



## What Are Haylage and Baleage for Cattle?

By Megan Van Emon

PHOTO CREDIT: MARKO MANOUKIAN

Bales are wrapped with 6 layers of 1mil plastic to provide proper fermentation and a stable product.

*Montana's last mild summer with more regular rainfall has led producers to investigate feed alternatives. When there is little time between rain events to put up quality hay, some producers have begun to consider haylage and baleage as alternative feed to dry hay.*

**H**aylage is hay that is chopped and packed within a silo or bunker to complete the silage, or fermentation, process. The key steps for ensiling hay are similar to silage. Storage maintenance is the most important factor in creating a quality product for cattle. Haylage and baleage do not need to completely cure, they only need to wilt to 35–55% dry matter. Feed quality of ensiled forage is directly related to when the forage was harvested. Proper packing of the forage aids in the fermentation process and reduces the ability to allow oxygen to cause spoilage.

Baleage is created by baling partially dried hay and wrapping the bales in plastic. If you are considering baleage, there is added cost with a bale wrapper and the plastic needed. Previous work has suggested that when bales contain 40–60% moisture, a minimum of 6 layers of 1 mil plastic are needed, and reducing the chances of puncturing the plastic wrap aids in providing proper fermentation and creating a stable product.

Proper moisture content provides the fermentation bacteria a better opportunity to complete the fermentation process. Dry forage does not provide sufficient moisture for bacteria in fermentation, but can lead to fungal growth, which will reduce feed quality. Additionally, mature forages have less fermentable carbohydrates, which do not allow for proper fermentation.

Moving bales after wrapping them in plastic also requires special care. Equipment may puncture or spear the plastic, creating opportunities for air to enter the bale and cause spoilage. Bale density can also play a role in spoilage. Dense, tightly wrapped bales are less likely to spoil compared to bales with lower density.

Ensiling takes 2–6 weeks to complete, if properly packed. When feeding baleage or haylage, only expose the forage enough to feed in 1–2 days. If baleage or haylage has been exposed to oxygen during the fermentation stage, it is recommend to have a sample submitted to determine mold growth and screen for potential mycotoxins.





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If the forage was harvested and packed at the proper moisture level, this product can be a great alternative to feeding dry hay. Haylage and baleage quality are highly dependent on plant stage at harvest. Quality is relatively similar to dry hay, as forages mature, quality decreases and quantity increases. According to the *'Nutrient Requirements of Beef Cattle,'* alfalfa haylage is approximately 41% dry matter, 63% total digestible nutrients, and 20% crude protein.

Length of cut can impact storage and feed digestibility. Optimal chopped length for haylage would be 3/8-inch with about 20% of the particles being longer than 1.5 inches. Chopping forages to smaller lengths results in increased passage rate, reduced rumination, and could potentially cause acidosis.

Grass silage is also a possibility for areas that receive excessive rain. Allowing grass to wilt to 65–72% moisture and chopping at 1/4-inch to 3/8-inch length is crucial for proper packing. Grass silage is ideally cut when the first stems begin to head out. Use caution that grass silage is not packed too wet, as it can lead to higher pH. Also, a secondary clostridial fermentation can lead to a foul odor and may increase protein breakdown.

Baleage may be an option if haylage is not. Baleage product is an excellent forage source for livestock, but cost and lack of baleage equipment can be deterrents. Baleage reduces the curing time for harvest and baling, reduces labor and handling costs when curing dry hay, and the potential for increased leaf retention within the bale leads to increased quality.

Disadvantages to baleage are the increased cost of harvesting and baling due to special equipment and supplies needed, and disposal of the plastic wrap. Haylage has an increased chance of spoilage, and maintaining plastic wrap integrity after baling and during bale transportation can be difficult.

Feeding baleage is similar to feeding large round bales to livestock. Rolling baleage on the ground has similar losses to dry hay, approximately 50%. Livestock should consume a freshly unwrapped bale within 1–2 days. Once the bale is exposed to oxygen, spoilage may occur, which will result in an intake reduction.

Baleage and haylage may be good alternatives to dry hay, especially in wet years in Montana. The quality of ensiled forage is only as good as how it was stored, so ensuring proper storage will aid in maintaining quality. ■

**LEFT: Forage is loaded into a pit, ready to ensile. RIGHT: Chopped corn ready to be ensiled.**

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