



Cooperative Extension Service

Institute of Food and Agricultural Sciences



RANGE CATTLE REC NEWSLETTER

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Calendar Of Events

July

13-15 Forage and Pasture Management School. Session II. Sebring, FL. Ph:941-386-6540.

20 4:00- 7:00 p.m. Beef Cattle Herd Health Management Seminar. Wauchula, FL. Ph:941-773-2164.

August

10-12 Forage and Pasture Management School. Session III. Sebring FL. Ph:941-386-6540.

26 1:30-6:00 p.m. Stocking Rate Program. Wauchula, FL. Ph:941-993-4846.

September

2-3 Florida Cattlemen's Association Fall Quarterly Meeting. Ft. Myers, FL. Ph:407-846-6221

16	5:00-8:00 p.m. Winter Supplementation Program. Sarasota, FL. Ph:941-316-1000.
October	
28	9:30 a.m.-4:00 p.m. Hay Production Field Day. Palmetto, FL. Ph:941-533-0765.

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Editorial:

What is your Forage Program for the Year 2K -

A prosperous cow-calf operation depends on provision of inexpensive, adequate and nutritious feed throughout the year, good livestock husbandry, and health care. Cattle are capable of converting roughage into edible meat, however, even ruminants like cattle have definite requirements for water, protein, energy, minerals and certain vitamins which must be met in the diet. That is why the type of year-long forage program you adopt is so important to livestock production.

A forage program should aim at providing adequate digestible nutrients, distributed as evenly as possible throughout the year, and ensuring the most efficient utilization of nutrients towards livestock products. The key words in that definition are: **1) adequate digestible nutrients; 2) even distribution; 3) efficient utilization.** Although the underlying principles of a forage program are the same, each ranch is unique in terms of production goals, soil type, location, water, material and human resources, and each ranch should evolve their own special forage program.

A number of practices may be adopted to achieve the threefold objective of a forage program, some of which include, fencing, water redistribution, regulation of stocking rate, forage seeding or planting, weed control, fertilizer application, mowing, forage conservation, and intensive methods of forage utilization.

Fencing should be the forerunner of any forage and livestock improvement program. In the absence of adequate fencing, livestock go astray, water points get overcrowded, newly sown forage get destroyed even before they become established, the best feeding areas get overgrazed, land becomes destroyed and fertility is depleted. It is desirable to fence all paddocks especially those with improved forages. Generally, small paddocks (10 to 20 acres) depending on the size of operation, allow for better grazing management.

In south-central Florida, **bahiagrass pastures** provide the basic livestock feed. Some deteriorated pastures can be restored by improved management practices such as fencing, reduction of stocking rate, appropriate insect and weed control measures. Before engaging in the more expensive pasture renovation, ranch managers should identify current causes of pasture deterioration and rectify them to restore grass vigor. Reseeding should be contemplated when insufficient bahiagrass cover remains, for example, when smutgrass or soda apple infestation exceeds 80% of ground cover or following severe mole cricket damage. The quality of bahiagrass pastures may be improved by association with perennial legumes like rhizoma peanuts or carpon desmodium. Several **perennial** warm season grasses have been released by IFAS to complement bahiagrass forage production. These speciality grasses are higher yielding, have superior quality and can extend production (as hay or grazing) into the cool season (fall to spring period). Tifton-9 Pensacola bahiagrass, Floralta limpoglass, Florona stargrass, Florakirk and Tifton 85 bermudagrasses, and Suerte atra paspalum are alternative warm season grasses to choose from. Also, seed of several warm and cool season **annual** grasses and legumes are on the market for use in a year-round forage program. Pearl millet and sorghum-sudangrass hybrids (warm season annual grasses), aescynomene, alyceclover, Savanna stylo, hairy indigo and phasey bean (warm season annual legumes), ryegrass, rye, oats, wheat, barley and triticale (cool season annual grasses), and white clover, crimson clover, red clover, sweet clover and alfalfa (cool season annual legumes) are at your disposal. You may want to consult with your county extension agent regarding selection of specific varieties and cultural practices to meet your specific program needs.

