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Results of On-Farm 1995-96 Hay Ammoniation Demonstrations in Florida

W.F. Brown
University of Florida, IFAS

For questions or comments regarding this publication contact



[William F. Brown](#)

Wet summer conditions followed by a cold winter can cause low pasture availability and quality, resulting in low hay production and quality. Low-quality hay can be treated with anhydrous ammonia to improve its feeding value. Hay ammoniation is very adaptable to conditions on Florida ranches. The only requirement is that the hay be sealed air-tight under plastic for about 30 days after treatment.

Hay can be stacked in a 3x2x1 pyramid configuration. For 1000 lb bales, 16 rows on the bottom, 15 in the middle, and 14 on the top can usually be stacked, for a total of 92 bales per 40 foot by 100 foot sheet of plastic. Hay is treated with anhydrous ammonia at the rate of 4% of the weight on a dry matter basis, so about 3100 lbs of ammonia would be required. With this stacking method, the single bale on top helps shed rain. A disadvantage is that less than a full tank of ammonia is needed, and more time is required to monitor the percentage-full gauge on the ammonia tank to meter in the proper quantity of ammonia.

Another stacking method is a 4x3 configuration, with no staggering of the top 3 bales on the bottom 4, resulting in 7 bales per row. Sixteen rows results in 112 bales per sheet of plastic.

With this method, more bales can be placed under the plastic, and a full tank of ammonia (4000 lbs) is needed, requiring no monitoring of the percentage-full gauge. A disadvantage of this method is that rain can collect on top of the stack.

A company with a consistently low price for plastic is First Line Corporation in Valdosta, GA (800-7659629), at about \$75.00 per roll. You must purchase 6 rolls. If you do not need 6 rolls, call and I will put you in touch with another person who also needs a partial order.

Two companies supply anhydrous ammonia. Mr. Franklin Copeland is located in Alachua (904-462-1596; cellular 941-660-8247) and will have a location in south-Florida. He delivers anhydrous ammonia in nurse tanks, and picks up the empty tank. Goldkist Corporation in Lake City (904-752-5725) supplies ammonia with nurse tanks that can be borrowed.

In the table below are results from a few ranches that ammoniated hay during 1995-96. Names and telephone numbers are provided for contact. Untreated hays were of low-quality as indicated by low levels of crude protein (CP) and total digestible nutrients (TDN). Anhydrous ammonia treatment increased the CP of all hays. Increased hay CP is due to nitrogen addition from the anhydrous ammonia. This is non-protein-nitrogen which is similar to the nitrogen from urea. Even though the CP of ammoniated hay may be greater than the animals requirement, improved performance has been obtained in younger cattle by feeding a natural protein like cottonseed meal or feathermeal. Ammoniated hays were higher in TDN than untreated hays. Ranchers report that cattle consume ammoniated hay better, and notice much less waste.

Ranch Contact, Location	Grass	Crude protein		Total digestible nutrients	
		Untreated	Ammoniated	Untreated	Ammoniated
Dan Sumner, Ruskin (813) 634-6381	Bahia	5.0	15.4	43.8	52.7
Bill Adkinson, Oak Knoll Ranch (941) 676-1763	Digit	7.7	13.3	43.0	51.1
Jim Shelfer, Durando Ranch (941)735-2263	Limpo	2.6	10.3	47.4	56.3
Charles Lawton, Plant City (813) 754-7652	Star	5.1	15.1	47.3	56.5