



Cooperative Extension Service

Institute of Food and Agricultural Sciences



RANGE CATTLE REC NEWSLETTER

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Calendar Of Events

October

8	Cattle and Forage Field Day -- Range Cattle Research & Education Center, Ona, FL. Ph: 941-735-1314.
27	Florida Environmental EXPO '98. Tampa Convention Center, Tampa, FL. Ph: 352-392-9570.
29	Forage Tour -- Highlands & Okeechobee Counties. SFBFP, Buck Island Ranch. Ph: 941-386-6540.
30	Annual Cattle Sale. Subtropical Agricultural Research Station, Brooksville, FL. Ph: 352-796-3385.

November

5	Bull Sale -- Florida Hereford Pen Bulls. Bartow, FL. Ph: 941-465-4127
9	ABC Bull Sale - Angus, Brangus, Charolais.

	Arcadia State Livestock Market, Arcadia, FL. Ph: 941-494-3737.
19	Bull Sale -- Second Annual Southern Source Charolais Bulls. Ag Center Arena, Bartow, FL. Ph: 941-533-2192.

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Editorial:

Florida Grown Hay A Profitable Proposition

The long growing season in Florida offers opportunity for a variety of tropical forage hay crops. They include perennial peanuts, bermudagrasses and stargrasses. Rapid population growth, increasing rural urbanization and diversification of our livestock industry have created a growing demand for quality hay to maintain horses, cattle and goats. At a time when beef cattle prices are down, Florida cattle producers stand to gain by diversifying their operation to include some quality hay production. However, such a decision must be made with careful consideration to forage specie and site selection, cultural practices, availability of harvesting equipment and storage facility.

Perennial peanut varieties (Florigraze and Arbrook) will produce hay similar in quality to alfalfa (15-20% crude protein and 60-65% digestibility). Perennial peanuts are established from rhizome sprigs and take more than a year to obtain full ground cover. They grow best on the well-drained sandy soils. They require a soil pH in the range of 5.8 to 6.5 and annual fertilizer application of 0-30-60 pounds per acre of N-P₂O₅-K₂O. Nitrogen application will inhibit the rate of establishment whereas micro nutrients are desirable. Annual hay production from two cuttings ranges from 3 to 5 tons per acre of dry matter. Once established and properly managed, perennial peanuts may persist for more than 20 years.

Stargrasses (Ona, Florona and Florico) and bermudagrasses (Florakirk and Tifton 85) produce high tonnage (5 to 7 tons per acre of dry matter, annually) if properly fertilized and harvested every 4-5 weeks. They are established from runners or mature stem pieces. About 1500 pounds (20 of 75 pound bales) of freshly harvested planting material are distributed on an acre of clean cultivated soil, covered by crimping or disking (50%

cover) 2 to 4 inches deep, followed by firm packing. They grow well on most flatwood soils. Soil pH must be maintained above 5.5 by liming. When managed for hay, about 70-40-80 N-P₂O₅-K₂O should be applied after every harvest. Micronutrients should be applied at 20 pounds per acre of TEM 300G every 3 years. The fertilizer regime indicated should be adequate to support dry matter production of 2 tons per acre from each 5 week cutting. Commercial growers must cut stargrass hayfields on a timely basis (4 to 5 week harvesting interval) to maintain good quality (10-12% crude protein and 55-60% digestibility). They should also allow a stubble of 4 inches for stargrass persistence. Florico stargrass should not be used under a continuous hay harvest program because of persistence problem. Florico is best used for grazing and stubble should be maintained at 8 to 10 inches, however, it can be harvested for hay once or twice annually.

Harvested forage must be dried to less than 15% moisture before baling and storage because high moisture will cause molding and possibly spontaneous combustion in the barn. Growers should be aware of the frequent rainfall and high humidity that are prevalent during summer. Good quality hay can be made in the spring and fall seasons. Cattle can be removed from pasture by March 15 followed by two hay cuttings and again on September 1, utilizing the fertilization and harvest system as suggested. Pasture may be grazed during the wet summer period when hay drying is difficult to achieve.

All baled hay should be stored under a shed or tarp to minimize storage losses. Many producers do not realize that large round bale losses could reach 20-30% of dry matter from water damage if hay is unprotected. Likewise, feeding losses can be reduced by placing a barrier (ring, electric wire, panels, feeding racks) between hay and the animal.

