



Cooperative Extension Service

Institute of Food and Agricultural Sciences



RANGE CATTLE REC NEWSLETTER

July 2000 - Vol. 3, No. 2



Calendar Of Events

July

20 Hay Fiely Day. Jay, FL. Telephone:850-675-3107 (Johne Atkins).

August

15-16 Florida Forage Workers Meeting and Tour. Brooksville, FL. Telephone: 352-3921817 (Carrol Chambliss).

29 1st Annual Pasture Pests Program. Arcadia, FL. Telephone: 863-993-4846 (Jim Selph).

September

11-15 Florida Association of Extension Professionals' Annual Meeting. Stuart FL. Telephone: 352-392-1761 (Jennifer Van Doren).

21-23 Soil and Crop Science Society of Florida Annual Meeting. Tallahassee, FL. Telephone: 352-392-2325 (Ray Gallaher).

30 Florida Santa Gertrudis Association Cattlemen's Kind Auction. Bartow, FL. Telephone: 407-897-2708 (FCA).

October

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EDITORIAL

- The Rains are Finally Here, But Not Everywhere -

According to the National Weather Service, the recent drought began unofficially in October 1998 and affected the water supply of much of south west and central Florida as none has done before it. For the past 20-month period of drought, rainfall totaled a mere 39.22 inches at Tampa International Airport which broke the previous 20-month record set between October 1943 and May 1945 of 42.79 inches by a 3.57 inch margin. The end of May also completed the second driest start to a calendar year on record. The record 2.55 inches was set in 1898 when the population of the Tampa Bay area was only 3% of what it is today. The drought affected stream and river flow throughout the area. River gauging points in west south-central Florida were 25% or lower than normal. Record lows were observed along the Hillsborough River at Zephyrhills and Morris Bridge, along the Withlacooche River at Croom, the lake Manatee, and the Peace River. For the dry season, defined as October through May, the 1999 to 2000 season ranks as the fourth driest on record. This alone would not be newsworthy. However, the statistic bears weight considering the fact that the previous dry season - October 1998 through May 1999 - ranked second! May 2000 was the driest May in Tampa since records began in 1890.

The result of the drought is that topsoil moisture throughout the State is very low (84%) to low (15%) with scattered areas of adequate moisture. In south-central Florida, most water holes for livestock are dry and some wells are going dry. Pasture grass is extremely short. In dry areas, cattle condition continues to deteriorate and brush fires are active. According to Florida Farm Bureau, Florida farmers and ranchers are facing estimated crop losses of approximately \$188 million as a result of the drought. The Florida Department of Agriculture and Consumer Services (FDACS) says Florida farmers have lost 80% of their pastures and up to 100% of their cotton, soybeans, corn, watermelons, hay and some vegetables. Legislation (SB114) signed into law on June 19 by Gov. Jeb Bush will lead to the creation of a disaster loan program that will help producers who are not eligible for other State and Federal disaster assistance programs. Additionally, the bill protects farmers' and ranchers' right to continue farming by eliminating duplicative and conflicting rules and regulations

from multiple levels of government. Producers may check with their county extension agents as to qualification for Federal or State disaster-relief loans.

Since mid-June, afternoon thunderstorms have become more common across southern Florida, a pattern that is typical during the humid summer months. Precipitation is still lowest in the west-central Florida, however, the outlook is very good. Normal to above-normal precipitation is forecasted for June 27 to July 1 for the entire state of Florida. With the memories of wildfires that burned thousands of acres, drought and water restrictions barely behind us, producers are gearing up for a busy growing season. Some damaged pastures may have to be renovated, hay feeding may have to be continued in some areas which have not received adequate rain, and forage will have to be conserved as hay for the next dry season. **(MBA)**

- Value Added Health Programs for Calves -

Buyers often desire that calves be administered specific vaccination programs prior to shipping. However, there are questions by Florida cow-calf producers about the cost of these programs and recovery of these costs when calves are sold and shipped. The best study to-date that provides answers to these questions is published in a series of research reports by Dr. Michael King with the College of Veterinary Medicine at Colorado State University (King, et al., 1996, 1997, 1998, 1999, CSU Beef Program Reports).

For the study, Dr. King analyzed four years of sales data (1995-1998) accumulated by Superior Livestock Video Auctions throughout the U. S. In each year, sales records involved approximately 1,700 lots with an average of 122 calves per lot. The average sale weight of calves over four years was 537 pounds. The overall four-year study involved a huge amount of data with 6,800 lots and 832,000 calves that adds validity to the results.

