WHAT USING AN IN-LINE TUBER HAS DONE FOR US

Jason Tower
Superintendent
Southern Indiana Purdue Agricultural Center
(812) 678-3401
Email:jtower@fullnet.com

It is early in May, the grass is green and plentiful, you know from experience that you will need it more come next February, and the weather man is calling for rain in the next 48 to 60 hours. What do you do? Cut it and hope it does not rain, or wait for later in the month when the chance of rain is less, but the forage quality is less as well. Most farmers will have to wait, however, the technology is available so producers can make hay early in May with a reduced threat of rain damage. The process of making baleage is a viable option for most produces that can justify, economically, the ownership cost of owning the rest of the equipment required to bale hay.

In 2001, the Anderson Company was generous enough to donate an in-line wrapper to the Purdue Ag Centers. The wrapper was used extensively at the Southern Indiana Purdue Agricultural Center (SIPAC) and the Feldun Purdue Agricultural Center (FPAC) and needless to say some hay got made that otherwise would have been rained on a time or two.

Even with the ability to make baleage sometimes the forage still gets wet. So what really is lost when forage mowed for hay gets rained on prior to baling? The following table is an example from SIPAC in summer 2001. (See Table 1) Although the hay in this demonstration was baled from two different fields, they are very similar in their forage components. Notice the changes in Total Digestible Nutrients (TDN), Relative Feed Value (RFV), and Neutral Detergent Fiber (NDF). The value of the hay from field 15 b has really decreased in comparison to the hay made right in field 15a.

The basic principle behind a baleage operation is to reduce the in-field dry down time required to properly harvest and store the forage. Generally in May, a forage producer would need at least a 3 to 5 day window to get the hay dry enough to bale and store safely. Making baleage, on the other hand, reduces the window of opportunity needed to properly dry down hay to 12-36 hours with 24 hours about normal. When making baleage the moisture levels only need to be 40-60% instead of 15-20% as in a dry hay situation. With these numbers in mind, one can quickly see that it is very possible to make hay early in May when the forage quality is at it peak instead of when the weatherman says it will be dry for 7 days in a row.

There are other advantages to a baleage system than just the time required to get

the crop in. There is a very real opportunity to improve stored forage quality though the use of baleage. When making baleage, there is much less leaf loss than when making dry hay. This was demonstrated at SIPAC in 2001. (See Table 2)

In this demonstration all the hay was made from the same field (15a). Two windrows were baled for baleage and then two were skipped for making into dry hay. This pattern was followed across the entire field for both cuttings. The data in the table would suggest that improvements were made in all the feed values listed. This is most likely do to less leaf shatter and reduced loss of the clover portion of this hay.

Other advantages to this system include the following. There is very little storage loss. Some University of Kentucky work shows negligible dry matter loss to baleage and 18.7% dry matter storage loss for dry hay stored outside on the ground. Visual observations show there seems to be less loss at the hay feeders for baleage when compared to feeding dry hay. To aid in less harvest loss when making baleage there is no need to run the rake or tedder across the hay field. These result in some additional savings due to less wear and tear on equipment and time in the tractor seat.

Some considerations to make before making baleage are:

1. Be sure that your baler is capable of baling high moisture hay.
2. Have a plan to deal with the plastic after feeding.
3. Determine if all the baleage will be used in one year.

That last point is important because the shelf life of baleage is only about one year before much of the bale spoils.

Over all, baleage is a good option for the producer. It is possible and economical for several producers to share one wrapper as SIPAC and FPAC do. (Located about 45 miles apart)

Table 1

	1st Cutting	
Field	15a	15b
Bale Type	Dry	Dry
Date Mowed	5/14/01	5/15/01
Date Baled	5/16/01	5/20/01
Dry Matter, %	86.5	89.8
Crude Protein, %	10.7	9.96
TDN, %	56	48
RFV, %	77	64
NDF, %	68.97	75.03
Sample Date	10/15/01	10/15/01
Storage Type	outside	outside
Rain	none	1.25"

Table 2

	1st Cutting		2nd Cutting	
Bale Type	Dry	Wrapped	Dry	Wrapped
Date Baled	5/16/01	5/15/01	7/13/01	7/11/01
Dry Matter, %	86.5	53.39	85.99	48.21
Crude Protein, %	10.7	11.77	14.23	16.28
TDN, %	56	60	61	61
RFV, %	77	94	106	118
NDF, %	68.97	59.11	52.76	47.87
Sample Date	8/22/01	8/22/01	8/22/01	8/22/01
Storage Type	outside	wrapped	inside	wrapped