Further information on commercial hay production practices is provided by our featured farmers in this issue. Additionally, the Florida Department of Agriculture and Consumer Services publishes an annual "Florida Hay Directory", which lists producers who have hay for sale in the 'Florida Market Bulletin'. To be included in the directory or for information about current sources of hay, contact: Hay Directory, Florida Department of Agriculture and Consumer Services, Division of Marketing and Development, 414 Mayo Building, Tallahassee, FL 32399-080, or call (850) 488-4132. (MBA)

- Ryegrass Forage Production For The Winter Season -

Annual ryegrass is an important source of high quality grazing during the cool winter months in south-central Florida. It is used as an energy and protein supplement for lactating cows and growing heifers. Ryegrass, seeded alone after a vegetable crop or used in a pasture renovation program, is quick to establish provided adequate moisture is available. To improve chances of moisture availability, ryegrass may be planted in low-lying areas after the summer rainfall. Cultivated areas seeded to pure stands of ryegrass can be grazed within 6-8 weeks after seeding, and grazing may extend for 12 to 18 weeks. In south-central Florida, **ryegrass should not be planted before November 1** in order to minimize disease (Pythium) incidence.

Since new ryegrass varieties are continually being released from public and private sources, they are tested under south-central Florida conditions by Dr. Paul Mislevy before they are recommended to producers for use. Dry matter yield, seasonal forage distribution and rust resistance are some of the important attributes that are evaluated. Growers are encouraged to use proven ryegrass varieties such as **Gulf, Jackson, Big Daddy, Florida 80, Florida Rust Resistant, Rio, Surrey and Tetrablend 444** in their winter forage programs. These varieties have consistently produced good yields (3 to 3.5 tons per acre for the winter season) on prepared seedbeds with low crown rust in central Florida.

Performance of recommended varieties are similar. Therefore commercial growers should consider price per pound of seed as a selection criteria. Seeding rate for all ryegrass should be 20 pounds per acre. The clean-tilled seedbed should be fertilized with 0-30-60 pounds per acre of N-P₂O₅-K₂O prior to seeding. The micronutrients zinc, copper, manganese, and iron may be applied at 1.5 pounds per acre, and the secondary nutrient sulfur at 3.0 pounds per acre. Nitrogen fertilization is discussed in the next section. Sod-seeded ryegrass normally requires twice the nitrogen and produces only half the yield of ryegrass seeded in cultivated soil due to grass competition. **(PM or MBA)**.

- Alternative Methods of Ryegrass Nitrogen-Fertilization -

Ryegrass responds well to fertilizer, especially N. Nitrogen produces rapid forage growth, higher crude protein and improved digestibility. As a general fertilizer recommendation, ryegrass should receive 30 lb/A of inorganic N at planting, and an additional 50 lb/A of inorganic N every four to six weeks. One should apply 30 lb/A phosphate and 60 lb/A of potash at planting if the soil tests low in P and K. The optimum soil pH is 5.5-6.0.

Biosolids (processed sludge) are an alternative source of plant nutrients and are becoming increasingly popular for fertilization of pasture grasses. Not only are they good sources of N, but they contain other valuable nutrients such as sulfur, P, iron, etc. In addition, biosolids supply organic N, making it a slow release fertilizer. Biosolids can also be applied to agricultural land to improve physical properties (water retention, infiltration, aggregate stability) and chemical characteristics of soils. In the past, there was concern over heavy metal (lead, nickel, cadmium, mercury) contamination from sludges and biosolids. Over the past 30 years, biosolids and sludges have become cleaner, and heavy metal contamination of the environment is of little concern. The concentrations of nutrients and heavy metals in biosolids should be provided.

Using biosolids as an organic slow release fertilizer for grasses grown in Florida can be a beneficial source of nutrients compared to inorganic fertilizers which can leach more readily than slow release fertilizers in sandy soils. Four-year studies at the Range Cattle Research and Education Center showed that yields and crude protein content of ryegrass increased with increasing rates of pelletized biosolids (0 to 8 tons per acre) and that biosolids are good alternate sources of fertilizer for forage grasses grown in Florida. It is possible that biosolids, applied only at planting, will last through the ryegrass growing season. Generally 40 to 50 percent of the N in biosolids will be available to the plant the

first year with the other 50 to 60 percent available the second year. Thus, biosolids provide needed N for protein production in the grass. Before using any fertilizer material it is important to consider the economics. It is most important to know the N content of the material. One can generally assume that applying 1 ton per acre of biosolids containing 5% N will supply 50 lb N/A the first year and an additional 50 lb N/A the second year. There are different forms of organic manure, some are granular while others are cake or liquid material. The nutrient analyses of biosolids, cake and liquid material are all different and analyses change from sewage plant to sewage plant. All have a place in fertilizing pasture grasses in Florida. **(JR or MBA)**

