

Community

Protecting hay significantly reduces waste



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County Extension News

With hay season in full swing, it's a common sight to see freshly cut hay laid down or newly rolled up round bales all over Baxter County and northern Arkansas and southern Missouri.

As many farmers know, that hay is a vital, valuable part of getting a cow herd through the winter when there's simply not enough forage dry matter being produced to provide what a cow needs on a daily basis.

There are plenty of ways to extend that grazing season to avoid having to feed hay, but that often means management that is more intensive and reduced stocking rates. The fact remains that quality hay production is critical to Baxter County beef cattle farmers.

With those little round bales, buffet bundles playing such an important part in the production process, it only makes sense to ensure that they retain that value and quality until it's time to feed them. That's where a hay barn comes into play. It's been said that a quality hay barn will more than pay for itself. That's true, and here's the proof.

First, something must be understood about a bale of hay. It's essentially a ball of energy in the form of carbohydrates. Some of those carbohydrates, such as starch and sugars are much more digestible than those fibers that provided the structural support for the plant. These include cellulose, hemicellulose and lignin.

However, don't get too caught up in all that. Just understand that within that hay bale, there are parts that are more digestible than others. The more a plant matures and produces a seedhead, the more that ratio starts to shift more in favor of the structural, less digestible fibers. That's why hay is better quality and more digestible the earlier it is cut in the maturity of the plant. Leaves have more starch and sugars than stems.

So, what about the barn and why does it matter? The carbohydrates that provide the energy, caloric value to the cow are mostly water-soluble. Meaning, they go where the water goes. Hay that is stored unprotected from rainfall loses that energy much more quickly than that stored in the barn. Essentially, what is left are those structural, poorly digested plant fibers.

Unprotected hay is less palatable, so intake is often reduced. Mold growth can also be a huge problem. If a farmer has ever witnessed a cow herd eating a barn stored bale versus one that's been left outside to weather, it's painfully obvious just how much of that weathered bale is



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wasted.

Not only are nutrients lost, but actual consumable dry matter is lost as well. Research indicates dry matter losses of around 23 percent for a plastic mesh wrapped bale that is stored outside, and half of that is due to soil contact. And that's being generous. Some studies estimate losses as high as 30-40 percent. If those bales could get up off the ground, the losses would be reduced closer to that of a barn-stored bale.

So, consider this. An 800-pound bale (90 percent DM) stored outside, will lose around 165 pounds of dry matter that is not recoverable. Or, look at it this way. One out of every five bales is a total loss due to weathering/losses. That same bale stored inside will lose around 6 percent of its dry matter. That's a loss of only 43 pounds of dry matter, or one bale out of roughly every 17 is lost.

From a cost standpoint, let's say that bale is valued at \$40. It's a tight, quality bermudagrass bale. The unprotected bale is losing around \$9 per bale because

of how it's stored. The protected bale is losing approximately \$2.50 per bale. That's a difference of \$6.50 per bale. Throw out a pole barn cost of, say, \$10,000. It only takes the losses on roughly 1,500 bales to justify that barn expense. On a moderate production, 60-acre hayfield, that's less than two seasons of hay cutting. Just some cattle food for thought.

Of course, barns don't fit everyone's needs or situation. Tarped hay, pallets, using plastic wrap, or a good gravel base are all good options for reducing storage waste.

For more information on this or other horticulture and garden production or problems contact the University of Arkansas Division of Agriculture Cooperative Extension office at (870) 425-2335.