Production manuals on forage cultivars have been developed by the University of Florida's Institute of Food and Agricultural Sciences (UF-IFAS) and are obtainable from your Ag. Extension Office as well. The manuals provide guidelines on site of adaptation, forage attributes, fertilizer, insect, disease, and grazing management factors for each forage cultivar. The UF-IFAS is ready to help you plan your forage program for the next century so pick up the phone and call your county livestock agent. (**MBA**)

- Copper Nutrition in Grazing Beef Cattle -

History

Copper may have been the first metal known to man. Copper tools used by Egyptians as early as 5000 BC have been excavated. Since this time, copper has been recognized as an integral component in both human and animal diets. The importance of copper in ruminant animals was first recognized when farmers noticed that by feeding copper, certain diseases such as "salt sick" and "swayback" could be alleviated. Performance

traits such as slow growth rate and reduced milk production have also been associated with copper deficiency. In other instances, hoof problems may result from the degeneration of connective tissues. Additionally, abomasal ulcers in young calves have been associated with copper deficiency. One of the most commonly reported symptoms of copper deficiency is a dulling of the hair coat. This can be best observed in black cattle that show signs of graying, particularly around the eyes and ears.

Since copper is required in only small amounts it is referred to as a trace nutrient in cattle nutrition. The optimal level of supplementation is dependent upon many factors, some of which include, the amount of copper available in the feedstuff being consumed, the stage of animal production, genetic factors, and the interaction of other elements or compounds which can antagonize the metabolism of copper rendering it unavailable for absorption in the animal.

Diagnosis of Copper

The liver is the primary copper storage organ and regulator of circulating blood copper concentrations. Liver copper levels tend to be fixed and are dependent directly upon dietary copper intake. Therefore, liver tissue samples are the best indicator of copper status in cattle. Blood copper concentrations are a poor indicator of overall copper status. This is due primarily to the sensitive fluctuations of plasma copper in response to varying levels of animal stress. Only in instances of severe deficiency are blood copper values a reliable indicator of copper status. A study reported by the University of Kentucky illustrated the use of plasma versus liver copper indices. Steers, fed a diet to induce copper deficiency, had dramatically lower liver copper concentrations (18.1 ppm) compared to control steers (305.8 ppm). However, there were no differences associated with plasma copper (.81 and .78 ug/mL for copper deficient and control steers, respectively).

When discussing copper deficiency there are two categories of classification:

Primary Deficiency

A deficiency resulting from the consumption of feedstuffs naturally low in dietary copper.

Secondary Deficiency

A deficiency resulting from the consumption of feedstuffs, which may contain adequate copper concentrations but also contain other compounds, which antagonize the normal absorption of copper.

Of the two types of copper deficiency, secondary deficiencies are by far the most common. Typically, these are a result of the combination of three compounds (copper, molybdenum, and sulfur) into an insoluble complex called a thiomolybdate. Current research indicates that molybdenum to copper ratios less than 1 to 2 combined with total dietary sulfur levels $> .25\%$ will result in a high likelihood of subsequent copper deficiency in cattle.

Copper Supplementation

Current NRC recommendations for dietary copper calls for 10 ppm in the total consumed feed. In many cases, Florida forages do not provide this recommended copper level. As well, many of Florida's forages are naturally high in molybdenum, further complicating the availability of copper in the consumed forage. Therefore, careful attention to a quality mineral supplementation program is essential to ensure adequate dietary copper intake in grazing Florida cattle.

