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## **A Lesson in Forage-Quality For Us Today and Our Youth Tomorrow**

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Forage quality is crucial to good animal performance, especially for animals with high nutrient requirements. The final test of hay quality is animal performance. Hay quality should be a major concern of anyone growing, feeding, buying, or selling the forage. Factors that have influence on hay quality include species, variety, growing conditions, soil fertility, pests, harvest technique, curing, handling and storage. However, the most important factor in hay quality, the one you can have the most impact on, is stage of maturity at harvest.

As forage plants move through their life cycles from vegetative stages to reproductive stages, the makeup of the plants nutrients changes. As these plants mature, protein, digestibility, energy and palatability decrease. At the same time fiber content and lignin increase. Hay harvested at the proper time makes better hay because it contains more nutrients and is more palatable to livestock. The proper harvest time is a compromise between quality and yield.

Evaluating hay quality is a very important management tool. Many methods are available to the producer for evaluating the hay crop, including visual, chemical, NIRS (near infrared reflective spectroscopy) and animal performance.

Visual appraisal is the oldest and most commonly used method. Visual inspection would also include odor and texture of the hay. In making a visual appraisal, one would examine the color, leafiness, insect damage, maturity and the presence of foreign matter such as weeds or mold. No two people tend to evaluate hay in the same way, it is highly subjective to the individual. The color, smell and texture of the hay may not tell the whole story relating to overall quality. Color can be misleading as a bright colored hay may be very stemmy and mature, while another higher quality hay may have faded.

The best and most precise way to evaluate hay is through laboratory analysis. If a representative sample is analyzed for nutrient content, the results can be valuable to the user, buyer or seller of the hay. These results allow the end user to best match hay quality to the needs of the animals that will consume it. One can also determine the supplementation level, if any is needed, to get the desired level of animal performance. This will allow the user to develop an efficient and economical feeding program. Sampling for a forage quality analysis is a most important procedure if the results obtained are to be meaningful. When hay is

tested, a random and representative sample must be taken, as the results are only as good as the sample. Each lot of hay should be sampled. A "lot" is a portion of hay that was grown in the same place, harvested under the same conditions, and stored in the same way. A minimum of 15 to 20 probes should be taken, mixed together and a test sample taken.

Several counties in Southern Indiana have used the 4-H Hay project to promote forage analysis and its results to improve forage utilization and marketing. Dubois, Spencer and Warrick counties have used laboratory analysis as the basis for evaluating 4-Hers hay exhibits and awarding ribbons. In the past seven years approximately 350 samples have undergone lab analysis in this program. 4-H members and their parents have used this information to best utilize their hay with the appropriate animal group, balance rations and determine hay value for sale. This program has provided a learning experience for both the 4-H member and their parents in developing both efficient and economic production and utilization methods for their forage resources.

**References:**

**AY-260 Forage Testing - Why, How and Where  
Minimizing Losses in Hay Storage and Feeding**