

Researchers urge vigorous methods....

Proper Sampling Methods Improve Accuracy of Lab Testing

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Hay sampling is probably the most important aspect of forage quality testing.

Think for a moment about what samplers must do: A pinky-sized ground-up sample the lab analyzes must represent tons and tons of alfalfa hay from the field. The sample must fairly represent the leaf/stem ratio, which varies throughout the bale, as well as the weed composition of the hay, which varies considerably across the field. Protein and Fiber of leaves and stems are very different. Therefore, it is important to follow a definite protocol in hay sampling.

Whether the sample accurately represents a stack is the responsibility of the sampler. The lab can only test the sample presented to them! Many disputes about hay testing can be attributed to differences in sampling method.

The principle is to obtain a representative and randomly-chosen sample. Each core should represent that bale, and enough cores taken to represent the stack. Never present an un-cored sample to a lab (eg. a flake).

Here are some important steps and guidelines for taking samples of alfalfa hay:

Steps for Good Sampling Methods

Identify a single lot of hay- Lots must be from the same cutting, variety, field, stage of maturity and harvested within 48 hours. Do not mix lots. A lot must not exceed 150-200 tons. If you have known sources of differences, separate into different lots.

Choose a good, sharp coring device. The coring device should have an inside diameter of the cutting edge at least 3/8 inch and no more than 5/8 inch. The cutting edge should be at right angles to the shaft, and kept sharp. Dull probes will cause material to be pushed out of the core. Do not use an open auger or corkscrew type device, which selectively samples leaf or stem parts.

Sample at random. Walk around the entire stack and sample bales at various heights, to the best of your ability. Do not avoid some bales or choose others; sample at random. Try to obtain cores from as broad a group of bales as possible within the stack.

Take enough cores. Per lot, sample a minimum of 20 bales (one core per bale). Take more cores (20-40) in larger lots or if the hay is very variable.

Use good technique. Probe the ends of bales near the center, and at least 12-18 inches into the bale.

Probe should be at right angles to the bale end. Do not slant the probe, or sample from the sides.

Handle samples correctly. Combine cored samples into a single sample and store them in a sealed polyethylene freezer bag. Do not expose to heat or direct sun, and send to the lab as soon as possible.

Not too big, not too small. The sample should weigh about 1/2 lb. (200 grams). If you obtain greater than this amount, your probe may be too large in diameter; many labs will not grind a large sample, which defeats the purpose of careful sampling. Too small a sample will not represent the hay lot.

Split samples correctly. If you want to test the performance of a lab, send a fully ground and mixed sample to another lab, never split an unground sample. Reputable labs will return your ground sample for further testing, if you wish.

Research has shown that if these simple guidelines are followed, representative samples and reliable results can be obtained, even using different probes or people. However, a minium of +/-0.5% variation in results is normal and should be expected.