



# Range Cattle REC Newsletter



**Calendar of Events**

<u>Month</u>	<u>Date(s)</u>	<u>Event</u>	<u>Location</u>
September	16-18	Forage and Pasture Management School	Sebring FL
October	6-10	Cow-Calf Seminars	Check with your local extension office for seminar near you.
October	18	4H Foundation Clay Shoot	Orlando FL
October	21-23	SFBFG AI School	Wauchula FL
December	3-4	3 <sup>rd</sup> Annual International Ag and Trade Policy Conference	Naples FL
December	4-5	FCA Quarterly	Gainesville FL



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## Seed Storage

Seed storage should be a concern for cattlemen when carrying unused portions of seed over the summer for use the following year. I have seen pallets of bahiagrass and aeschynomene seed in open storage on ranches. In addition to the initial cost of seed, the wasted dollars are compounded considering the cost of seedbed preparation and sowing. Even with the best seed, pasture establishment is risky, so why add to the uncertainty? All seed has a limited shelf-life. Some seed, like Pensacola bahiagrass, may improve in percentage germination over time, but that is true if there was high dormancy after harvest. In this case, dormancy breaks down over time and high humidity aids in the process. For most seed, germination declines rapidly in our environment.

High humidity during storage is the greatest cause of reduced seed viability. Research has shown that storage in an environment artificially dried to 12% relative humidity gave excellent maintenance of viability over 1 year even when temperature was 95 °F. On the other hand, cold, damp storage was lethal to seed. This suggests that the primary consideration for storage should be for dehumidified storage with refrigeration a secondary consideration. On a ranch, storage in a relatively small, sealed room with an inexpensive dehumidifier is the minimum. Air-conditioned storage may not be better than dehumidification alone because lowering the air temperature may simply increase relative humidity. Combining air-conditioning and a dehumidifier would be ideal. Although it may not be practical, a rule of thumb for good storage is the sum of temperature (°F) plus relative humidity should not exceed 100.

RSK

## Development and Screening of Bahiagrass That Will Grow During Short Days

Bahiagrass is grown on about 70% of the improved pastures in Florida. This grass is desired by ranchers because of low fertility needs, persists when fertilizer is reduced or omitted, is established from seed, and is long lived.

Bahiagrass will persist under continuous close grazing and can provide additional income from seed and/or sod. The major problem with bahiagrass is 90% of its yield is produced between April and September with 10% forage production during the winter season.

Studies indicate lack of winter production is not due to temperature, rainfall, or fertility but to day-length. Therefore, a 2-year cooperative study with USDA-ARS was conducted at the Range Cattle Research and Education Center, Ona, to determine the influence of extended day-length on winter forage production of 'Pensacola' bahiagrass, 'Florona' stargrass, 'Florakirk' and 'Tifton 85' bermudagrass. Lights were installed so 70% of each grass plot was exposed to 15 hours of day-length during the winter (October-March) and 30% of the grass plot was exposed to normal day-length. The extended lights trick the plants into thinking that it is still summer in December. Consequently the plants on the extended day-length do not go dormant and continue growing. The intensity of the lights is only 1% of the mid-day sun, therefore no photosynthesis occurs from the lights used to extend the day-length. Plants were harvested year round.

Pensacola bahiagrass yielded a 2-year average increase of 1.5 tons/A dry matter during winter with little effect on forage quality when exposed to the extended day-length. Breeding studies were then initiated to develop a Pensacola bahiagrass that would grow during winter (short days). Other traits selected for include frost tolerance, resistant to dollar spot, ample rooting, and rapid seed germination. Plants were grown in nurseries at Marianna and Ona, Florida. The most desirable plants expressing the above characteristics were selected from both nurseries and crossed to develop a superior bahiagrass population. Plants from this population produced seed that were grown in nurseries at Marianna and Ona and the selection process was repeated annually for 3-years. After 3 breeding cycles (Cycle 3), plants were tested at Ona under a clipping study during the winter of 2002-2003. The new Cycle 3 bahiagrass out-yielded Pensacola by 1.1 ton/A, Argentine by 1.8 tons/A, and Tifton-9 by 0.4 tons/A.