- Sod-Seeded Ryegrass Pasture in South Florida -

In North Florida, Georgia, Alabama, etc. freezes turn-off perennial grass growth early in the fall and keep grasses dormant until spring, while cold fronts provide rain for growth of winter annuals. With relatively good soils in the Southeast, ryegrass over-seeded in dormant perennial grass pastures provides excellent nutrition for cattle during winter. Conditions are different in south Florida because frost comes late or not at all. We may or may not get much rainfall in the fall and winter. Soils are sandy and infertile. If ranchers plan to over-seed bahiagrass pasture with ryegrass in south Florida, they really need to consider the costs and returns. Research at Ona and Immokalee has indicated that ryegrass over-seeded in bahiagrass yielded 1900 lb/A of dry forage compared with a 5-year average of 5400 lb/A for ryegrass in a clean-tilled seedbed. The only difference was competition from bahiagrass. Cattlemen cannot irrigate (irrigation was provided in those days when research was conducted) and they are most likely to use less fertilizer than was applied under research conditions, therefore are more likely to end up with little or no ryegrass in the bahiagrass pasture. I know cattlemen who tell me that a little ryegrass in early March is worth the expense. All I ask is that they evaluate their cost and benefits and consider alternatives. **(RSK)**.

- Grazing Range after Burning -

Last winter and early spring it was too wet to burn range and also in late spring and early summer. Then we went into a drought that resulted in wide-spread forest fires around the state. Assuming conditions will be good in 1998-99, there will be many acres in Florida that will be overdue in receiving the benefit of prescribed fire. Fire is necessary to maintain the health of the flatwoods plant community, and it is important to reduce the threat of wildfire. Florida cattlemen have been "burning the woods" for generations, and whether they were aware of the importance of the former, they knew burning was the cheapest and most practical way to improve range forage quality for their cattle. Burning and allowing cattle to concentrate on burned areas without the benefit of rest can detract from the beneficial aspects of prescribed burning. Burning every 2-3 years and allowing about 60 days for regrowth before grazing in the year that the range is burned will not injure the important native grasses. For example, cattle may start grazing on unburned range in October while different portions of the range are burned in October, December, January, etc. Cattle are vacated from burned units until December, February, March, etc. Forage regrowth is slow in the cool season, so there is not much forage on burned range.

Since cattle can easily eat the regrowth in 30-40 days, plan to get cattle into other range units or onto bahiagrass pasture in spring. (RSK).

Feeding Selenium in the Mineral Mixture - Is A Low Cost Insurance Policy -

Florida grown forages and feeds normally contain low levels of selenium (Se). The average concentration of Se in one study was 0.02 ppm and less than 0.05 ppm Se in another. A third study showed that Florida forages contained 0.07 ppm Se in the summer and 0.05 ppm Se in the winter. These levels are well below the 0.1 ppm of Se recommended in the diets of cattle.

Dr. Lee McDowell obtained soil, forage and animal tissue samples from nine ranches throughout Florida. The results showed that Se was low in the soil and forage samples. There were also low levels of Se in hair and liver samples of cattle grazing these pastures, indicating the possibility of Se deficiency.

However, cattle grazing in Florida have not responded to the administration of Se. Dr. Ray Shirley injected cows with 5.5 mg Se/100 kg body weight every 60 or 120 days for 3 years in studies in Gainesville and at Belle Glade. At Gainesville, the clover pasture grazed contained 0.02-0.03 ppm Se. At Belle Glade, the St. Augustine grass pastures grazed contained 0.06 ppm Se. There was not a positive response to Se injections in calf weaning percentage or calf weaning weight at either location.

Vitamin E seems to substitute for Se or reduces the level of Se required to cause deficiency abnormalities such as white muscle disease. It is speculated that the abundance of Vitamin E in green growing forages, which are available in Florida most of the year, is the reason why we observe a low incidence of Se deficiency even though Se levels in our forages are very low.

Sulfur has similar molecular characteristics to Se. Sulfur prevents the uptake of Se by plants and absorption of Se by animals, increasing the possibility of a Se deficiency when Se levels are borderline to requirements. Without Se supplementation, it is possible that sulfur fertilization or sulfur feeding could cause Se deficiency in beef cattle grazing Florida forages.

