Making Great Baleage

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In many county Cattlemen's meetings and trainings held of late, I have strongly encouraged producers to consider taking full advantage of spring rains and growing conditions. Included in that discussion is usually an encouragement to use baleage to harvest and store any excess winter forage production. In this month's article, we begin a series where we will dive a little deeper into the management and use of baleage.

What Is Baleage?

Baled silage or baleage is a technique used for conserving and storing forage. Like all silage systems, baleage is a fermented forage product that is created when moist forage is stored in the absence of oxygen. Populations of naturally occurring bacteria on the plant surface can consume some of the readily available carbohydrates and produce organic acids. These organic acids lower the pH of the forage material and prevent fungal deterioration of the product. Fermentation has been used for millennia as a natural method of preserving food. Similar bacterial fermentation occurs when one makes yogurt, sour cream, or pickles.

The advantage of silage, whether stored in a silo or wrapped in a baleage bale, is that the crop does not have to be completely dried down. This lessens the risk of weather damage between cutting and baling, and allows the producer to harvest the crop in a more timely fashion. Losses during the curing, baling, storage and feeding phases are also each substantially lower when the forage is conserved as baleage rather than as hay.

Of course, this comes at an expense. The cost of the wrapper (generally $18,000 to $40,000), plastic wrap (usually $5 to $10 per ton of DM), and added labor can make this system quite costly. Furthermore, there is an environmental cost for disposal of the plastic. However, the advantage of timely harvest, higher quality, and more palatable forage makes baleage a crucial tool for livestock producers.

Cut Down No More Than You Can Handle.

One of the most important management decisions in making baleage is to cut down only what can be baled, hauled and wrapped in one workday. Frankly, failure to do this is the one mistake that is most often made whenever a producer changes from making hay to making baleage. One must realize that the bale-wrapping procedure is the rate-limiting step, or "bottleneck," in the whole process. A key consideration is that bales need to be wrapped as soon as possible after baling. The ideal time would be immediately after baling; but in practical terms, the goal should be that all bales are wrapped within four hours of baling. Bales that go longer than 12 hours between baling and wrapping suffer significant respiration losses, are often heat-damaged, and frequently are so deformed or "squatty" that they cannot be wrapped easily or effectively. So, one should work backward from the wrapping step. The amount to be cut must be no more than what can be baled, hauled and wrapped in one afternoon. One must also factor in how much time will be needed to wilt the crop from the moisture it contains standing in the field (~75- to 90-percent moisture) to the target moisture for baleage (55- to 65-percent moisture).

Choose The Right Bale Wrapper

Since bale wrapping is the bottleneck, choosing the right bale wrapper is critical. Of course, the cost of the wrapper is an important consideration. However, the old axiom of "you get what you pay for" is certainly true when buying bale wrappers. There are two basic styles of bale wrappers:

Figure 1. Examples of two basic categories of baleage wrappers: individual bale wrapper on a trailer platform (left) and an inline bale wrapper (below).

individual and inline (Figure 1). Individual bale wrappers tend to be less expensive, but a well-trained operator can usually wrap only 20 bales per hour with an individual wrapper, compared with 40-plus with an inline wrapper.

In addition, individual bale wrappers apply 40 to 60 percent more plastic to each bale, relative to the inline wrappers. This drives up costs and increases the waste associated with the process. Even so, individual bale wrappers are best if there are plans to sell individual bales or if one expects to do custom work for several small farms within several miles of the home place. Individually wrapped bales can also be fed without exposing other bales to oxygen, which begins the deterioration process. So, for producers who plan to feed only one or two bales every few days, an individually wrapped bale may be more appropriate. In general, producers who have the scale of operation to justify baleage will find that the inline bale wrappers will be the best choice over the long run.

Explore Your Options

Some producers will examine the costs and potential savings and find that baleage is unlikely to pay for itself on their farm. A certain scale is necessary to make baleage economical. Yet there are many areas where there would be a market for custom-hire bale-wrapping services. Many producers have found that they could make a return on their investment by hiring out their equipment and/or themselves to wrap bales for their neighbors. For some, this has been found to be a very profitable enterprise for their farm operation. So, one should assess the economic opportunities that are available on the home farm and beyond.

To Be Continued…

In upcoming articles, we will continue this series on the management and use of baleage by discussing best management practices for baling, wrapping, storing and feeding baleage bales. For more tips on baleage production and other forage management recommendations, visit our website, www.georgiaforages.com. If you have additional forage management questions, visit or contact your local University of Georgia Cooperative Extension office by dialing 1-800-ASK-UGA1. GC