

Upcoming Events

Crook County Fair

July 23-30

Weston County Fair

July 22-31

Campbell County Fair

July 25-August 7

Questions?

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The Importance of Testing Hay Quality



The Importance of Testing Hay Quality

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With hay season in full swing, now is the time to consider the quality and quantity of your inventory. When preparing to feed hay in the winter it is critical to understand the quality of the hay being fed and the amount of hay available.

Keeping records of the amount of hay used yearly allows producers to keep track of how much hay they will need for their herd so they can better prepare for the winter months. Additionally, keeping track of the current year's hay inventory allows producers to know how much hay they have available to use as the winter months go by.

Knowing the amount of hay available is important but testing the quality of the hay is also crucial. Hay quality is variable depending on the type of forage, soil type, fertilizer rate, and the maturity of the forage when it was hayed.

The most important factor that impacts forage quality is maturity at harvest. As the plant matures, fiber concentration increases, which decreases digestibility (Niemeyer, 2020). Additionally, as maturity increases, crude protein decreases. Understanding the quality of the hay is cost effective, as it allows producers to better meet the nutritional requirements of their herd throughout the winter months.

High-quality hay should be fed to animals with higher nutritional requirements, such as growing animals, cows in late gestation, and lactating cows. Low-quality hay should be fed to animals with lower nutritional requirements, such as open cows, cows in the early gestation stage, and mature bulls. It is important to meet the nutritional requirements of your livestock to increase pregnancy and calving rates.

Hay testing requires time and money but the information it provides is beneficial because it allows producers to create feed rations accurately and cost effectively for their herd.

To analyze the quality of your hay it is important to test your hay in different groups/lots. Hay combined into the same lot should have been harvested from the same field and consist of similar types of plants, cutting dates, maturity, variety, weed contamination, type of harvest equipment, curing methods, and storage conditions. When these conditions differ, feed should be designated and sampled as a separate "lot" (Berger, A., 2017).

When collecting hay samples to send into the lab, a hay probe or core sampler should be used for best results. See Figure 1 for the locations where round and square bales should be probed.

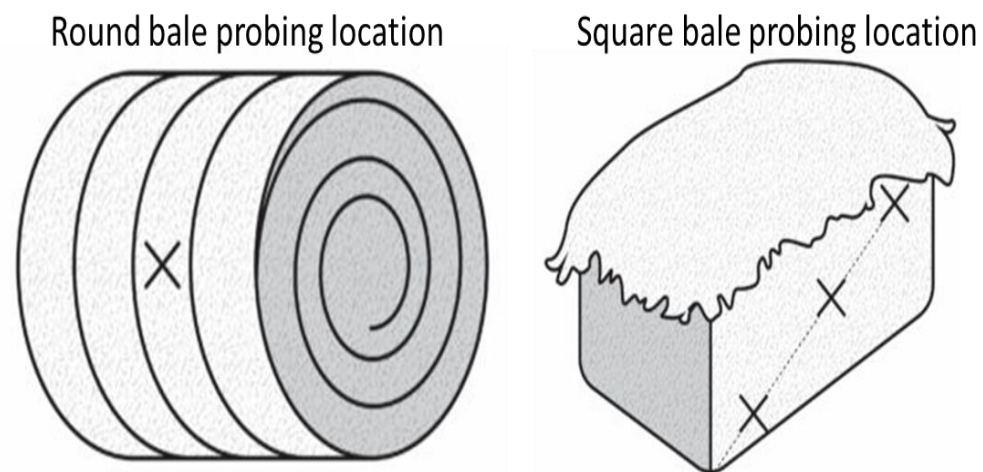


Figure 1: Probing locations for round and square bales. Photo credit to Ward Labs.

Issued in furtherance of extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Kelly Crane, director, University of Wyoming Extension, University of Wyoming, Laramie, Wyoming 82071.

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The hay probe should penetrate at least 12-18 inches into the bale. It is important to get a representative sample of your lot, so it is important to obtain a sample of 15-20 random bales per lot. More information on proper hay sampling can be found on the Ward Labs website.

Hay probes can be checked out from your local UW Extension office. Hay samples should be mailed to Ward Labs at 4007 Cherry Ave., Kearney, NE 68847. Ward Labs offers different testing packages using wet chemistry and Near Infrared Spectroscopy (NIRS). Wet chemistry analyses ranges from \$13-42.50/sample depending on the information you would like to receive. The NIRS analyses cost \$18/sample and it provides information such as crude protein %, relative feed value, total digestible nutrient estimate %, minerals % (calcium, phosphorus, potassium, and magnesium), fat %, etc. It is important to note that wet chemistry and NIRS are two different analysis tools, so there could be a variation in the nutritive value between the two analyses. Therefore, in order to compare different hay qualities it is important to get them all tested with the same analysis (i.e. either all with wet chemistry or all with NIRS).

When sending the samples to the lab it is important for the sample to be analyzed for moisture, protein, and energy. Samples can also be tested for minerals and nitrates. Testing for nitrates is recommended on annual forages harvested for hay, such as foxtail millet, oats, sudan grass, and sorghum-sudan hybrids, because they can accumulate high levels of nitrates under various growing conditions that can potentially reach a toxic level (Berger, A., 2017). Testing for nitrates through Ward Labs costs \$12.75/sample. While it adds cost, the test indicates whether the nitrate content in your hay is safe for your livestock to consume.

Summary

Testing your hay for its quality allows you to better meet livestock nutritional requirements. Sampling and testing hay for quality can make designing a feeding program easy and economical (Niemeyer, 2020). It provides information that allows producers to create feed rations that are

accurately and cost effectively for their herd. Additionally, it is important to keep inventory records on our hay to know our production numbers and how much hay we have available before heading into winter so that we can plan accordingly.

During hay season, it is important to test forages such as oats, fox millet, sudan grass, and sorghum-sudan hybrids for nitrates. Although testing hay can be an added cost, it is important to do so. Nitrate poisoning can cause serious illness or even sudden death in livestock. Testing hay for nitrates indicates whether the nitrate content in your hay is safe for your livestock to consume.

Sources for Further Reading on Testing Your Hay Quality

Berger. A., 2017. Test, Don't Guess- sampling and testing hay.

University of Nebraska-Lincoln. <https://beef.unl.edu/sampling-and-testing-hay>.

Lalman. D., Richards. C., 2017. Nutrient Requirements of Beef Cattle.

Oklahoma State University. <https://extension.okstate.edu/fact-sheets/print-publications/e/nutrient-requirements-of-beef-cattle-e-974.pdf>

Niemeyer. S., 2020. Forage Testing Can Save Dollars. University of Nebraska-Lincoln. <https://beef.unl.edu/beefwatch/2020/forage-testing-can-save-dollars>

Ward Laboratories Inc. <https://www.wardlab.com/submit-a-sample/feed-nirs-analysis/feed-nirs-sampling-procedure/>

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