UNIVERSITY OF FLORIDA
EXTENSION
Institute of Food and Agricultural Sciences

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October 2002
Volume 5, Number 3

RANGE CATTLE REC NEWSLETTER

Buck Island Ranch. Photos: Tom E. Anton

Calendar of Events

Month	Date(s)	Event	Location
October	17	FL Section, Society for Range Management FL Chapter, Soil and Water Conservation Tour	Ona FL
November	1	Hardee Farms Black Bull Sale	Cheifland FL
November	1	Hereford Association of Florida Annual Bull Sale	Bartow FL
November	7	Adams Bull Sale	Ft. Pierce FL
November	14-15	2nd Annual International Agricultural Trade and Policy Conference	Gainesville FL
December	5-6	FCA Quarterly Meeting	Sebring FL
January	16	FL Cattlemen's Institute and Trade Show	Kissimmee FL

IN THIS ISSUE

Changing of the Guard

With this issue of the Range Cattle REC Newsletter, Dr. Martin Adjei has handed over the duties of editor. Over the next few issues, be looking for some changes in the look as I put my stamp on the newsletter. We at the RCREC wish to thank Dr. Adjei for his service in starting and managing the newsletter up to this point.
TEA

Allow Carpon Desmodium to Produce Seed in Your Pasture

Carpon desmodium is the most practical pasture legume available in central and south Florida. It is an excellent companion to bahiagrass because they are both adapted to similar soil and environmental conditions, and they both can survive under the management used by Florida cattlemen. Although it is not as nutritious as aeschynomene or stylosanthes, carpon desmodium is a much more reliable legume for most cattlemen.

Individual carpon desmodium plants normally last 3 to 5 years, so they need to be replaced in the pasture. You can assure that there will be plenty of seed in the soil seed-bank by removing cattle from pasture when carpon desmodium begins to flower in early October. Keep cattle out of the pasture until mid-November. Allow cattle to graze the pasture heavily after seed set. Seed that is eaten will pass through cows, and they do a good job of distributing its seed.
RSK

Ryegrass in Central Florida

Ryegrass in central Florida produces from January to mid-April and the forage contains about 15% crude protein and 75%TDN. Ryegrass can have a place on the ranch in this region but only for very specific uses such as early-weaned calves, replacement heifers, or to help get cows to breed. Over-seeding ryegrass onto bahiagrass in the fall is not recommended because bahiagrass does not become dormant here like it does in north Florida. As a result, ryegrass yields when grown in bahiagrass are about 20% of ryegrass grown in a prepared seedbed. If ryegrass is grown in central Florida, it is highly recommended that it be used as part of a pasture renovation program where ryegrass is sown in a prepared seedbed in early November. Money spent on liming, fertilization, and land preparation for ryegrass will benefit the perennial grass when it is planted in the old ryegrass pasture the following summer.
RSK

Commodity Feeds as Winter Supplements

A number of commodity feeds derived as by-products from food processing are available to Florida ranches as winter supplements for beef cattle. The one most available and currently inexpensive, especially during the winter months, is dry, pelleted citrus pulp. During the past few winters, dry citrus pulp has been priced between $40 and $60/ton, FOB Okeechobee.

Dry citrus pulp has a good energy level (74% TDN) but is low in crude protein (6%). Dry citrus pulp could be fed alone at moderate levels to mature brood cows, but needs additional crude protein when fed to yearlings and first or second-calf cows. A medium to high crude protein liquid feed could provide the needed crude protein.

Whole cottonseed is a commodity feed that could be mixed with citrus pulp to provide protein. Cottonseed contains 23% crude protein and 96% TDN, plus 25% oil

which stimulates reproduction. Whole cottonseed is fed alone and on the ground in many areas of the Southeast. Do not feed cottonseed to young bulls or heifers because of the gossypol toxin problem.

Two by-products from corn processing are hominy and corn gluten feed. Hominy contains 12% crude protein and 86% TDN, slightly higher than corn. Corn gluten feed contains 21% crude protein and 75% TDN. Corn gluten feed could be mixed with low protein ingredients to provide a better protein balance.

Soybean hulls contain 11% crude protein and 70% TDN. Soy hulls contain a relatively high level of a fiber. While this fiber is very digestible, it allows ad lib feeding soy hulls without causing founder. Many ranches feed soy hulls alone as a weaning or growing supplement with good results. Research at Ona shows that soy hulls are equal to corn when fed at moderate levels to yearling cattle. Soy hulls are fluffy, but pelleted soy hulls are available at a similar price.

