

Baleage and Beef Cattle

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This article starts a new series called “Renewed and Revisited”. We will review several concepts that are “new again” or of renewed interest as we go throughout the rest of the year. Recently, there has been an increasing interest in baleage among southeastern cattlemen. The following are some frequently asked questions when it comes to using baleage in beef cattle operations:

What is baleage?

Haylage and baleage are terms often used interchangeably. Haylage is defined as harvested forage ensiled at 40 to 60% moisture (Allen et al., 2011), with the target being 50%. Dry hay, haylage, and silage are all methods of producing stored forage reserves, but each differ in their percent moisture (Table 1). Baleage is a form of haylage that has been harvested, baled, wrapped and ensiled.

Table 1. Average percentage moisture of stored forages.

Stored Forage Type	Moisture, %
Dry hay	≤ 20%
Haylage	40 – 60 %
Silage	≥ 65 %

How is baleage wrapped?

Storing forage as baleage can be done through the use of 1) an in-line wrapper that continuously wraps bales or 2) an individual bale wrapper. The following provides a comparison among wrapper types:

Table 2. Comparison of wrapper types.

In-line Wrapper	Individual Wrapper
More bales per hour	Lower purchase price
Less labor	Fewer bales per hour
No additional tractor required	Bales can be transported individually while wrapped
May use less plastic	
Once plastic is opened, must be fed quickly	
Higher purchase price	

†From LSU AgCenter Pub. 3330 – Economics of Baleage for Beef Cattle Operations. Available at www.lsuagcenter.com.

What forage crops are appropriate for use as baleage?

Baleage can be made from a variety of cool-season or warm-season forages adapted to the region. However, cool-season annuals are an especially good fit for this system for two reasons: 1) they represent a high-quality forage source when harvested at the appropriate stage of maturity and 2) we can “work around” some of the less than ideal conditions for drying down these forages during the spring (spring rainfall, cool weather conditions, shorter days) by putting them up as baleage. Less time is needed between cutting and baling, decreasing the risk for rain damage and/or delaying harvest due to the chance of rain.

What is the average nutritional value of baleage for beef cattle?

The stage of plant maturity at harvest is the single largest factor affecting the feeding value of baleage. The nutritional quality of baleage will only ever be as good as the starting product. What goes in must come out, and putting up low quality forage only means a low quality feed product at the end of the day. So, making baleage instead of hay does not guarantee a better quality product.

Once harvested, the process of putting up baleage can also impact feeding value. Bales that are wrapped with four to six layers of plastic between a moisture range of 40 to 60% can decrease dry matter and nutrient loss and produce a more stable product at the time of feeding.

Once these factors are considered, the overall value of baleage can be quite high. Cool-season annual forages often range between 58- 62% TDN when harvested at the appropriate stage of maturity. Crude protein values may range from 12 to 16%. Depending on the stage of production, these values are often appropriate to meet the nutritional needs of a mature brood cow without supplementation or significantly decrease supplementation needs.

What other considerations should I be aware of?

- Commercial additives such as enzymes or inoculants are available to help with preservation of stored high-moisture forages. Note that these are mainly designed to help with the ensiling process by increasing preservation of dry matter, decrease heating and molding during storage, and help preserve forage during feed out. They are not designed to add additional TDN or CP, and cannot mask the effects of putting up over mature forage.
- Spoilage can be minimized by wrapping bales in an air-tight manner and keeping plastic free of holes.
- Feeding strategies – Baleage can be fed as whole bales or chopped/ground for incorporation into mixed rations. An adjustment period may be required to get animals accustomed to consuming high-moisture forage, particularly calves. However, once they get used to this source, often times they do a good job of cleaning up the hay ring and there is very little waste! Provide an amount that

allows animals to consume bales within one to two days to prevent spoilage, especially during the summer months.

Conclusions

The decision to use baleage is operation dependent. Remember that the use of stored forage in cattle operations is a costly commodity. In order for baleage to work for you, ask yourself – does it significantly decrease my field and storage losses and do I see an improvement in animal performance compared to my current system?

For more information on the use of baleage in beef cattle operations, visit www.alabamabeefsystems.com and download our Animal Science Series Timely Information Sheet “Strategies for using baleage in beef cattle operations”.

*This articles is the first in the “Renewed and Revisited” Series. Visit www.alabamabeefsystems.com or www.secattleadvisor.com for timely updates related to these topics and more!