

Hay Feeding

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Feeding hay to cattle is expensive. Recent analyses show that hay costs between \$0.05 and \$0.09 per pound of dry matter; usually more than double the cost for the same amount of nutrients from pasture. Hay is expensive because:

- ? It requires a large investment in equipment
- ? It requires labor to make and feed
- ? More than 50 percent of the hay is wasted by either poor storage methods or improper feeding practices, or both.

No matter how hay is packaged, if you waste it, you lose money.

In this area drought has been followed by a year of above average rain fall. Therefore, pastures grew more rapidly this year and the grass contained more water than usual in many cases. The cows and calves grazing this grass may not perform as well as expected since the grass had lower dry matter and higher moisture. Cows and calves had to consume more of the growing grass to attain the dry matter intake for the expected performance. Depending on the fertilization practice and the amount of fertilization care over for improved grasses the nutrient density on a dry matter basis might have been less compared to a normal year. If the cows and calves could not consume the amount dry matter for the expected performance, the cows may have produced less milk and the calves may not be able to consume the amount of dry matter necessary for good growth. The differences in expected performance and actual performance are many times minimal but nevertheless bothersome.

Hay produced from this grass is approximately 88 % dry matter in the field before baling, but in abundant raining years the hay may be rained on and take longer to dry before baled as hay. Dry matter losses are increased when the hay has been cut and has had rain before is baled. These dry matter losses hay is from plant respiration (the continuation of normal plant processes), microbial activity and the deterioration from weather. At higher moisture levels above 20 % mold growth maybe visibly detected. When mold growth is detected then dry matter losses are greater. Significant levels of heating can occur from microbial activity and lower the dry matter content of the hay. If the hay was baled with normal moisture, the hay will reach a peak temperature in 5 to 7 days. However, as higher moistures particularly above 20 %, peak temperature may not be reached in 3 or 4 weeks.

Losses of dry matter will occur due to the hay feeding methods. Some practices that can minimize wastage are

- ? Feed hay in small amounts or in a feeder to minimize waste, when fed limited amount of hay at a time, cattle have less opportunity to trample and soil the hay. Feeding hay in a rack or a hay ring also limits the opportunity that cattle have to trample or soil the hay.
- ? Feed hay in a well drained area, if hay is fed in a single location all winter, then providing a footing such as gravel or a hard surface that minimizes mud will reduce hay feeding losses. Another more cost effective method to consider is to move the hay feeding area in different locations to minimize the damage that can occur to any one area of the pasture.

- ? Feed hay stored outside the barn before hay stored in the barn. Hay stored outside usually has more spoilage during storage and lower palatability than hay stored inside. Cattle will waste a greater percentage of poor quality hay than good quality hay. Cattle fed high quality early in the season will often refuse poor quality hay when offered later in the season.

Table 1 shows the expected losses when fed with or without feeders.

Table 1 Expected wastage when hay is fed by different systems.

Bale type	With Feeders		Without Feeders	
	1-day supply	7-day supply	1-day supply	7-day supply
Small square bales	3.9 %	4.1 %	6.7 %	
Large round or square bales	4.9 %	5.4 %	12.3 % *	43.0 % *
Small round bales (fed in place on pasture)			10.0 %	30.0 %

*Bales spread or unrolled across pasture

Large bale systems are designed to minimize labor, not waste. It is important to remember that outside storage of large bales will increase hay losses due to weather-related spoilage. Spoiled, rotted, or moldy hay is often refused by all but the hungriest of cattle and will result in more waste during feeding.

To utilize the hay that has been produced on the farm or purchased, a chemical analysis should be performed. The analysis can be done through the Extension Service, many feed companies offer this service and/or private laboratories. The hay analysis allows better supplementation practices during the winter.

Summary

Droughts tended to have 5 to 6 year cycles and sometime during the cycle there is usually one year that will be above the normal rain fall. As another year is upon us it is difficult to predict the amount of rain that might be available next year. However, we might expect another dry year or two.

Hay production during dry years, if not too dry is less likely to have dry matter losses after the hay has been cut. Hay production in wetter years has a greater chance to have dry matter losses and care should be taken to prevent these losses. Irrespective of the type of year that the hay is produced a representative sample should be analyzed to best utilize the hay that has been produced in any year.

No matter what size hay package or feeding style is used, some hay will be lost or wasted. Proper feeding management minimizes these losses. Since hay is one of the most expensive feed used on beef operations, it makes sense to try to keep waste as low as possible through good management practices.