



WHICH MOISTURE SHOULD I CHECK BEFORE BALING HAY: DEW MOISTURE OR STEM MOISTURE?

KEY CONCLUSIONS

- *Collect representative samples of forage from the windrow and use a proven method for properly measuring hay moisture before baling.*
- *Fresh forage continues to respire after cutting due to continued cell respiration and microbial activity, releasing heat and moisture.*
- *A premium quality hay preservative such as Fresh CUT® brand Plus allows baling at higher moisture with low risk in order to retain more leaves and provide higher feeding value.*

OVERVIEW

We regularly get questions from producers who use Fresh CUT® brand Plus hay preservative from Kemin about how to accurately determine the moisture level in their alfalfa hay **during that last stretch of drying** before baling. Those questions sometimes involve whether to measure **dew moisture** or **stem moisture**.

For producers who still dry their hay down the traditional way (to around 12% moisture), that's not a problem. But for those who want to bale at higher moistures (up to 26%) in order to retain more leaves where protein resides, have more pliable stems for better palatability, and produce good, green color dairy-quality hay, knowing the moisture content is crucial.

Dew versus stem moisture

In our opinion and the opinion of experts in the field, the answer is that you should pay most attention to stem moisture – the moisture in the plant itself. The mistake producers often make is to take moisture readings too early in the morning so that dew left on the windrow from the previous night has not had a chance to evaporate. It will usually be gone by mid-morning. So measuring too early can give you a false moisture reading.

We believe stem moisture is the best measurement when monitoring the drying progress for raking, tedding, before baling, and in the stack. Several self-testing methods are available to determine hay moisture accurately. Those include microwave or convection oven tests that are easily found on the Internet. Other commercially-produced testing methods such as electronic moisture meters are also available. Follow the manufacturers' directions for calibration and use.

All of the recommended heating methods should evaporate the dew moisture in the first few minutes of cooking, thereby giving you a good idea of the true moisture in the plant when the test is completed. Be sure to pay close attention to using a representative sample of the plant material you want to bale by collecting from several locations in the windrow.

For reference, you might want to read the article cited below, in which Shewmaker and Thaemert¹ summarized the issue and offered suggestions that producers will find helpful.

Conclusions

No matter which testing method you choose, the important measurement is the moisture that will ultimately be trapped in the bale, which is mostly the moisture contained inside the plant itself. Microbes that exist on and in the plant material will utilize any available source of moisture to multiply, respire and cause heating.



That's where it pays to use a premium hay preservative such as Fresh CUT Plus. Fresh CUT Plus acts to stop plant cell respiration and kill molds and other spoilage organisms that exist on plant material. Using Fresh CUT Plus to allow higher moisture baling helps retain leaves and control heating that can lead to damaged hay. Careful attention to sampling, together with following the correct procedure for whichever testing process you choose and using a quality preservative, are most important to ensuring that you can put up and safely store good, stable and properly treated hay.

¹ G. Shewmaker, Univ. of Idaho Twin Falls R&E Center, P.O. Box 1827, Twin Falls, ID 83303-1827. R. Thaemert, Blaine County Extension Office, 302 1st Ave. South, Hailey, ID 83333. Email: gshew@uidaho.edu; thaemert@uidaho.edu. In: Proceedings, National Alfalfa Symposium, 13-5 December, 2004, San Diego, CA, UC Cooperative Extension, University of California, Davis 95616. (See <http://alfalfa.ucdavis.edu> for this and other proceedings).