Wheat middlings are a by-product of processing wheat into flour. Wheat midds contain 16% crude protein and 75% TDN. Wheat midds can be fed alone, and research studies in Florida show that wheat midds are equivalent to corn when fed to provide up to 50% of the total diet TDN. Wheat midds are currently priced at about $50/ton FOB Okeechobee.

The above shows a number of commodity or by-product feeds available to Florida cattlemen. Their prices are variable depending on supply. Therefore, it is important that prices be regularly monitored to purchase those with the lowest cost.

Commodity feeds are sold in bulk or truckload lots which is a disadvantage to cattlemen with small herds. Check with several feed dealers to determine if they might have commodity feeds that could be bagged at a reasonable price. Another possibility is that several small ranches may coop to purchase truckload lots.

FMP

Mineral nutrition for bulls – How important is zinc?

Introduction

Over the past decade, the introduction of organic trace minerals have made their way into the “main-stream” and are now a commonly included alternative in many grazing cattle trace mineral formulations. Organic mineral is a generic term used to describe the condition whereas an inorganic, soluble salt is joined with an organic carrier or ligand, typically an amino acid or small peptide. This complexing action may occur in a variety of manners, most of which are defined and controlled by the American Feed Control Officials. Often, the term “chelated mineral” is used to describe all organic mineral sources. This is a misnomer. Some common organic mineral categories include, trace mineral amino acid complexes, trace mineral amino acid chelates, and trace mineral proteinates.

<u>Common organic trace minerals:</u>

Zinc *Possess the most scientific support as an effective organic nutrient in cattle mineral supplements.*

Copper *Second most relevant organic nutrient. Probably most important when forage molybdenum levels are above 2 ppm.*

Manganese *Not much support as a single organic inclusion, however, organic manganese is often available in commercial organic trace mineral blends.*

Chromium *Currently not approved in the USA. Data suggests that supplemental organic chromium may be effective during periods of increased stress.*

Cobalt *Similar to manganese, probably not useful as a single inclusion, but often-found in commercial organic trace mineral blends.*

The theory behind the benefit of organic minerals is based on the concept that many inorganic mineral nutrients are bound to an organic ligand in the small intestine prior to absorption. By offering a trace mineral source, already bound to an organic ligand, the absorption efficiency (bioavailability) may be improved. This theory has good supporting evidence for organic zinc sources and, most likely, holds true for organic copper as well. Organic trace minerals will not be cost effective for every situation. However, as production practices continue to become more focused on efficiency and overall performance, advances in trace mineral supplementation may offer valuable tools to include in our management strategies. The following study investigates the efficacy of organic vs inorganic zinc on fertility measures in growing Angus bulls.

Effect of Zinc Source and Level on Measures of Fertility in Growing Bulls
A Controlled Field Study

The important role of zinc in male fertility has been recognized for many years. Research in young rams has shown that zinc deficiency results in a lowered capacity to produce testosterone, resulting in impaired testicular development. The influence of zinc deficiency on reproductive failure in man has also been reported. In some cases, human males diagnosed as having fertility complications have responded favorably to zinc supplementation. One of the most commonly reported links between dietary zinc and male fertility is the association of dietary zinc and the functionality of spermatozoa.

The following field study investigates the effect of zinc level and source in growing bull diets on subsequent measures of fertility. Measures of growth, sexual maturation, and fertility were compared when bulls were supplemented with either inorganic (zinc sulfate) at 40 and 60 ppm of the total diet or a combination of organic (proteinated) zinc and zinc sulfate at 40 ppm.

Yearling Angus bulls (n = 325) were stratified by body weight and allotted into six pens of similar size. All bulls on test originated from a common ranch and were of a similar genetic background. One of three treatments (2 pens / treatment) were formulated to provide targeted levels of dietary zinc; 1) dietary zinc level of 40 ppm all supplied by zinc sulfate (ZnS), 2) dietary zinc level of 40 ppm with 33.3% supplied by zinc proteinate and 66.6% supplied by ZnS (ZnPS), or 3) dietary zinc at a level of 60 ppm all supplied by ZnS (ZnHi).

Initial and final liver biopsies (n = 10 / pen) were collected and analyzed for zinc concentrations. Individual bull weights and scrotal measures were also collected at the start and conclusion of the trial. To control between-person variation, a common person collected all scrotal measures at each time period.