Selection, breeding, and the development of Cycle 4 continued. During the fall of 2003 both Cycle 3 and 4 will be clipped in separate studies to determine if Cycle 4 shows improvement over Cycle 3 in winter forage production and frost tolerance. Superior Cycle 4 plants will be tested under a mob grazing study in 2004 to determine plant tolerance to grazing. Forage quality is being monitored continually for each cycle. Cycle 5 will provide Florida and South Georgia growers with a Pensacola-type bahiagrass that will grow during the cool season. Our goal is for Cycle 5 to produce about 1 ton/A more than Tifton-9, have improved frost tolerance, be resistant to dollar spot fungus, and be tolerant to grazing livestock.

PM, AB

### **Summary of USDA's July 1, 2003 Cattle Inventory**

The USDA's July 1 cattle inventory report showed a one percent decline in inventory. However, there were a couple of significant figures that will be of interest to beef cattle producers as business plans are set in action for the next calf crop.

All cows and heifers that had calved, at 42.7 million, were slightly below the 2002 level of 42.9 million. This figure divides out to 33.6 million beef cows and 9.1 million milk cows. Beef replacement heifers were even with 2002 at 4.6 million while milk replacement heifers were down three percent to 3.6 million.

The shrinking inventories of the past several years along with the closing of the Canadian border have had an impact on the total number of cattle and calves on feed. This figure was down six percent to 11.7 million.

The fact that replacement heifers have remained steady is an indication that a change may be taking place. Be keeping an eye on the level of heifer placements into feedlots. This has been rather steady throughout the year near 35 percent. Should the figure begin to fall, it will be a clear indication that herd rebuilding may be beginning. The drought conditions out west will continue to have an impact on herd expansion potential however.

TEA

### **High-Protein, Salt-Limited Creep Feed**

Conventional creep feeding that allows calves free-choice access to creep supplement for several months before weaning was found to be uneconomical. The cost of creep feed consumed, which can exceed five pounds per calf per day, outweighs the returns in increased calf gain. The possible exception is creep feeding calves nursing first-calf heifers or all calves during a drought period. Cows, as well as calves, benefit from creep-fed calves in these situations.

Limited creep feeding, evaluated by Joe Crockett and Findlay Pate in the 1970's, is a practice that offers calves a grain-based creep feed only a few weeks before weaning. An average feed intake of less than one pound of creep feed per calf per day minimizes cost. However, this small amount of creep feed teaches calves to eat before weaning, and results in better gains and fewer health problems of calves after weaning. Most Florida cattlemen market and ship their calves at weaning and would not benefit from limited creep feeding.

Another concept of creep feeding nursing calves was evaluated by researchers in Oklahoma in the 1980's. It involves a high-protein creep supplement like cottonseed meal, with 5 to 10% salt added to limit intake of creep supplement to one pound or less per calf per day. This creep supplement is offered from 2 to 4 months prior to weaning.

In four Oklahoma trials, nursing calves fed a cottonseed meal, salt-limited creep feed consumed an average of 0.72 pounds of creep feed per calf per day. These calves gained 0.27 pounds more per day than calves not offered creep feed. On today's market, a \$7.20 investment in a high-protein, salt-limited creep feed would return \$24.30 more calf when sold at weaning.

Dr. Bill Kunkle, Sid Sumner, Pat Hogue and Ed Jennings conducted five trials in the 1990's in south Florida to confirm the response of nursing calves to high-protein, salt-limiting creep feed. Cottonseed meal with 8% salt was creep fed for an average of 54 days.. Calves fed creep feed ate an average of 0.68 pounds of creep feed per calf daily, and averaged 0.31 pounds per day more gain than calves not fed creep feed. On today's market a \$6.80 investment in a high-protein, salt-

limited creep feed would return \$27.90 more calf when sold at weaning.

