

Taking a Good Forage Sample

Introduction

Sampling is a major factor affecting the accuracy of forage quality analyses. Chemical analysis is valid only to the extent that the sample analyzed represents the lot of hay or haylage to be fed.

Forage Lots

Take samples by “lots” of hay or silage. A “lot” is defined as hay or silage, which has been made from the same cutting, field, and stage of maturity. A sample should not represent more than 200 tons of dry matter. For lots larger than 200 tons, two or more samples should be taken and the average of the results used to represent the lot.

Sampling Equipment

The most commonly used sampling method for baled or stacked hay employs a hollow tube (probe) to extract core samples from the hay. Use a probe that travels at least 12 to 18 inches into the hay package for most hay packages. The internal diameter of the probe should be at least 3/8 of an inch. Probes with sharpened tips must be kept sharp to cut through the hay. A dull tip may reduce the amount of stem material in the sample due to the tip sliding past rather than cutting through the stems.

Sampling Hay and Haylage

Baled Hay

Baled hay packages are not uniform products because the initial windrows were not uniform and the baling process affects the distribution of leaves and stems (bale structure) within the bale. Based on the structure of the hay package to be sampled, the hay should be probed in such a way as to adequately sample the various concentrations of stems and leaves. At least 20 cores (one core per bale) should be taken, combined, and mixed well to develop one sample per lot. Bales within a lot of hay should be sampled at random. Random means that there should be no pre-chosen reason for selecting a specific bale to sample (i.e., location, color, leafiness, etc.). Techniques to guard against non-random sampling are to sample every fourth or fifth bale going around the stack, truck, or down in the row in the field or take at least five random samples from each of the four sides of the stack.

Sample rectangular bales, regardless of size, using a probe centered in the end of a bale and drill horizontally into the bale.

Sample round bales by drilling horizontally into the curved side of the bale. Deteriorated hay from the exterior of the bale should not be sampled if it will not be fed to animals or they can be selecting in their feeding. However, if hay to be sold includes the deteriorated exterior, it should be included in the sampling. Bales stored outside should be sampled within 2 to 4 weeks of feeding so that continued deterioration does not significantly lower bale quality from the sample taken for analysis.

Staked Hay

For loose hay use a probe at least 30 inches long with $\frac{3}{4}$ inch or longer internal diameter and drill at an angle from the side of the stack to the probe's full depth in 20 random locations throughout the stack. In a mow, hold the probe vertically and drill at the spot where the hay is compressed by the weight of the operator. Discard any weather damaged surface layer that would not be included in the part being fed or sold. Hay stored outside should be sampled within 2 to 4 weeks of feeding so that continued deterioration does not significantly lower bale quality from the sample taken for analysis.

Submit samples by Wednesday at noon if possible. Submit forage samples in gallon zip-lock bags. A full gallon bag is needed. Identify each sample and keep a sample ID record. A standard forage analysis is \$22 and provides RFQ, CP, CF, TDN, nitrates plus other. Samples may be delivered to any UGA Extension office. The Walker County Extension office is located at 102 East Napier Street, LaFayette, GA 30728; open 8 a.m. – 12 p.m. and 1 p.m. – 5 p.m. M-F. Call us at 706.638.2548 whenever we can be of assistance.

Adapted from a procedure published by the National Forage Testing Association

<https://www.foragetesting.org/lab-procedures/appendix/appendixE.htm>

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