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The Plastic Wrapper is the Key to Making High Quality Round Bale Silage¹

R.P. Cromwell, W.E. Kunkle, G.D. Sadler and C.G. Chambliss²

In Florida and other areas of the southeastern United States, most of the forage crops used for livestock feed are warm-season perennial grasses: Bermuda, Bahia, and pangola. To a lesser degree, some producers grow higher quality legume crops: alfalfa and perennial peanut because they are more difficult to grow.

The producer has to store any excess forage produced during the peak growing period to have feed when forage production is either low or ceases entirely. Forage crops are stored as hay, a 15- to 20-percent-moisture material baled in rectangular or round bales; or silage, a 50- to 70-percent-moisture material. Silage must be stored under anaerobic (oxygen-absent) conditions in order for the forage to ferment to silage and remain a stable, palatable feed. Hot, humid weather with frequent rain occurring during the peak growth period of Florida forage grasses makes hay production difficult. It takes 2 to 3 days of favorable drying weather to dry grass to the 15- to 20-percent moisture level required for safe long-term storage of hay.

Storing forages as silage makes it possible to harvest the crop after 0 hours (baled immediately after cutting) to 4 hours of wilting in the field. This short drying time increases chances of harvesting the crop before it rains. Harvesting losses of most forage crops are reduced by silage harvesting: Relatively wet forage does not lose leaves as readily as dry forage does when handled by the harvesting equipment (this

is especially true for alfalfa). Despite this more forage is stored as hay than silage in Florida, because traditional silage-making methods require expensive and specialized equipment.

Round-bale silage (or baleage) is a relatively new method requiring little specialized equipment beyond the round baler used by many hay producers. In this system, wet forage (50- to 65-percent moisture) is tightly baled, then stored in a type of plastic envelope to keep air (oxygen) from entering the bale.

Research conducted on three different round-bale silage storage systems at the University of Florida's Pine Acres Research Farm is described herein.

Single-Bale Bags

A single bale of wet forage was stored in a large plastic bag sealed to exclude air by tying off the open end of the bag with twine. Bags used in this system were expensive (\$6 to \$8 per bag), and a lot of labor was required to load the bales into the bags. As the bags could only be used for one season, this method of making silage was eliminated for economic reasons.

Multiple-Bale Plastic Tubes

Plastic tubes about 100-feet long were used to store 15 to 20 bales of forage (depending on bale width). The tube was tied off at both ends to keep air out during storage. This system often resulted in

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2. Authors are Associate Professors of Agricultural Engineering, Animal Science, Food Science and Agronomy, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

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