Tally Time – Measure hay quality and quantity for most efficient use

Sandy Johnson, livestock specialist

"You can't manage what you don't measure."

Kansas producers have been busy putting up silage and baling hay. Abundant rainfall in much of the state this year has made making hay challenging but also improved volume of hay supplies. Both of these factors, in addition to prices of other commodities, will influence how best to use these forages this year.

Expect that forage that was rained on in the windrow to have lower energy values from the leaching of soluble carbohydrates. If forage was baled when moisture content was too high, heating could result in damaged protein. If this occurred, make sure your forage analysis includes heat damaged protein which is largely unavailable to the animal. In some cases, forage may have become more mature than desired before harvest as producers waited for better haying weather. Both protein and energy will decline as the plant matures. All of these factors point to very little hay in the "average" category this year and forage quality may vary widely. The bottom line is that forage testing before feeding will be very important to achieving desired performance. Obtaining representative samples and having the forage tested helps producers ensure they meet the animal's nutrient requirements in the most efficient manner.

Obtain forage samples for testing from each field and cutting. As bales are moved from the field for storage, retain the identity of each forage group (field and cutting). Spray paint or surveyors ribbons attached to the twine or netting are some options to mark lots. This segregation is very important in situations where a single forage is a large proportion of a given diet and/or high nitrates may occur. Additionally, segregating forages based on cutting and quality makes it easier to reserve higher quality forages for animals with the greatest nutrient requirements, such as lactating cows. While in most areas of the state nitrates are less likely to be an issue this year, including a nitrate test for forages in the sorghum family is cheap insurance since fertility imbalance can also cause high nitrates. Build a forage inventory record that includes the amount of forage and the forage analysis.

The improved forage supply situation this year has made alfalfa a competitor for the lowest cost source of crude protein (cost per pound of crude protein, dry basis). In the past several years, distillers grains have often been one of the lowest cost sources of protein and that will likely continue. If the cost of protein delivered to the animal from these two sources is similar then there are several other considerations to take into account. Energy concentration of the distillers grains is higher than even in the best alfalfa so it has an advantage if additional energy is needed. The higher concentration of protein in distillers grains may be an advantage in some feeding situations. While protein does not need to be fed every day, depending on the total amount of crude protein needed, the frequency of feeding may need to be more often for alfalfa than distillers grains because of the volume. Phosphorus is the most expensive macro mineral to provide and the relatively high content in distillers grains would reduce what was required from the mineral. A tool is available to help evaluate these different supplement characteristics called SUPPCOST. A link to the Excel based tool can be found under the Quick Links on the right hand column of the KSUBeef.org website or on AgManager.info.

The availability of forages this year is a pleasant change for producers who have experienced various degrees of drought the past several years. Quality may be variable but something to feed is always better than nothing. Feed costs still represent the largest portion of production costs so wise use of hay by testing for nutrient content is warranted. In some cases alfalfa may be the lowest cost protein supplement. Table 1 shows the cost per pound of crude protein on a dry basis for alfalfa hay with crude protein values from 14 to 20% . This can be compared to the values in Table 2 which show cost per pound of crude protein of Dried Distillers grains (32% CP, dry basis and 90% dry matter) at various prices.

Table 1. Cost per pound of crude protein, dry matter basis for various protein levels of alfalfa (90% dry matter).

	Crude protein, %, dry basis			
Alfalfa $/ton	14	16	18	20
60	$ 0.24	$ 0.21	$ 0.19	$ 0.17
80	$ 0.32	$ 0.28	$ 0.14	$ 0.22
100	$ 0.40	$ 0.35	$ 0.31	$ 0.28
120	$ 0.48	$ 0.42	$ 0.37	$ 0.33
140	$ 0.56	$ 0.49	$ 0.43	$ 0.39

Table 2. Cost per pound of crude protein (CP), dry matter basis for Dried Distillers Grains (DDG, 32% CP, 90% DM).

DDG, $/ton	$/lb CP, dry basis
110	$ 0.19
130	$ 0.23
150	$ 0.26
170	$ 0.30
190	$ 0.33