National Forage Testing Association Reference Method

NFTA Method 1.0 Sample Size and Splitting Samples

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Introduction

This procedure is intended as a sample preparatory step prior to further analysis.

Scope

This procedure is applicable for hay, haylage and fresh samples in all types of forages.

Basic Principle

A minimum sample size to grind is recommended. Larger samples must be thoroughly mixed before subsampling.

Equipment

Wax paper or similar non-static, flexible sheet of material, 18 x 18 inches or larger.

Safety Precautions

- Subsampling should be done in a well ventilated area.
- Laboratory personnel should use a dust mask.

Procedure

1. It is recommended that all forage testing laboratories grind at least **75 g of sample** of hay or equivalent dry matter of silage for analysis. This is approximately the amount of dry hay core sample that will fit in a sandwich-sized baggie (about 1 cup).

2. If the sample is larger than 75 g (13% dry matter), it should be chopped to be less than 1 inch particles (6 mm grind is preferred). Chopped haylage (or silage) and hay samples taken by hay corers are adequate without further grinding.

3. Then subdivide the sample as follows:
   a) Place sample in the middle of the 18 x 18 inch (or larger) waxed paper.

   b) Mix the sample by pulling the corners of the mixing paper diagonally over the sample from one corner to its opposite. Turn the paper to the next corner (one-quarter turn) and repeat for at least 8 corners. You will notice that the sample will have a more uniform color and texture as you mix it. If sample does not appear to have uniform color and texture to your eye by 8 rolls, mix it additional times.

   c) Divide the pile of sample into quarters using a ruler or similar straight edge tool.

   d) Grind the quarter sample (assuming it is 75 g or less) and save the remainder.

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Comments:

- You cannot mix too much!

Quality Control:

New personnel (always) and other laboratory personal (periodically) should take several sets of two subsamples for analysis by NIR of each forage type analyzed. Calculate a standard deviation of subsampling error. The standard deviation of the multiple subsamples should be plotted for each person doing subsampling.