Semen from bulls intended for public sale (n=167) was collected by electroejaculation and evaluated for motility and morphological abnormalities. Bulls with percent normal sperm cell counts of < 70 percent or with motility scores < fair (motility scores = poor, fair, good, very good) were considered classification deferred and tested at a later date following

the conclusion of the trial.

Following 126 d of treatment, ZnHi bulls had a greater increase in liver zinc concentration when compared to ZnS but not ZnPS treatments. No differences in bull ADG or percentage change in scrotal circumference were detected. Bulls fed a combination of ZnS and ZnPS (40 ppm) had higher percent of normal sperm cells in the ejaculate when compared to ZnS but not ZnHi. Fewer bulls were classification deferred when fed a combination of ZnS and ZnPS (40 ppm) or a higher level of zinc sulfate (60 ppm) compared to ZnS. In all fertility measures observed in this trial, bulls receiving the zinc proteinate / zinc sulfate combination at 40 ppm rated highest, followed by zinc sulfate at 60 ppm, and lastly by Zn sulfate at 40 ppm.

These data support the importance of dietary zinc in bull fertility. Additionally, it appears that the use of organic zinc in growing bull diets may improve subsequent fertility measures. However, when compared to inorganic zinc at an increased level, the magnitude of improved fertility is lessened. In terms of growing bulls, however, **it would appear probable that the recommended level of 30 ppm in the diet (NRC, 1996) is too low.** Further studies that investigate higher levels of zinc both in the organic and inorganic forms are merited.

JDA

Mole Cricket Management - Custom Nematode Application on Pasture

Mole crickets cause about $44 million worth of damage to bahiagrass forage production every year. An additional $10 million is spent annually by cattle producers to renovate pastures completely destroyed by mole crickets.

As expected, this year's crop of mole crickets started to hatch from eggs in June. The nymphs have grown larger (juveniles) and are just at the point where they are beginning to develop wings and turn into adults in late September. The mole cricket nematodes produced by Becker Underwood are available on the market as Nematac® S. These nematodes work best on adult mole crickets. A series of workshops will be organized jointly with county extension faculty to demonstrate custom nematode application on pasture this fall.

Mole crickets are very mobile and our field tests have shown that infected mole crickets can spread nematodes throughout a pasture if the nematodes are strip-applied correctly at 125,000 nematodes/A. This is

Table 1. - The effect of zinc level and source on change in scrotal circumference and liver copper, percentage normal sperm cells in the ejaculate, and percent bulls classification deferred.

Item	Treatment[c]		
	ZnS	ZnPS	ZnHi
Change in scrotal circumference, cm	8.6	9.3	9.1
Change in liver zinc concentration, ppm	-9.8	1.2	20.6
Normal sperm cells in the ejaculate, %	55.8[a]	68.9[b]	62.5 [ab]
Bulls classification deferred[d], %	77.6[a]	51.5[d]	58.8[d]

[ab]Means with unlike superscripts within row differ (P < .05).

[c]ZnS = zinc sulfate, dietary level of 40 ppm; ZnPS = zinc sulfate (2/3) and zinc proteinate (1/3), dietary level of 40 ppm; ZnHi = zinc sulfate, dietary level of 60 ppm.

[d]Bulls with percentage normal sperm cell counts < 70 percent or with motility scores < fair (motility scores = poor, fair, good, very good) were considered classification deferred and tested again at a later date following the conclusion of the trial.

one-eighth of the 1 billion nematodes/A rate that is currently recommended for applying on golf courses. In order for the strip-application at the reduced nematode rate to be successful, a slit injection machine must be used to place nematodes suspended in water at 1 inch below the soil surface. The slit is immediately closed with press wheels to protect the nematodes from direct sunlight. A special machine has been developed by Bill Coapland Company based in Alachua County, Florida which will be tested during our fall workshops.

The program schedule up to date is as follows. There maybe some minor changes in individual county's activities in the final program:

Mole Cricket Biocontrol:
Demonstration of Commercial Nematode Application on Pasture

LOCATIONS & TIMES
Please, RSVP to the local contact person for directions and registration since lunch will be provided at some locations)

TUESDAY OCTOBER 15
HARDEE/DESOTO COUNTIES
Time: 9:00 AM to 12:00 PM
Location: **CIRCLE 5 BAR RANCH,** Gardner
Contact: Lockie Gary 863-773-2164.