Dr. King analyzed price differences for a number of variables including calf origin, calf sex, breed composition, frame score, fleshiness, and several calf vaccination programs. For this report, we will look at comparisons Dr. King made between three vaccination programs included in the analysis. These are: 1) calves not in any vaccination program, 2) calves not in a documented vaccination program, but according to the sales catalog they received one or more virus vaccines (IBR, BVD, PI3, and BRSV) at some time prior to the date of sale, and 3) Superior Livestock Video Auction's Vac 34 documented value-added health program that requires calves to be vaccinated at two to four months of age against Clostridial 7-way and vaccinated again at three to four weeks before weaning against IBR, PI3, BVD, BRSV, and Pasteurella haemolytic bacterin.

In comparison with calves receiving no vaccinations, buyers paid \$0.65 per hundredweight more for calves that received one or more virus vaccines (undocumented) prior to the sale date. Calves receiving one or more virus vaccinations would bring an additional \$3.49 per head than calves not vaccinated at a sell weight of 537 pounds.

In comparison to calves receiving no vaccinations, buyers paid \$1.33 more per hundredweight for calves in the Superior Livestock Vac 34 documented value-added health program. Thus, calves in a documented value-added health program would bring an additional \$7.14 per head than unvaccinated calves at a sale weight of 537 pounds.

This information collected by Dr. King shows that buyers will pay premiums for calves that receive one or more virus vaccinations. They will pay a higher premium for calves documented to have received Clostridial 7-way at marking and branding and penned a second time at three to four weeks before weaning and vaccinated against IBR, PI3, BVD, BRSV, and Pasteurella haemolytic bacterin. The cost of these practices and return data presented above allow Florida cattlemen to determine the economical benefits of similar calf vaccination programs. **(FMP)**

- Cattle Handling its Influence Extends - Well Beyond the Ranch

Recently I had the pleasure to listen to Dr. Temple Grandin (Colorado State University) discuss cattle handling to a group of researchers and ranchers. I had heard her speak on this topic on past occasions and was once again thoroughly impressed on how intricate and often overlooked this important topic is. Many of the cow/calf operations in Florida are extensive, requiring multiple animal handling facilities to accommodate varying pasture locations. Other operations are able to utilize a common handling facility. No matter what your specific conditions dictate, a careful examination of your facility and animal handling protocols may make a big difference in the sustainability of your overall management system.

When we think of the attributes of good animal handling we often only consider the implications on the cow and resulting level of effort needed for processing her through the facility during normal annual processing (i.e. branding, vaccination, pregnancy checking). We now have good evidence that animal temperament directly influences feedlot performance and carcass quality. This evidence cannot be ignored, especially as our industry continues to move toward a more value-based marketing structure. No longer are we able to forego responsibility of our calves once they leave our ranch. Further, many Florida cattlemen are attempting to improve returns by retaining part or all of the calf ownership through the feeding and finishing periods.

Summaries of two recent studies were provided. One study investigated the effect of cattle temperament on meat tenderness and dark cutting in the processing plant. This study was conducted on *Bos indicus* cattle (Braford, Red Brangus, and Simbrah) similar to those common in Florida cattle operations. A common technician using a 4-point scale scored temperament. Scores were collected at the feedlot during processing. The results showed that meat from animals with a higher temperament ranking (more irritable) was significantly tougher than from calmer animals. Using the Warner-Bratzler Shear Force test, a common automated instrument for analyzing the toughness of retail meat cuts, scientists have found that a shear force greater than 3.9 kg was unacceptable in food service establishments. In this study, 40 % of the animals with the highest temperament ranking failed to achieve this important shear force threshold. In contrast, only 11 % of the animals, scored as calm, exceeded the threshold. Meat tenderness was not the only carcass trait found to be attributed to temperament in this study. The authors also noted that calm animals had significantly fewer carcasses scored as dark lean (dark cutters) compared with animals with the highest temperament ranking (6.7 vs. 25.0 % dark lean carcasses, for temperament ranking 1 and 4, respectively).

In a second study, the authors investigated the influence of animal temperament on feedlot weight gain. This evaluation utilized 436 head of feedlot cattle derived from multiple origins representing cattle both with and without Brahman breeding influence. Again, temperament scoring was performed on all animals, during feedlot processing, using a 4-point scale. Brahman influenced cattle had higher average temperament ratings than cattle with no Brahman influence (3.46 vs 1.80 from Brahman vs. No-Brahman influence, respectively), indicating that they were more excitable during routine handling. This excitability translated over to a reduction in average daily gain during the feeding period. Brahman influenced cattle with a calm temperament gained an average of .22 lb per day more than similar bred cattle with an irritable temperament.