Short term creep feeding of calves with a high-energy creep supplement 2 to 3 weeks before weaning will return dividends to cattlemen who retain ownership of calves after weaning. Creep feeding nursing calves with a high-protein, salt-limited supplement for 2 to 4 months before weaning will provide cost efficient gains before weaning, and probably benefit creep-fed calves after weaning.

FMP

### **Florida Flatwoods Forage Cost Budgets Released**

For several years, the IFAS cost budgets for establishment and maintenance of five key South Florida forages had not been updated. With work from Drs. Paul Mislevy and T. E. Anton at the Range Cattle REC and Mr. Scott Smith in Food and Resource Economics, the budgets have been updated. As of this writing, they were available only on the Florida Cattle Market Update website, <http://rcrec-onc.ifas.ufl.edu/markets.html>. However, they will soon be available via EDIS, <http://edis.ifas.ufl.edu>, in a complete packaged PDF file (if you lack internet access, ask your County Agent for assistance). Additionally, the Range Cattle REC will be releasing the budgets in a hard-copy format on a limited basis.

The budgets include establishment on native flatwoods, establishment on previously established flatwoods, and maintenance of bahiagrass, digitgrass, stargrass, bermudagrass, and limpograss. Each budget includes the operating and ownership costs of each venture. A brief narrative included in the EDIS and hard-copy releases explains the equipment and methods used in determining the prices allocated to each activity. These forage budgets will be used to establish pasture prices for the upcoming Cow-Calf budgets to be released by year's end.

TEA

### **Mole Crickets on the Run**

In the past 20 years mole crickets have destroyed thousands of acres of bahiagrass pasture

throughout Florida. At first, the area most affected in south Florida was from Pasco County south into Hillsborough, Manatee, and Sarasota Counties. Areas in Orange and Osceola Counties were heavily infested with mole crickets. Today, mole crickets are found in large numbers in various spots throughout Florida.

In the late 1970's UF/IFAS research and extension faculty studied methods to control mole crickets. Chemical treatments were effective, but for a short while. Only biological control methods offered hope for long-term control. The most promising organism was a nematode from South America which specifically infects and kills mole crickets.

This nematode was produced commercially in Florida and marketed to golf courses in the late 1980's. The nematode was not marketed to ranches because of the high cost required to purchase and apply nematodes over the entire pasture area (\$400/acre). Subsequently, commercial production of mole cricket nematodes was discontinued.

In the mid 1990's a group of UF/IFAS faculty met and discussed the ever increasing problem with mole crickets destroying Florida's bahiagrass pasture. Dr. Martin Adjei, a newly hired extension agronomist at Ona, chose to provide leadership for a second attempt to control mole crickets in Florida and applying these methods in the real world.

Over the past six years, Dr. Adjei has led a group from Ona to evaluate mole cricket populations and treatments that control them. Dr. Adjei determined that the only effective treatment for long-term control of mole crickets was nematodes. Also, results suggested that effective and cost efficient control was obtained by applying the nematodes in strips (one eighth of pasture area) rather than inoculating the entire bahiagrass pasture.

Over the past two years Dr. Adjei has applied nematodes to mole cricket-infested pastures at over 20 ranch sites. Dr. Adjei has shown that nematodes applied in strips at the correct time in the fall and spring, and when moisture conditions are adequate, the nematodes will spread slowly across the entire pasture and control the resident mole cricket population for a long time.

A commercial supply of the mole cricket insecticidal nematode named Nematac S is now available. Purchase information can be obtained from Becker Underwood at 1-800-232-5907, or their local representative at (941) 350-7291.