WEDNESDAY OCTOBER 16
MANATEE/SARASOTA COUNTIES
Time: 9:00 AM to 12:00 PM
Location: **REGAN RANCH,** Bradenton
Contact: Travis Seawright 941-722-4525.

THURSDAY OCTOBER 17
POLK/PASCO COUNTIES
Time: 9:00 AM to 12:00 PM
Location: **TOMKOW BROTHER'S RANCH,**
Contact: Jim A. Stricker 863-519-8677.

There is no charge for attendance but please, register with your county extension agents now if you plan to attend any of these workshop so we can get a head count in advance.
MBA

Ryegrass Cultivars for Central Florida, 2002-03

Annual ryegrass is a cool-season bunchgrass which can be an important source of forage during winter and early spring. Ryegrass, seeded alone after a vegetable crop or used in a pasture renovation program or into a perennial grass sod, can provide high quality forage which is quick to establish, provided adequate moisture is available. Ryegrass, seeded in cultivated soil or sod that has been treated with a herbicide to decompose vegetative cover, establishes rapidly and produces increased biomass yields when compared with seeding ryegrass into a live sod. Cultivated and decomposed sod areas seeded to ryegrass can be grazed within 6 to 8 wk after seedling emergence, and grazing may extend for 90 to 120 days. Seeding ryegrass into live sod normally requires twice the nitrogen rate and produces 20% the yield of ryegrass seeded in cultivated or decomposing sod. Ryegrass responds well to nitrogen fertilization leading to rapid growth and increased forage quality. Ryegrass stockpiled for 40 to 50 days during February and March can also be harvested as hay or silage during late March and early April yielding 1.5 to 2.0 ton/acre dry matter (DM). The crude protein (CP) concentration and in vitro organic matter digestion (IVOMD) will average 15 and 75%, respectively.

When seeding ryegrass into cultivated soil, it is extremely important to cultivate only enough land area that can be

seeded that day. This method will conserve moisture and assure rapid establishment. Ryegrass should be seeded at 20 lb/A on tilled soil, cover seed by running grove disk in closed position follow by a firm packing with a roller.

Ryegrass fertilization consists of 50-30-60 lb/A N-P_2O_5-K_2O plus 1.5 lb/A Zn, Mn, Cu, Fe (sulfate form), 0.15 lb/A B and 6 lb/A S. Following each grazing 35 lb N/A should be applied. Ryegrass cultivars that have performed well during the past 3 to 6 years consist of Big Daddy, Jumbo, and Prine (3.0 T/A DM yield), Jackson (2.9 T/A), FL 80, ME-94, King, and Brigadier (2.8 T/A), Gulf, Surrey, Marshall, Fantastic, and Ed (2.7 T/A), Graze-N-Gro (2.6 T/A), and Surrey II (2.5 T/A). Generally, there are only small yield differences between the better ryegrass cultivars grown in central Florida. Growers should consider seeding ryegrass on fields that are planned for pasture renovation during 2003. The ryegrass procedure helps decompose heavy sod and eliminate hard to kill weeds like common bermudagrass.

PM

The Importance of Cost-Benefit Analysis

Introduction

Costs are a major concern in the decision making process of all firms. However, sometimes, those involved in the decision making process may get too concerned with only the costs of a proposal and forget there is another side to production, and hence the profit, equation. This is the added revenue, or the benefit, of the proposed investments.

In the profit equation, total costs (TC) are subtracted from total revenues (TR). Thus, $\Pi = TR - TC$ where Π is profit. However, one has to remember that there is another equation that is directly related to profit and underlies the business structure. This is the production equation, called a production function, where inputs are combined to create an output or set of outputs.

In some cases, added costs can come from changes in the price of an input. This is an instance where there will be no change in the output levels and no additional revenue (benefit) is gained. Other added costs may occur as a result of a change in inputs or the addition of inputs. These changes are likely to have an effect on the output production and, hence, on the revenue total as well. This is where cost-benefit analysis becomes important to the firm's decision making process.

Examples

To further illustrate this, let us examine a couple of scenarios in a cattle enterprise:

Scenario 1: A producer is looking at two sources of dewormer. One product is fifty cents per head cheaper than the other. They work nearly identically. On a 100-head cow herd, the difference in cost will be over $50 when accounting for cows, replacements, and bulls.