These data clearly suggest that the temperament of cattle directly influences feedlot performance and subsequent carcass quality. They also suggest that cattle with Brahman breeding are likely to be more irritable than non-Brahman influenced cattle in similar environments. The good news for Florida cattlemen is that these same cattle can and do perform quite well when they are calm and do not react adversely to normal feedlot processing procedures. Dr. Grandin suggests that there are many things we can do to improve handling procedures on our end so that we might better ensure calmer cattle in the feedlot. These options are too numerous to cover in this forum, however, I would urge all of us to collect literature and learn more on this important topic. Some simple items, which were covered in the lecture, include:

1. Don't allow a calf's first experience in the working facility to be negative.
2. Cover the sides of the working pens, collection tub, snake, and chute.
3. Attempt to understand cattle fear zones and use these to your advantage when moving cattle.
4. Look for reasons why cattle are not moving smoothly through the facility. Are there distractions, shadows, or intense light?
5. Only use an electric prod when absolutely needed.
6. Train your employees to understand the importance of cattle handling. Utilize some of the current training tools from

experts on the topic.

7. When retaining ownership into the feedyard, make sure your feeder shares your feelings on the importance of proper handling on cattle performance and carcass quality.

Be sure to visit Dr. Temple Grandin's website at www.GRANDIN.com for further information on the topic of livestock handling and its importance to cattle productivity. At this site you will find training tools (videos and printed materials), handling facility diagrams, and other related information. Studies discussed in this paper include:

B. D. Voisinet, T. Grandin, J. D. Tatum, S. F. O'Conner, and J. J. Struthers. 1997. Feedlot cattle with calm temperaments have higher average daily gains than cattle with excitable temperaments. *J. Anim. Sci.* 75:892.

B. D. Voisinet, T. Grandin, S. F. O'Conner, J. D. Tatum, and M. J. Deesing. 1997. *Bos Indicus*-cross feedlot cattle with excitable temperaments have tougher meat and a higher incidence of borderline dark cutters. *Meat Sci.* 46:367. (JA)

- The Soil's Seed Bank of Native Plants -

All viable seeds present in the soil or associated with litter constitute the soil seed bank. These seeds are the source for restoring plant communities after fire or disturbance by man, and they may be useful to help reconstruct native plant communities on lands that have been mined for phosphate. We conducted research to determine which plants in a flatwoods community have seed in the soil and how closely seed obtained by vacuuming litter and loose soil matches that of the soil's seed bank.

Soil cores were first collected in December 1998 on a 40 acre unit of native flatwoods vegetation at the Range Cattle REC. The 40 acre unit was burned in January 1999 and resampled in February. We had to burn the range otherwise standing vegetation interfered with vacuuming. On April 1, after several rains settled the ash, we used a gasoline-powered yard vacuum to collect material from the soil surface. This vacuumed litter was a mixture of mostly sand and some organic material, including seed. Samples were spread evenly over a layer of clean sand in trays which were arranged on greenhouse benches below a traveling sprayer that uniformly applied water four times daily. Seedlings that germinated were counted and identified over a 14-month period.

Seventy-eight plant species were identified from seed that germinated. The number of plant species and amount of seed contained in soil before burning was not different from that after burning. On average, there was about 2970 seed/m² (280/ft²) and 260 seed/kg of soil (120/lb soil). Vacuumed litter contained 55 species, about 160 seed/m² (15 seed/ft²), and 420 seed/kg litter (190 seed/lb). Seed contained in vacuumed litter was more concentrated than that in soil because seed is found mainly on or near the soil surface. Ten species made up 87% of the seed in the soil. Generally, seed of the most abundant plants found in soil were the same as those in vacuumed litter. The 10 most commonly found plants that made up the soil seed bank were also commonly found growing on the area, but 7 plants that were commonly found growing on the area never showed up in the soil seed bank. This is because these plants rely on sprouting for reproduction and produce little or no seed. Probably the most interesting find was that seed of 17 plants that were found in the soil have not been observed growing in the area.