Ingram Grove Service, Inc. at Winter Haven will apply the nematodes commercially. Call (863) 422-4918 (office) or (863) 287-3438. Cost is \$25 per acre for the nematode and from \$7 to \$15 per acre for the application on sizeable acreage.

Information on nematode application can also be obtained from Dr. Adjei at the Range Cattle REC at Ona (863) 735-1314.

Now is the time to apply nematodes to infect mole crickets. We have a tool to do the job at a reasonable cost. Let us apply this new technology and put mole crickets in their place like we did screw worms in the late 1959's.

MBA, FMP

## **Basic Energy and Protein Knowledge for Grazing Cattle**

### **Energy (TDN)**

Energy is the major nutrient required by cattle. It is the fuel that drives all body functions. In grazing cattle we commonly measure energy as units of TDN (total digestible nutrients). Grazing cattle obtain the majority of their energy from the ruminal digestion of forage. Therefore, forage quality becomes a primary consideration when balancing a grazing cow's diet. Intake of energy, through forage, is limited by the gut capacity of the cow. As forage quality decreases, the ruminal digestion and passage rate also decrease. Therefore, cows will consume less low quality forage compared to higher quality forages. This creates a negative associative effect, which is a major consideration when balancing a cow's diet (Table 1).

As shown in Table 1 lower quality bahiagrass results in less forage consumed, which further translates into less TDN consumed. The result is an energy deficiency in the cow's diet. This cow must be supplemented with at least 2.6 lb of TDN per day or she will lose body weight.

### **Protein**

Another uniqueness of the ruminant is its ability to synthesize protein using non-protein nitrogen such as urea. Ruminal microbes utilize non-protein nitrogen, along with much of the natural protein consumed, and produce microbial protein. Microbial protein is an important component in the grazing cow's diet.

Like TDN, the forage protein concentration is the most important contributor to meeting the cow's protein requirement. As forage quality declines, most likely due to maturity, levels of TDN and protein also decline. Therefore, the example used above could also be duplicated with protein. Low quality forages may often lack adequate protein to meet the cow's requirement. In these situations, protein supplementation must be considered to maintain cow performance.

As shown in Table 2 lower quality bahiagrass results in less forage consumed, which further translates into less protein consumed. Like TDN, this protein deficiency will need to be supplemented to maintain adequate nutrition and cow productivity.

The use of NPN is an important economic consideration when designing protein supplements. Mature cows are able to readily utilize NPN, which is a less expensive source of nitrogen compared to natural protein alternative. However, growing cattle or cattle in low body condition should be supplemented with natural protein (i.e. cottonseed meal or soybean meal), which will improve their performance compared to NPN.

JDA

Table 1. Effect of forage quality on meeting the energy requirements of a 1000 lb cow in late gestation.

Parameter	Bahagrass Pasture		
	High Quality (55 % TDN)	Med. Quality (52 % TDN)	Low Quality (45 % TDN)
Voluntary Intake, % body wt. <sup>1</sup>	2.25	2.00	1.75
Dry Matter Intake, lb	22.5	20.0	17.5
TDN Intake, lb	12.4	10.4	7.9
TDN Requirement, lb	10.5	10.5	10.5
Deficit, lb	1.9	-0.1	-2.6

<sup>1</sup>Voluntary intake assumes there is adequate pasture forage available.

Table 2. Effect of forage quality on meeting the protein requirements of a 1000 lb cow in late gestation.

Parameter	Bahagrass Pasture		
	High Quality (9.0 % CP)	Med. Quality (7.0 % CP)	Low Quality (5.0 % CP)
Voluntary Intake, % body wt. <sup>1</sup>	2.25	2.00	1.75
Dry Matter Intake, lb	22.5	20.0	17.5
Protein Intake, lb	2.0	1.4	0.9
Protein Requirement, lb	1.5	1.5	1.5
Deficit, lb	0.5	-0.1	-0.6

<sup>1</sup>Voluntary intake assumes there is adequate pasture forage available.

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