



Utilization of Round Bale Silage as a Compliment to Hay Production

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Introduction

Conservation of forages for later feeding is limited by a number of challenges. The timely harvest of forage in Florida for hay production is often limited by optimal drying conditions. Therefore, alternative methods of forage conservation need to be examined. Round bale silage (RBS) offers an alternative forage harvesting and storage system to traditional hay harvest and storage. The use of RBS may be an attractive compliment to traditional hay harvest system by overcoming several of the challenges to hay production in the Southeast.

Advantages

- Do not need sequential drying days to harvest forage
- Flexibility to conserve forage when the crop is at its nutritional peak
- Reduced field loss
- Reduced storage loss
- Increased dry matter (DM) recovery
- Increased nutrient recovery
- Dual use of equipment

Disadvantages

- Plastic cover cost / disposal
- Plastic damage during storage
- Special tape to seal damage
- Increased cost per bale
- Potential for increased spoilage / loss
- Limited transportation / storage options

Bermudagrass Fertilization Program

Date	Hay Section	Hay-RBS Section
	Lbs / acre of N applied	
April	90	90
June	80	80
July	80	80
August	80	80
September	--	68

Considerations for Making Round Bale Silage

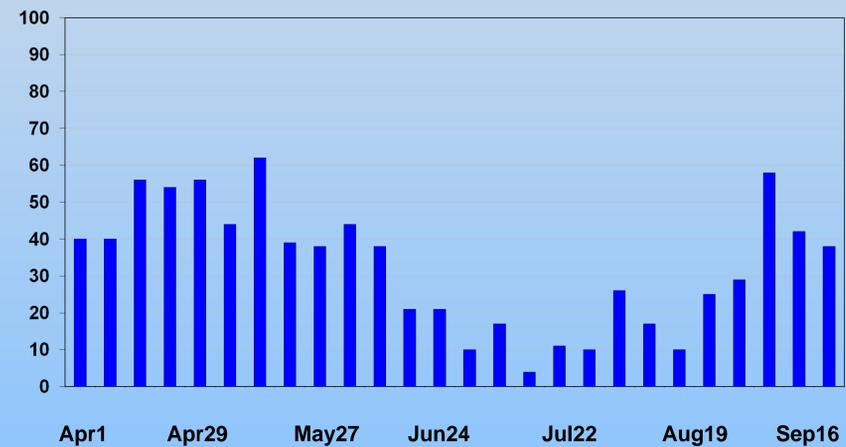
- Fermentation quality of RBS is dependent on excluding air from the bale and wrap
- Bale needs to be tight and well-shaped
- Make bales as consistent as possible
- Use untreated sisal or plastic twine, or net-wrap
- 40-50% DM is optimum for RBS
- Wilting 2-3 hours improved quality, intake, and performance of beef heifers
- Wrap bales within 2 hours of baling
- Wrap bales with 4-6 layers of film
- Make tubes straight and even as possible
- Bales need to stay in the plastic a minimum of 30 days, more is desirable

Effect of conservation method on Bermudagrass forage quality

Item	Hay	RBS
Mean Bale		
Wet weight, lb*	824	1,556
Dry matter, %*	92.5	41.3
Crude protein, %*	10.4	13.1
TDN, %*	54.1	57.2
Dry matter, lbs*	769	638
Crude protein, lbs	77.9	82.8
TDN, lbs*	415.8	365.2

* Bale types are different ($P < 0.05$).

Probability of a 3-day dry period for hay harvest



Effect of Bermudagrass forage system on production and quality

Item	Hay	Hay-RBS
# of Cuttings	3	5
# of Bales	259	479
Total harvest, lbs wet	219,123	709,131
Total harvest, lbs dry	202,743	312,728
Mean Bale		
Wet weight, lb*	847	1,470
Dry matter, %*	95.5	46.8
Crude protein, %*	10.1	12.9
TDN, %*	53.8	57.1
Dry matter, lbs*	786	645
Crude protein, lbs	78.6	82.0
TDN, lbs*	418.4	369.2

* Production systems are different ($P < 0.05$).

Utilizing Round Bale Silage

- Quality of RBS will only be as good as the forage that is started with, fermentation does not improve forage quality.
- Acceptable, good quality alternative for hay or silage.
- May allow for additional cuttings because a regular harvest schedule can be maintained.
- Feeds mostly like hay but consider its similarity to silage–
 - Needs adequate time to ferment
 - Aerobic stability of offered bales during long feed-out periods
- Acceptable forage for mature cows, developing heifers, and growing calves.