Vacuumed litter has potential for introducing seed of native plant species onto sites where they have been eliminated. The greatest advantage of litter is the great variety of species that it contains. Unfortunately, litter does not contain seed of many of the major perennials found on flatwoods because they are not good seed producers. However, their seed could be added to litter before application or they could be established vegetatively. Although the technique has not been applied, we anticipate that an acre would yield about 3500 lb of litter. Applying litter on an acre-for-acre basis, would result in 140 seed/acre of the rarest plants found in litter. (RSK)

- Research on Big Trefoil Continues -

'Maku' big trefoil showed some potential as a winter legume in the early 1990's when it was seeded in bahiagrass at the Range Cattle REC. Some plants from a 1994 seeding at Ona are still present today. These surviving plants appear to have the disease resistance necessary to live over the summer in our tough environment. One of the problems with this surviving population is that they produce no seed since our days are not long enough to trigger flowering. There is another variety, 'Sharnae', that flowers in April, but it does not seem to have disease resistance. In a cooperative study between the Agronomy Department in Gainesville and the Range Cattle REC, an acre of Sharnae was planted at Ona and 200 surviving Maku plants were potted and placed in the greenhouse where they received 18 hours of light to force them to flower. These survivors were carried to the Sharnae field and allowed to cross with the early-flowering Sharnae. In the fall 2000, we will begin to test the progeny of these Maku mother-plants. (RSK)

- Comparison of Tifton 85 to Other Bermudagrass and Stargrass Cultivars for Production and Nutritional Value -

Throughout the southeastern U.S. bermudagrass is one of the base forages for dairy and beef cattle. In Florida, bahiagrass is the base forage, with bermudagrass and stargrass being used more as specialty grasses for hay, haylage, and grazing, especially where high yields of quality forage are desired. These grasses are especially useful for grazing by dairy cattle and for weaned calves, both of which require high nutritional forage. Well-fertilized stargrass and bermudagrass will produce about 2.0 T/A more forage than bahiagrass between October and March.

Tifton 85 bermudagrass was compared to Florona and Florico stargrasses and Florakirk bermudagrass at grazing frequencies of 2, 4, 5, and 7 wk for the warm season (May-December) and cool season (January-May) yield, total seasonal yield, nutritive value, and persistence.

The experiment was conducted over a 3-yr period at the Range Cattle Research and Education Center. In March of each year 0-50-100 lb/A N-P₂O₅-K₂O + 2.5 lb/A Cu, Zn, Mn, and Fe, 0.25 lb/A B, and 5.0 lb/A S were applied. A total of 200 lb/A N was divided into four applications (March, June, August, and October) and applied. The grazing season was from May through December each year.

Dry Matter Yield

Total dry matter yield from January through April was highest for Florakirk (1.6 T/A) and lowest for Tifton 85 (1.1 T/A) when no fertilizer was applied during the cool season. Average dry matter (DM) yield during the cool season for Florona, Florico, and Florakirk was about 0.3 T/A higher than for Tifton 85. With adequate fertility, Tifton 85 will produce respectable cool season yields.

During the warm season, Tifton 85 bermudagrass, Florona, and Florico stargrasses all produced similar DM yields averaging 6.1 T/A. Florakirk averaged 5.2 T/A which was about 1.0 T/A less than the other grasses during the warm season, but Florakirk was more productive during the cool season. Total annual DM (cool + warm season) yield was again similar for Tifton 85, Florona, and Florico averaging 7.4 T/A, with Florakirk averaging 6.8 T/A.

Nutritive Value

Crude protein (CP) and digestibility (IVOMD) for Tifton 85, Florakirk, Florona, and Florico when allowed to accumulate

during the cool season was very good. Crude protein ranged from 13% for Florico to 14% for Tifton 85. Forage IVOMD of Tifton 85, Florakirk, and Florico averaged 63%, but was lower for Florona averaging 59%. Forage content during the cool season consisted basically of new developing shoots 8-12" tall, along with dead grass that was frozen during January frosts.

Crude protein concentration and IVOMD during the warm season was excellent ranging from 14% for Tifton 85 and Florico to 16% for Florakirk. The digestibility of these grasses when averaged over four sampling dates was Florico 62%, Tifton 85 61%, Florakirk 61% and Florona 56%. Generally, the digestibility of Florona is about 3 to 6 percentage units lower than the other three grasses.

Delaying harvest or grazing from a 2 to 7 wk frequency resulted in a significant decrease in both CP and IVOMD. All grasses averaged 19% CP and 65% IVOMD when grazed at a 2 wk frequency. These values decreased to 12% CP and 55% IVOMD when grazing frequency was delayed to 7 wk.

