

Forage Conservation: Hay vs. Silage

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Conservation of forages in the Gulf Coast area for later feeding is limited by a number of challenges. The timely harvest of forage in the Gulf Coast for hay production is often limited by optimal drying conditions. Therefore alternative methods of forage conservation need to be examined. Round bale silage 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.

Making Round Bale Silage

- Harvest forage at optimum quality, 4-5 weeks re-growth.
- Cut and condition the forage as normal for hay making.
- Wilt forage to 50-60% dry matter, 2.5 to 4 hours during good drying conditions.
- Bale with normal hay baling equipment.
- Make well-shaped dense bales of appropriate weight.
- Use untreated sisal or plastic twine, or net-wrap

Wrapping Round Bale Silage

- Wrapping should occur the same day as baling, but can be delayed up to 48 hours.
- Choose a quality, sunlight (UV) stable stretch wrap.
- Four wraps of plastic minimum, six layers plastic likely the optimum.
- Additional labor associated with wrapping may be similar to labor associated with hay making.
- Cost of round bale silage may be offset by reduction in field losses of nutrients and potential yield of poor hay making.
- Bale quality is dependent on excluding air from the bale storage system.

Advantages

- 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

Effect preservation method on conserved forage quality UF work.

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, lb	77.9	82.8
TDN, lb	415.8	365.2

Adapted from Hersom et al. 2007 Florida Beef Research Report data.

Effect preservation method on conserved forage costs.

Item	UF Study ¹		Alternative Scenario	
	Hay	RBS	Hay	RBS
# of bales harvested	259	479	300	475
Per bale cost, \$/bale ²	25.55	20.80	25.55	20.80
Cost of baling method, \$	6,617	9,963	7,665	9,880
As-fed forage production, lb	219,123	745,324	255,000	712,500
Cost wet forage production, \$/cwt	3.02	1.34	3.01	1.39
Dry matter forage production, lb	202,743	305,582	235,875	299,250
Cost dry production, \$/cwt	3.26	3.26	3.25	3.30
TDN, %	54.1	57.2	50.0	62.0
Lbs of DM TDN	109,684	174,793	117,938	185,535
\$ / cwt of TDN	6.03	5.70	6.50	5.33
CP%	10.4	13.1	8.5	14.0
Lbs of DM CP	21,085	40,031	20,049	41,895
\$ / cwt of CP	31.38	24.89	38.23	23.58

¹ Adapted from Hersom et al. 2007 Florida Beef Research Report data.

² Based on 2009 Iowa Custom Rate Survey; costs of mowing, baling, and one raking for hay.