informed decisions by providing cost comparisons for different hay types. You can select the hay type, bale weight, dollar value per bale, and nutritive value. The calculator then will provide an estimated value of the hay per bale and per ton using the nutritive value. The calculator does not consider the cost of production per bale or ton of hay.

The Dry Hay Value Estimator is divided into four steps, and users input their data in the sections highlighted in yellow. The program does not use commodity feeds for comparing the economic value of the nutrient content due to variability in prices and nutrient content of many commodity feeds available in the marketplace. To download the Dry Hay Value Estimator, visit *http://extension.msstate.edu/publications/estimating-dry-hay-value* and click on the Excel file.

Step 1: Forage Analysis Report from Hay Being Sold

In this section, you can select up to five different hay types and bale sizes from drop-down menus. You will also need to input the average bale weight in pounds for each hay type selected, along with the nutritive value (dry matter, crude protein [CP], acid detergent fiber [ADF], neutral detergent fiber [NDF], and total digestible nutrients [TDN]) for each selected hay type. If the seller does not provide this information, request a forage analysis before you purchase the hay. Nutritive values entered in the calculator must be on a dry matter basis. For more information on how to take a representative hay sample for analysis, see MSU Extension Publication 2895 *Hay Quality and How It Affects Your Feeding Program*. For more information on how to submit a hay sample for analysis, contact your local county MSU Extension office, or download the Mississippi State Chemical Laboratory's submission form at *https://mscl.msstate.edu/sample-submission-forms/index.php*.

Step 2: Estimated Hay Value from Biomass Only on Dry Matter Basis

This section estimates the value of the hay based on the biomass only. Enter the average weight of the bale being purchased, along with the dollar value of the bale (request this information from the seller; it is usually the same as the asking price). Also enter the number of bales and any delivery cost. The calculator will adjust the value per bale and per ton of hay based on the dry matter content of the hay.

Step 3: Hay Value Based on Nutrient Content on Dry Matter Basis

In this section, the calculator uses the nutritive value entered for each hay lot, hay type, and bale size in steps 1 and 2 to estimate the nutrient content per bale and per ton of hay, along with the calculated values for digestible dry matter and dry mater intake. Digestible dry matter (DDM) is the portion of the **dry matter** in a feed that is digested by livestock at a specified level of feed intake. It is calculated from acid detergent fiber (ADF) and expressed as a percent. The higher the ADF, the lower the digestibility of the hay. In grasses, ADF will range from the mid-30s to mid-40s. Dry matter intake (DMI) is the amount of hay a cow consumes per day on a moisture-free basis based on a percent body weight.

Unfortunately, feed intake is limited by fiber content (NDF). Assuming a 1,000-pound cow with a dry matter intake of 1.5 percent: for every 100 pounds of weight, a cow consumes 1.5 pounds of her body weight in NDF. Dry matter intake usually ranges from 1.5 percent to 3.5 percent, depending on the type and growth stage of the livestock. Grasses with an NDF less than 50 percent are high quality; an NDF more than 60 percent is low quality.

Step 4: Margin Difference for Hay Value

This step estimates the value of the hay per bale and per ton and compares it to the assumed value provided by the seller per bale, resulting in a calculated margin difference. The average estimated value is a combination of the hay value (based on the assumed biomass value on a dry matter basis) and the hay's nutrient value. This allows you to determine if the calculated value is higher or lower than the hay value.

*This information is for educational and preliminary **planning purposes only**. Use this program as a **guide only**. The Dry Hay Value Estimator uses publicly available information as a basis for its calculations; such information may change over time. Users assume the risk of using or otherwise relying upon any Dry Hay Value Estimator output. This guide is not to be used for negotiation purposes, contracts, agreements, or legally binding understandings between a buyer and a seller since calculated values are based on the hay value and nutrient content entered by the user. The Dry Hay Value Estimator does not provide supplementation recommendations.*

*The Mississippi State University Extension Service **does not guarantee** the functionality of the calculator. MSU Extension **does not guarantee** the accuracy or completeness of any Dry Hay Value Estimator output. The estimator, its operation, and any output are provided as is and without any express or implied warranty, including merchantability or fitness for a particular purpose. MSU Extension is not bound by any estimator output and is not responsible for use or reliance on such output for buying or selling hay.*

Publication 3431 (POD-03-20)

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Produced by Agricultural Communications.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director