Copper supplementation is most commonly addressed through the use of a free-choice mineral mix. In almost all cases, this form of supplementation is adequate to address the copper needs of grazing cattle. Always make sure that the form of copper being supplemented is in the sulfate form (Cu sulfate) and not copper oxide. The sulfate form of copper is known to be more available than the oxide counterpart. The form of copper used in your mineral premix will be listed on the feed tag's ingredient listing. In some instances, mineral supplements may be fortified with "organic" forms of copper. These may be listed in many different ways, including, chelated, complexed, or proteinated copper forms. Some research data has suggested that these forms of copper are more available than inorganic copper sulfate. Further research investigating their bioavailability as well as their economic suitability in grazing beef cattle is warranted. Another form of copper supplementation includes the use of copper oxide needles encapsulated in a gelatin bolus. This approach is intended to provide a slow-release supply of copper over an extended period of time. This form of supplementation may be relevant in instances where it is not possible to provide routine access to free-choice mineral. Care should be taken when using copper boluses as research from our laboratory has shown a negative impact on calf growth when both cows and calves were administered the bolus. Again, in almost all cases, careful attention to a quality free-choice mineral program, which offers copper sulfate, will address the nutritional copper needs.

In conclusion, copper, like all trace minerals, is only one of several essential nutrients required by cattle. Cattlemen should pay close attention to cow body condition, addressing deficiencies in energy and protein prior to spending time and money investigating possible trace mineral deficiencies. During situations where adequate base nutrition is being offered, but decreases in production are not overcome, a closer look into the trace mineral status of a herd may be useful. When doing so, a comprehensive evaluation of liver, serum, and forage trace mineral concentrations is the best and most useful approach to addressing possible deficiencies. **(JDA)**

- Value of an Anthelmintic Bolus for Weaned Calves in Florida -

Calves grazing Florida pastures are very susceptible to internal parasites and have to be treated with an anthelmintic frequently for best control. With repeated dosing, the expense of the anthelmintic compound combined with added penning and working of cattle is high. A bolus that continuously releases an anthelmintic compound over an extended period is designed to control internal parasite load for several months following a single dose.

Two trials were conducted at the Range Cattle REC to evaluate the benefits of an anthelmintic bolus given to weaned calves. At weaning on September 8, 1997 and September 14, 1998, 48 steer and 48 heifer calves were randomly administered either an IVOMECS[®] Sustained Release (SR) bolus or an IVOMECS[®] 1% injection. Calves were straightbred Brafordts weaned at approximately 240 days of age. All calves were placed on a bahiagrass weaning pasture and preconditioned with dry concentrate supplement and hay for 24 to 30 days.

Following the preconditioning period, calves were randomly assigned by weight and sex to 12, 3-acre bahiagrass pastures. Each pasture contained 4 steers and 4 heifers, 2 animals of each sex received a bolus and 2 received an injection. Cattle were supplemented with 6 and 3.5 lb of molasses-based supplement per calf per day for 154 and 190 days in trials 1 and 2, respectively. Hay was offered free-choice from late December to the end of each trial. Trials 1 and 2 were terminated on March 5, 1998 and April 22, 1999, respectively.

In both trials, calves given the IVOMECS SR bolus gained about 20 lb more weight than calves given the injection. The magnitude of response was greater for steers (28 lb) than for heifers (12 lb).

The cost of using the bolus over the injection were approximately \$13.50 and \$3.00 for the bolus and injection, respectively. Thus the additional cost of the bolus is approximately \$10.50 per dose. For steer calves the cost/return benefit is favorable. With an \$80 per cwt market for feeder steer calves, the additional 28 lb of gain is worth \$22.40, and the return over the added cost of the bolus is \$11.90 per calf. For heifer calves, the cost/return benefit is less appealing with the current value of feeder heifers. With a \$73 per cwt market for feeder heifers, the additional gain of 12 lb is worth \$8.76, and the return over the added cost of the bolus is a negative 1.74 per calf.

This past May we administered the anthelmintic bolus and injection to 4 month old nursing calves at marking and branding. We will wean the calves in August at 8 months of age. Giving the bolus to nursing calves will be a more useful production practice for Florida cattlemen since most market and ship calves at weaning. Hopefully we will have some positive results by next year. **(FMP)**

- Grazing to Promote Summer Annual Legumes -

Now that the summer rains are beginning to be a regular event, aeschynomene and carpon desmodium are starting from seed or making a come-back after spring drought, respectively. The rains also bring on bahiagrass, which is a tough competitor and must be held in check by grazing until the legumes are strong enough to compete with the grass. I am a firm believer that grazing will do more good than harm on legume establishment. Keep the cattle on bahiagrass until the aeschynomene is about 3-inches tall. If you want to keep carpon desmodium in a bahiagrass pasture, the bahiagrass must be grazed hard after seed-set in November through the spring months, and you need to keep periodic pressure on the grass through the summer. (RSK)