Scenario 2: A producer is considering her veterinarian's recommendation to adopt a managed herd-health program. The program will cost her about $15 more per brood cow. If we assume the producer has 100 brood cows, the additional annual cost it $1,500. Also, let us assume that her current weaning rate is 70 percent on her herd. This weaning rate is based solely on her 100 exposed cows and heifers from the previous breeding season. The veterinarian assures her that her herd's weaning rate will improve to 80 percent and possibly 90 percent due to improved health and efficiency in her cows. This 10 percent improvement in weaning rate translates to an improvement in revenue. In table 1, we explore the impacts of this

new program. We will make a few additional assumptions for this analysis. The producer sells her calves at 350 pounds average, and the prices used will be a steer and heifer average price.

Analysis

In Scenario 1, it is clear that a simple cost analysis would yield the same result as a cost-benefit analysis since there are no clear benefits to the more costly of the two products. Revenue is not improved in any way while costs are increased. The net result would be a decrease in profit. So, in the cost-benefit framework, there is negative benefit to the increased cost of the more expensive product.

With Scenario 2, cost-benefit analysis yields a dramatically different result than simply looking at the cost of the program. With scientific backing that healthier animals are more efficient, one could reasonably expect significant performance gains in this situation. Therefore, simply considering the cost of the program would leave out some important considerations to the bottom line of the business enterprise. In fact, a further analysis would show that any improvement in the weaning rate above four percent would make the program profit-enhancing above an $87 per hundredweight average for steers and heifers given the assumptions used in this example.

Closing Remarks

These scenarios are simplified in order to clearly illustrate the principles of cost-benefit analysis. In the real world, the principles are sound, but there may be more that needs to be considered. In some cases, the time period may be longer than one year, and time value must be considered. The main point of this exercise is to demonstrate that simply asking "How much does it cost?" may not be the right question to ask in order to make the best decision for your enterprise.

TEA

Florida Cattle Market Update Website

In November of 2001, I joined the faculty at the Range Cattle Research and Education Center (RCREC) in Ona, FL with the charge to provide economic analysis to the livestock industry in Florida. As a part of my program, I introduced the Florida Cattle Market Update website in May of 2002. The web site is intended to be an information outlet with price and inventory

Table 2

	Without the Program	With the program			
Weaning Rate	70%	70%	75%	80%	90%
Additional # of Calves	0	0	5	10	20
Additional Costs	None	$1,500	$1,510	$1,520	$1,540
Additional Revenues					
@ $100/cwt.	None	None	$1,750	$3,500	$7,000
@ $95/cwt.	None	None	$1,663	$3,325	$6,650
@ $90/cwt.	None	None	$1,575	$3,150	$6,300
@ $85/cwt.	None	None	$1,488	$2,975	$5,950
Change in Π					
@ $100/cwt.	$0	($1,500)	$240	$1,980	$5,460
@ $95/cwt.	$0	($1,500)	$153	$1,805	$5,110
@ $90/cwt.	$0	($1,500)	$65	$1,630	$4,760
@ $85/cwt.	$0	($1,500)	($22)	$1,455	$4,410

reports as well as my monthly market outlook letter. Additionally, there will be links to articles of interest to those in the cattle industry.

The website can be found at http://rcrec-ona.ifas.ufl.edu/markets.html. The website is also linked from the Food and Resource Economics website, http://www.fred.ifas.ufl.edu, the RCREC website, http://rcrec-ona.ifas.ufl.edu, the South Florida Beef Forage Program website, http://sfbfp.ifas.ufl.edu, the Central Florida Livestock Agents Group website, http://www.cflag.com, and the Animal Science Department website, http://www.animal.ufl.edu.

The primary features of the website are the weekly cattle price charts and the monthly market outlook reports. The weekly price charts can be found in the Chart Room section of the website. This section is designed to open in a new browser window in order to minimize the need for continued use of the browser's back button. Additionally, the individual price charts will open in yet again another window. Each of these new browser windows can be closed by either using the windows program close button or the close window hyperlink with in the page itself. The price charts included on the site are 12 week price trends for 2-3, 3-4, 4-5, and 5-6 cwt. calves, annual price trends for 3-4 and 5-6 cwt. calves, value added for heavier weight calves over 2-3 cwt. calves.

TEA

Contributors

Adjei, Martin B.
Anton, Tom E., Ed.
Arthington, John D.
Kalmbacher, Rob S.
Mislevy, Paul
Pate, Findlay M.