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Storing Hay

Winter gets closer every day, whether we like it or not and for many of us, with cattle, that means feeding hay. Feed costs are often one of the top costs in cattle operations, so being as efficient with hay as possible is important. This can come in many forms, from not over feeding to preventing waste from the cow. However, even before the hay gets to the cow, loss during storage can be a significant part of overall hay loss.

Even before storing, producers can give hay a better chance to make it from the field to the cow with as little loss as possible. Baling at correct moisture levels will lead to proper curing without additional heat, mold growth, and dry matter loss. Bales should maintain moisture levels below 20% for this to happen.

Beyond proper moisture, the physical nature of a bale can provide protection against storage loss. Round bales with curved sides and layers running with the curve repel moisture better than square bales. Packing bales densely will also impact the amount of moisture able to enter the bale.

The materials used to wrap hay also protect against storage loss. Materials that keep bales held together tightly will be more effective at keeping moisture out. Plastic sleeves and net wrap keep bales together better and may physically block water from entering the bale when compared to similar twine wrapped bales.

Storing hay inside is the best option for both round and square bales to minimize storage loss. This is not always possible and is much more cost effective for square bales. Weathering is more detrimental to square bales and more tonnage can be stored in a given area inside.

Most of the dry matter loss in a bale will occur in the first several months of storage. Even under the best conditions, hay stored inside can lose 2-8% dry matter if stored for extended periods of time. For storage under 9 months, losses should be less than 2%. The dry matter loss for large round bales stored outside can range from 5-25% depending on the climate.

When storing outside, large round bales are the best option. Here are a few steps to take that can help minimize hay loss.

Keep the base dry. Moisture can enter the bale from the ground as well as the sky. Placing bales on old tires, crushed rock, concrete, pallets, railroad ties, or other method to elevate the bales is recommended. This will reduce water from infiltrating the bale and will aid in drying out bales that become wet.

Bales under a tarp can see similar storage conditions to those in a shed if done correctly. Keep bales off the ground to prevent moisture wicking up. Stacking or pyramiding bales will allow more bales to go under a smaller amount of tarp, making the process more economical.

Storing bales end to end very tightly minimizes the exposure of the open bale face to the elements. Leave at least 3 feet of space between rows for airflow. If it is not feasible to store end to end in a row, allow at least 18 inches between individual bales to allow airflow. A study performed with prairie hay in South Dakota showed hay stored for one year end to end had 1% dry matter loss, individually stored had 4% loss, and pyramid storage had 10% loss in dry matter.

Rows of round bales should be placed with the slope in yards where grade is a factor. This prevents moisture from pooling around the bale base. If storing round bales on flat ground, orient bales north to south. This will allow the majority of the bale at least some sunlight during the day, especially in winter when the sun is low in the sky. Additionally, this aligns bales closely with prevailing winter winds to reduce added moisture from drifted snow.

Don't store under trees. Bales need to dry out if they become wet and trees will not assist in this process because they block sunlight and airflow. (Shelterbelts are designed to reduce wind!).

The type of forage being stored will determine what storage method should be considered. Alfalfa is much more valuable and damage will be more costly than grass hays when being stored. Other forages that are difficult to form a tight bale, such as sudangrass and millets, are highly susceptible to moisture penetration.

No matter the type of forage, a tight, well-made bale is the best way to reduce the risk of storage loss. Dry matter loss occurs mostly early in storage. Besides storing inside, a single row of bales end to end, provides one of the best storage methods. Selling hay as early as possible can reduce the need for better storage. Keeping the hay tight and storing it right will allow the hay to stay in good condition, making it more valuable.

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