- Dr. Al Kretschmer's Tropical Legume Collection -

Over Dr. Kretschmer's 40-year career he collected seed of 6000+ tropical legumes and maintained the seed in a freezer at Ft. Pierce. When he retired in June 1998, Dr. Kretschmer had the collection moved to the research center at Ona where it is being maintained. Many of the legumes have been tested at Ft. Pierce and around south Florida, but many have not been tested under Florida conditions. Beginning in 1999 and continuing over the coming years we are field testing these legumes, beginning with those that Dr. Kretschmer felt might have some potential. Since seed is very limited, testing involves transplanting legumes from the greenhouse into bahiagrass pasture where they will be evaluated under grazing conditions. We will try to harvest seed from those that show promise and further testing will progress from there. (RSK)

- Recent Studies on Smutgrass Control -

Smutgrass remains a serious weed problem in Florida pastures. The two main species of smutgrass found in Florida are 1) *Sporobolus indicus* (small smutgrass) and 2) *Sporobolus indicus* var *pyramidalis* (giant smutgrass). Both types of smutgrass are perennial bunch plants. The small smutgrass is often infected with a black fungus on the seed heads giving them a compact appearance. Giant smutgrass generally has an open type of seed head with no fungus and broad-leaf blades at the base of the plant. The reddish smutgrass seeds remain attached to the seed head for some time after maturing. They are spread by adhering to livestock, by water, or wind and may remain viable for two or more years.

Smutgrass produces in excess of 45,000 seeds per plant with more than 1,400 seeds per head. Seed production occurs continuously throughout the growing season. Natural seed germination averages less than 9% because of a hard seed coat. Mature smutgrass plants are unpalatable to livestock, but new regrowth is consumed for several weeks after a burn or mowing. During this period of early vegetative regrowth, the quality of smutgrass forage is similar to bahiagrass.

Research has shown that mowing did not control smutgrass, but instead, helped to spread the smutgrass seed. The diameter of plants decreased under continuous mowing but the number of plants increased. When mowing was stopped, plants recovered to their previous density. Cultivation and complete renovation was expensive and gave variable and unsatisfactory results because of smutgrass re-establishment from soil seed reserves.

Studies at Ona indicated that broadcast spraying with 1.0 lb/A active Velpar[®], plus 0.1% v/v silicone surfactant to actively growing plants in July, August or early September resulted in 90% control of giant smutgrass in bahiagrass pasture. Since the giant and the small smutgrass types grow together, the same herbicide rate is recommended for the control of both types.

Mowing smutgrass to a 3" stubble and allowing the plants to regrow back to a 12" height before spraying with 1.0 lb/A active Velpar showed no improvement in smutgrass control compared with the non-mowed treatment. Mowing had no effect on bahiagrass recovery which averaged 85% ground cover at 1 year after treatment. This represented more than a 50% increase in bahiagrass ground cover 12 months after the herbicide application. If the initial smutgrass density is greater than 80%, growers should consider pasture renovation since little bahiagrass is available for stand recovery after smutgrass is killed.

Bahiagrass will turn slightly yellow about 15 to 20 days after spraying with Velpar. The bahiagrass will then turn dark green about 40 days after Velpar application. This green color will be darker than the non-treated pastures.

Velpar will kill oak trees, therefore caution should be exercised when spraying smutgrass in bahiagrass pastures with oak trees. Always read the Velpar label for complete instructions. **(PM & MBA)**

Featured Ranchers: The Florida Cattlemen's Association Best Management Practices (BMPs) for Water Quality Conservation - Key Points



In a landmark event in the history of environmental regulatory compliance, the Florida Cattlemen's Association unanimously adopted, at the recent annual convention on Marco Island, their self-initiated, self-imposed guidelines on water quality best management practices for Florida cow-calf operations. By their act, the Cattlemen's Association has shown leadership to the Agricultural Community in their commitment to conserving Florida's natural resources, and therefore, members deserve all the accolades they received from the Florida Commissioner of Agriculture and the Directors of the EPA and DEP.

