

Round Bale Haylage: A Smart Choice for Wet Springs

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Making the Most of a Wet Spring

In Tennessee, most pastures and hayfields are planted with cool-season grasses—especially tall fescue. This grass really takes off growing in the spring, which can be both a blessing and a challenge. While the abundant growth provides plenty of forage, the spring months also tend to bring frequent rains (late spring, early summer). For livestock producers, this creates a tough situation. On one hand, the rain helps the grass grow thick and fast; on the other hand, it is hard to find enough consecutive dry days to cut and cure hay properly.

When hay can't dry out fully in the field, it loses nutrients fast—and if it gets rained on after cutting, it can mold, spoil or become downright unusable. In wetter-than-usual years, it can feel like you're always chasing a dry weather window that never quite comes. That's where high-moisture forage options, such as haylage, can really save the day. By baling the forage at higher moisture and wrapping it in plastic, you can capture the nutrition when the grass is at its best, without waiting for several days of sunshine. For many Tennessee farmers, especially with our typical spring weather, switching some hay production over to haylage can mean better feed and less worry.



Figure 1. Haylage stored in the field (Photo: Bruno Pedreira)

Harvest Timing Still Matters

Even in wet springs, timing remains critical. Forages reach their highest nutritional value just before or at the boot stage. Delaying harvest to wait for a dry window may reduce quality as plants become more fibrous. Monitoring growth stages instead of the calendar helps ensure that the harvested forage meets your herd's nutritional needs.

Why Haylage Is a Smart Option in Wet Springs

Haylage is ideal for wet springs when traditional hay curing isn't feasible. It allows producers to capture quality forage with minimal weather risk. This method involves wilting forage to 40 percent to 60 percent moisture, baling tightly and wrapping in several layers of plastic to ferment anaerobically (Figure 1).

Understanding the Fermentation Process

During fermentation, bacteria use carbohydrates found in the forage and produce lactic acid. The lactic acid causes the pH to drop, eventually to a level at which microbial activity stops and the forage can be safely stored for an extended period. Fermentation is an anaerobic process, meaning it requires an oxygen-free environment. Right after baling, some oxygen is still trapped in the bale. Fermentation does not fully begin until that oxygen is used up. During those first few days, plant cells continue to respire, and other microbes consume the remaining oxygen. Once oxygen is depleted, the proper fermentation process can take place. The amount of lactic acid needed to lower the pH will be directly proportional to the amount of moisture in the forage crop. Higher moisture content will require more lactic acid to lower the pH to a stable level. On the other hand, low moisture can also limit proper fermentation.

Managing Moisture Before Baling

Most forage crops require wilting to drop the moisture content before they can be baled and wrapped. In most cases, it only takes 1–2 days to dry forage down to the right moisture level for haylage (depending on the weather, it might be even shorter), compared to 3–5 days to dry it enough for hay. That difference becomes critical when there isn't a reliable 4–5-day drying window in the weather forecast.

Key Points for Successful Haylage Production

- **Cut at the right maturity:** Haylage quality cannot be better than the forage at the time it is cut. From that point on, handling only increases leaf loss and lowers quality. Do not delay harvest—cut at or before boot stage to capture high-quality forage. The shorter drying time required for haylage makes it easier to harvest on time. Preserving forages with low nutritive value does not change the nutritive value, meaning junk in, junk out.
- **Wilt to about 50 percent moisture:** Haylage can ferment well over a wide moisture range. Research has shown good results between 40 percent to 60 percent moisture. A good target is about 50 percent moisture. Early bales may be wetter and later bales drier but staying within the 40 percent to 60 percent range will usually result in stable, well-fermented haylage. To properly determine moisture content, it is advisable to use an in-row moisture meter rather than a bale probe moisture meter. Wear protective clothing such as light-colored long-sleeved shirts and long pants when in areas where ticks are active. The light colors make it easier to see ticks and remove them.
- **Wrap as soon as possible after baling:** Wrap bales within a few hours of baling. Quick wrapping reduces heat loss and allows fermentation to begin sooner, helping preserve quality. Do not cut more than you can wrap in the stipulated time.
- **Bale tightly using a high-density baler:** The bacteria that produce lactic acid only work in an oxygen-free environment. After wrapping, regularly inspect bales for holes or tears. Seal any damage immediately with heavy-duty tape made for silage wrap. Even small holes allow oxygen and small animals to enter the bale, leading to spoilage in the area surrounding the damage and to feed contamination over time, respectively. Since bales have a higher moisture content, they are heavier, so make smaller bales that are easier to handle.
- **Wrap with 5–6 layers of plastic immediately after baling:** In haylage, plastic wrap replaces the silo by keeping oxygen out. Using at least four layers of plastic helps ensure good fermentation and reduces the risk of spoilage. Although research has shown that four layers are sufficient to produce high-quality haylage, six or more layers are recommended to ensure good fermentation and an additional safety margin against potential issues. It can work well for individually wrapped (single) bales or for in-line tube wrapping; however, extra attention should be given to the tube ends, which are more vulnerable to spoilage.

Storage and Handling Considerations

High-moisture bales are heavier and more delicate. Plan storage away from areas frequented by wildlife and ensure it is on well-drained ground. Periodically check the plastic wrap for punctures or holes. If you find any, seal them immediately with strong, thick silage wrap tape. Since haylage cannot be moved easily once wrapped, plan your feeding logistics ahead of time. Also, remember to dispose of used plastic properly to avoid environmental hazards and livestock exposure.

Assessing Baleage Fermentation

It is important to allow adequate fermentation time before feeding out baleage. After wrapping, bales should ferment for four to six weeks to ensure stable preservation. Opening bales too soon can result in poor fermentation, reduced forage quality and high losses. Well-fermented baleage should have a pleasant, sweet-sour aroma similar to that of fermented pickles or silage. In contrast, poor fermentation is often indicated by strong, unpleasant odors such as rancid, rotten or putrid smells, which may signal the presence of spoilage organisms or excessive butyric acid.

Summary: Turning Rain into Opportunity

Wet springs don't have to mean poor-quality winter forage. By adapting to the conditions and using haylage strategically, you can preserve high-quality feed and reduce dependency on costly supplements later. A proactive approach now ensures that your herd stays well-fed through the winter.

Steps for Making Effective Haylage:

- Cut forage at the correct maturity stage
- Wilt to 40 percent to 60 percent moisture
- Bale tightly using a high-density baler
- Wrap with 5–6 layers of plastic immediately after baling
- Inspect bales for holes and patch them quickly to prevent spoilage, small animals nesting and contamination of feed

Note: Test Haylage Before Feeding

Before feeding haylage, it is important to collect a representative sample and send it to a forage testing laboratory. Fermentation, moisture level and harvest timing can all affect nutrient content. A lab analysis will tell you the actual protein, energy, fiber and mineral levels in the haylage. Knowing the true nutritive value allows you to properly balance rations and adjust supplementation to meet your livestock's performance goals, whether that is maintenance, growth or lactation. Consulting your county Extension agent can help ensure you use the proper sampling method and interpret the results correctly before making feeding decisions. Also, make sure to take the moisture level into consideration when estimating feed demand and livestock needs.



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