



Sampling Hay and Haylage

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Using laboratory analysis to measure forage quality is an effective way to determine what supplements, if any, are needed to optimize animal performance. However, a laboratory analysis is good only if the sample submitted is representative of the forage the animal will eat. Proper collection and preparation of the sample are important.

Sampling Hay

When taking samples from hay bales, you need to have the right tools. Purchase or borrow a forage sampler, such as the Penn State Forage Sampler (Fig. 1). Forage samplers are a sharpened tube that is drilled into a hay bale to cut out a small subsample. Compared to the cost of feeding supplements forage samplers are inexpensive and should be part of the livestock producer's management kit.

Divide the hay into lots based on management; such as date of cut, forage maturity, forage species, nitrogen fertilized versus grass-legume, or rain damaged hay. For each hay lot, randomly select 12 to 20 bales. Using the forage sampler take a cored subsample from each bale. When sampling large round bales stored outdoors, take the sample from below the weather damaged "cap" if the animals will not be force to eat this material. Combine these 12 to 20 cores in a plastic bag to make the sample to be sent to the lab. Hay samples can be mailed to the laboratory in the plastic bag since they should be adequately dry.

Haylage

Baled haylage should be sampled the same as dry hay bales. Haylage stored in a silo should be sampled after removing the exposed outer silage. Then take several grab samples out of the feed wagon or bunk. If forage from different fields has been layered in a bunker silo, take grabs from across the height and width of the face to ensure a representative sample for analysis. Or take a sample after the silage has been mixed in a mixer wagon.

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Sample Preparation

Wet silage samples can spoil rapidly in warm weather. Proper care needs to be taken when preparing and mailing the sample if you are to obtain a meaningful report. Put the haylage sample into a plastic bag, press the bagged sample to remove all the air, and then seal the bag. The acid in the silage will continue to preserve it if there is no oxygen in the bag to cause secondary fermentation. It is important not to dry silage or haylage samples since the organic acids that preserve these feeds evaporate during drying.

Sample Submission

Fill out the information sheet provided by the forage testing laboratory. Some laboratories will send copies of the report to other people, such as Extension agents or nutrition consultants. If you work with these individuals and want them to receive a copy, make sure their names and addresses are in the appropriate places on the form. Next select the analysis to be conducted. Most forage testing laboratories can measure many nutritional components. Since not everyone wants the same information, the labs offer different testing packages. Which package to request depends on your livestock type and your management goals. A beef operator may want only an estimate of digestible or net energy, protein, and major minerals. This analysis can be conducted at a low cost using near infrared (NIR) analysis. However, a dairy operator may also want neutral detergent fiber (NDF), protein fractions, and trace minerals, which will require a more expensive combined NIR and wet chemistry procedure. After completing the submission sheet and properly preparing the sample, you can send them to the laboratory. A copy of the results will be returned to the addresses listed on the sample information sheet.



Fig 1. Penn State Forage Sampler.