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## Forage Maturity Impacts Hay Quality By Gene Schmitz, MU Extension Livestock Specialist

The 2012 growing season is off to a fast start. Forages are maturing at a rapid rate, so a discussion of harvest timing and hay quality relative to plant maturity is in order. I recently read an article discussing the results of a hay quality survey conducted by Iowa State University in 2010 and thought it might be appropriate to review their findings.

Their data was summarized from a total of 465 forage samples submitted by Iowa producers to a common commercial laboratory during 2010. Maturity for cool-season grasses was described as pre-boot, boot, dough, and dry/dead seed heads. Mixed forage contained both legumes and cool-season grasses and maturities were classified as bud, early flower, late flower, and seed/dough.

When comparing grass maturities, hay harvested in the boot stage was 4 percent higher in energy and 18 percent higher in protein than hay harvested at the dry/dead seed head stage. Mixed grass/legume hay harvested in the early flower stage was 11 percent higher in energy and 23 percent higher in protein than hay harvested in the seed/dough stage. At similar stages of maturity, legume mixed hay had higher energy and higher protein levels than straight grass hay. These results are not surprising and are similar to results of hay samples I have received over several years.

I took the Iowa data and ran some winter feeding rations for mature beef cows being fed a maintenance diet for the last 1/3 of gestation. Forage maturity levels used in the calculations for grass hay were boot or dry/dead. Mixed legume maturities were early flower or seed/dough. Protein levels were adequate for all four forage types and maturities. Energy was low for all hay types. For this reason, I used either soybean hulls or corn grain to supply the needed energy to the diets.

For a herd of 35 head of cows being fed hay for 120 days, mature grass hay required feeding 37.5 bushel more corn or 2.1 tons more soyhulls to meet the energy needs of the herd compared to grass hay harvested at the boot stage. Mature legume mixed hay required feeding 187.5 more bushels of corn or 6.3 tons more soyhulls to meet herd energy needs compared to hay harvested in the early flower stage.

The Iowa data also showed that rain had less impact on hay quality than did stage of maturity at harvest. While it can be difficult to harvest hay at early stages of maturity, it is still a viable goal to shoot for due to the reduced need for winter supplementation. If you have more questions on this topic, you can contact me at the Extension Center in Warsaw at (660) 438-5012. University of Missouri Extension is an equal opportunity / ADA institution.