It is legal to supplement cows with up to 3 mg of Se per day, which is three times their requirements. This would be 0.002% Se in a mineral mix consumed at approximately 5 oz/cow/day (high intake mineral mix), or 0.005% Se in a mineral mix consumed at approximately 2 oz/cow/day (low intake mineral mix). **The cost of supplementing 3 mg/cow/day of Se in a mineral mixture is 6 cents/cow/year, a low cost insurance policy.**

Cattlemen should study the feed tag and monitor the intake of mineral mixture to make certain cattle consume adequate amounts of Se, and other minerals important to good beef production in Florida. (FMP)

Featured Farmers:

Sherley's Hay Operation and McClure Hay Farm

What do McClure's and Sherley's farms have in common? Successful commercial hay operations in south-central Florida. But then that is as close as they get. Sherley's operation is managed by an experienced, mature man David Sherley off State Road 731 in Venus, Florida. McClure Hay Fields on State Road 675 in Parish, Florida, are manned by an innovative, young forage producer Clay Newsome.

David has been in the business for more than 15 years, and that is how old some of his bermudagrass hayfields are. He has a total of 400 acres, most of which are planted to Coastal bermudagrass and 30 acres of pangola grass that is only 3 years old. Mr. Shirley sprays with Weedmaster to control broadleaf weeds. But more importantly, he uses herbicides to keep vaseygrass and smutgrass from encroaching into his bermudagrass. How does he do it? Three days after cutting for hay in the fall season, Mr. Sherley will spray about one-half of a quart per acre of Roundup to his bermudagrass fields. At that time, the bermudagrass plants are still without any leaves. The vasey and smut grasses will show some initial leaf growth which absorbs the Roundup spray.

The two-man operation on Sherley's farm produces 50,000 square bales and between 3,000 and 5,000 round bales, yearly. This level of efficiency has been made possible by careful selection of equipment, good planning and implementation. In the spring when little rain is usually available, liquid nitrogen is cut into the ground to jump-start grass growth. Grass is harvested after about 5 weeks regrowth. Forage is cut after the morning dew dries off. The flail mower used for cutting helps to dry and bale the next day. If his crop is rained on before it dried, then he will run the tedder to fluff up material to promote drying and the product will go into round bales and sold as a lower quality crop. The swath is raked just before baling. A self-propelled baler, installed with a moisture meter, is operated at 10 miles per hour to produce 500 (55 pounds each) square bales per hour. The moisture meter inside the baler allows monitoring of bale moisture continuously. The target is for square bales to be kept consistently below 12% moisture at baling. A New Holland automatic bale loader picks up square bales from the field unto a wagon from which bales are automatically unloaded into the barn. A home-made machine, consisting of a network of hydraulics and tines, is capable of picking up 24 square bales at a time from the storage barn for loading onto trailers.

If you want some top-quality hay from the Sherley's, then you better hurry because they sell fast. The farm usually runs out of bales by January to February.

The McClure hay operation is part of a larger enterprise owned by Mr. Dan McClure of Bradenton, Florida. It includes a tomato operation and a 1000-head cattle ranch. Both the ranch and hay businesses are managed by Mr. Clay Newsome. "When I took over the

management approximately two years ago, the ranch was virtually idle with very little improved pastures. Two years ago, I started pasture renovation with Ona stargrass and a lot of advice from the Range Cattle Research and Education Center at Ona. Today, I can boast of 500 acres of Ona stargrass hayfields and another 300 acres divided between Floralta limpoggrass, Florico stargrass and Florakirk bermudagrass. My target is to reach 1,000 acres of hayfields in a 5-6 years rotation with tomato farming".

Pasture establishment follows a tomato crop. After disking to obtain a clean seedbed, Mr. Newsome sprigs fields with freshly harvested planting material at 1500 pounds per acre. He covers the sprigged material with a home-made crimper. Then he rolls the field to pack soil firmly around planted material. A flood irrigation system from the previous tomato operation is at a stand-by to ensure moisture availability and successful establishment even when the weather turns dry. Fertilization follows IFAS recommendations. Mr. Newsome also applies a complete fertilizer to a hayfield after each cutting to ensure quick regrowth and a quality product. Machinery and equipment are shared between tomato and hay farming to improve efficiency. Grasses are cut at 4 to 5 weeks regrowth and cut forage is normally baled one day after mowing. Square bales for the horse and dairy markets are baled at 6 to 10% moisture and stored in a shed. Round bales are made for the beef cattle market.

Mr. Newsome is winning the soul and hearts of the livestock industry in Manatee and Hillsborough counties with his good quality hay. The greenery scene of his hayfields is also fantastic to watch. We wish him the best of luck in the hay business. (MBA)

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