Tifton 85 bermudagrass is an excellent cultivar and can be grown on those areas presently supporting bahiagrass, pangolagrass, stargrass and rhodesgrass. Tifton 85 is a very persistent grass but will not tolerate standing water. Forage production during the winter is good and excellent during the summer. Crude protein and IVOMD are excellent when fertilized and harvested at a 4 to 5 wk frequency. This grass can be used for both hay and grazing. (PM)

FEATURED RANCH -

Longino Ranch



Longino property spreads across 8,000 acres on the north-eastern corner of Sarasota county, adjoining Desoto county on State Road 72. The ranch is an even blend of wetland and upland forest in close proximity to the Horse Creek. Buster Longino's father and grandfather had bought this property in 1934 for a turpentine business, but that business died-out soon after World War II when synthetic substitutes came onto the market.

"Buster" T. Longino has worked for more than 50 years on the Longino Ranch preserving this environmentally-sensitive land while maintaining a viable cattle, timber and citrus operation. After serving in World War II, Mr. Longino attended the University of Florida to study forestry. This background enabled him to improve the quality of timber raised as a renewable crop in replacement of the turpentine product. However, Buster quickly recognized the virtue in diversification if business was to remain viable for the long haul. With just a few head of cattle and some advice from close rancher friends, Buster established the Longino Ranch in 1950.

Mr. Longino relied on the advice and management techniques developed by the University of Florida Range Cattle Research and Education Center and the Soil and Water Conservation Service to run his operation. He incorporated a number of innovative, cost-effective and environmentally sound best management techniques to sustain his business. They included 1) a 3-year rotational control burn to rejuvenate native pastures, 2) frequent cattle rotation between improved and native pastures, 3) following University of Florida-IFAS fertilizer recommendations and 4) seed-trees and selective cutting of only 40-year old timber of saw lumber grade. Approximately 25% of the land is established to bahiagrass pasture, but that grass also tends to spread into the native range by cattle through manure. There are 300 acres of Bigalta limpograss pasture. Just last year, Buster developed 30 acres to Florico stargrass. This new stand helped maintain growth of his calves through most of the 2000 spring drought. One ranch worker remarked in passing: "We frequently grazed that Florico pasture with 300 calves for 6 months and the stand still looks good". This year, Mr. Longino has prepared land to establish another 30 acres to Tifton 85 bermudagrass. Buster maintains between 1500 and 2000 head of cattle on the property. Most of them are Braford breed, but over the years he has cross-bred his cattle with a variety of European, African and Asian breeds including Beefmaster and more recently, Braunvieh to maintain hybrid vigor.

The most recent addition to the business is a 300-acre grove made up of selections of different varieties of citrus. Mr. Longino hired engineers to develop a state-of-the-art irrigation and drainage system in preparation for the grove. Miles of pipes were laid underground to deliver water directly to the root system of citrus trees using microjet sprinklers. This method reduces water loss to evaporation and improves efficiency of water use by citrus trees. Even more impressive in Buster's commitment to soil and water conservation was his grove's drainage set up. In the 1950's, Soil and Water Conservation Service had recommended drainage of wetlands towards increased farmland reclamation. When Buster decided to add the citrus grove in early 1990's, the Ranch was required to dig a retention pond. Instead of undertaking an extensive excavation project, Buster adopted a solution in harmony with nature - he would reestablish the adjoining wetlands that had been drained 40 years earlier!

The soil and water management practices used by Mr. Longino have resulted in a resurgence of wildlife over the entire ranch. Deer, long missing from the area, are seen running across pastures. Turkeys, wild hogs, and Sandhill Cranes are abundant on the property. As a spokesman for environmentally sound agriculture, Buster regularly provides educational tours of his ranch to local schools, churches and civic organizations. With such a load of activities, Mr. Longino still finds time to serve his community. He serves on the Southwest Florida Water Management District Board, is a member of the Sarasota County Extension Service Advisory Committee for 12 years and also served as Sarasota County Commissioner from 1984 to 1990.

Diversification of the Longino Ranch, in a harmonious way with the environment, has enabled Buster to sustain a viable agricultural operation despite the normal highs and lows of the beef, timber, and citrus industries. It is his nature to evaluate and implement new ideas - and always look into the future just as he is presently evaluating the prospect of selling a conservation easement on some portions of the property. Mr Longino, Travis and I appreciate the tour. (MBA)



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