The draft manual on BMPs provide guidelines for 1) water quality risk assessment to help identify potential problems, 2) practices that will help improve the quality of water discharged from grazing lands, 3) sources of obtaining further information and/or technical assistance on water quality related problems, and 4) methods to conduct other activities associated with ranching to meet Florida water quality standards.

The salient pollution prevention points of the BMPs are that:

1. **State Statutes:** State water quality standards generally apply to all water features (rivers, lakes, streams, springs, wetlands, fresh, brackish, saline, tidal, surface or underground waters) that **run through** your property and are not entirely owned by you.
2. **Livestock Concentration:** Areas where cattle tend to congregate or have access to water bodies, tend to have the greatest potential to contribute to water pollution and should be planned and watched carefully.
3. **Ranch Conservation Plan:** A written water quality conservation plan should be used to document all planned completed activities designed to impact water quality on your property. This plan should contain all activities that have a potential impact on soil, water, air, plant, animal and human resources on your farm since all are interrelated.
4. **Vegetative Cover:** Maintenance of adequate vegetative cover especially in fragile watershed areas is highly recommended. This may be accomplished by adjusting stocking rate and by adoption of rotational grazing management systems to prevent overgrazing.
5. **Watering and Feeding Sites:** Develop alternative water sources to attract animals away from streams, drainage canals, and lakes. Place supplemental feeding and mineral troughs at least 100 ft from storm water drainage ways, streams, drainage canals, lakes, wetlands, wells and sinkholes.
6. **Holding Pens:** Locate new cow pens more than 200 ft from drainage ways, canals, streams and lakes or include a berm to prevent runoff into the water body. Use filter strips, grassed waterways, berms or a waste management system to minimize pollution to water bodies from existing pens.
7. **Pollution Abatement Structures:** Plugging of canals and/or diversion of natural surface flow through internal marshes, cypress ponds or other wetlands that assimilate nutrients may be used to reduce pollution by sediments, nutrients and organic matter from holding pens but such activities **may require permitting** from your Water Management District.
8. **Minimizing Off-site Discharge:** Plug unnecessary drainage canals to retain water on your property. Use control structures such as flash board riser on culverts to

retard water flow. Utilize artificial ponds in upland areas to reduce cattle use of natural wetland systems. When cleaning ditches, mechanically remove vegetation instead of using herbicides and pile vegetation and sediments away from the ditch so nutrients released from decomposition do not wash back into the water.

9. **Source Control:** Use a nutrient management plan by using IFAS soil and plant nutrient tests and fertilizer and sludge application rate recommendations. Use a pesticide management plan by following directions on pesticide labels, preventing accidental spills, properly disposing of empty containers, having a spill response plan in place, and carefully storing all chemical materials (pesticides, fertilizers, animal drugs, fuels)

10. **Erosion Prevention:** Ensure quick replacement of vegetative cover after land clearing. Plant grass buffer strips during land clearing along drain areas. Follow DEP's erosion and sedimentation control practices during construction. Minimize vehicular crossing through streams and canals but instead use stabilized culverts or hard surface crossings. Leave some vegetative cover when mowing canal banks.

11. **Employee Training:** Properly inform all employees about the BMPs. Review your conservation plan, priorities and goals with your employees. Re-train employees annually and whenever changes are made. Train employees to document and retain records of activities.

The entire BMPs manual is currently in print and request for copies may be directed to the Florida Cattlemen's Association, P.O. Box 421929, Kissimmee, FL 34742-1929.

The Range Cattle REC Newsletter contributors will like to add our note of congratulations to the Florida Cattlemen for their foresight in promoting a safer Florida environment. (MBA)

The use of trade names, or the products they represent, is to provide specific information. It is not an endorsement by UF-IFAS of their use over products of similar effectiveness in controlling parasites in calves or weeds.



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