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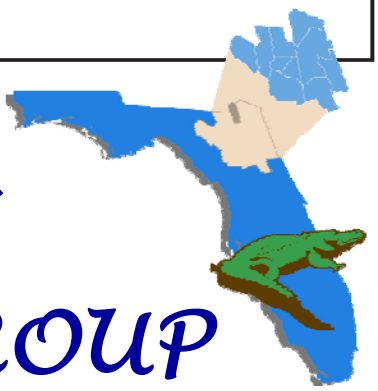
Northeast Florida Beef & Forage Group



January 2011

In This Issue:

This new year is off to a great start. Cattle prices are on the rise and the rains are coming more frequently. The Northeast Florida Beef and Forage Group has many educational activities planned for 2011. These include workshops about herbicide updates, livestock marketing, pasture management and wildlife field days to name a few.

In this edition of the newsletter, you will find articles about breeding soundness exams, integrated pest management strategies, and protein requirements for beef cattle. Our group has recently printed a seasonal weed management calendar with photos to identify key weed species along with management recommendations. Call your County Extension Agent to get your copy of this manual. Our next program will be a Weed Management Workshop in Suwannee County on **March 11**. We look forward to seeing you in the field this year.

Please let us know if you have any suggestions for future workshops.

Steve Gaul - North Florida Beef & Forage Group, Chair

Breeding Soundness Exams

Tim Wilson, Director/ Livestock and Forages Agent, Bradford County Extension

When evaluating the reproductive soundness of a herd, each cow is considered individually. They are expected to become pregnant, produce a live viable calf and nurse it until weaning. Too many times we contribute reproductive failure solely to the cow. The problem may not be the cow, but rather the bull used in the breeding program. The bull's reproductive ability affects the pregnancy status of the entire herd. If he is below standard or unsatisfactory, pregnancy rates could be negatively impacted resulting in a reduced calf crop and potential profits. Utilizing a breeding soundness exam (BSE) on all herd sires can be a key tool in optimizing pregnancy rates.

A BSE is a procedure that includes an evaluation of physical soundness (eyes, feet, legs, body condition, health), reproductive anatomy (internal and

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external), and semen. This exam has undergone scoring changes over the years from a numerical system to the current classification system of satisfactory, classification deferred, and unsatisfactory. A BSE is a snapshot of the bull's reproductive capabilities. These capabilities can change at any time.

Structural soundness is necessary for a bull to pass a BSE. A bull must be able to see and pursue females in heat. Poor eyesight and unsound legs and feet hinder the bull's ability to perform this task efficiently. Once the bull has identified a cow in heat, he must be able to support his weight on his hind legs. Failure to perform these functions will result in an unsatisfactory classification. Bulls must be in excellent body condition (BCS of 6 – 7; on a 1 – 9 scale) prior to the breeding season. A considerable amount of weight will be lost as the breeding season progresses. Conditioning herd sires prior to the breeding season will help reach and maintain production goals. All bulls should be vaccinated and free of any diseases or infections prior to the BSE.

The internal and external reproductive anatomy is palpated to ensure structural soundness. Rectal palpation of the prostate, seminal vesicles, and ampullae is performed to determine if any abnormalities are present. The testis should feel firm but not hard, and the epididymis should feel soft and free of any lumps. Scrotal circumference is directly related to the onset of puberty in the bull and is highly correlated to puberty in his daughters. It is measured in centimeters around the widest part of the testis and should meet minimum requirements by age (Table 1). The penis must be able to extend fully, and be free of any breaks or warts. Structurally correct reproductive anatomy is crucial for a bull to receive a satisfactory classification.

If a bull appears to be sound and his anatomy is functional, does this mean he is ready to breed the cows in your herd? Although the first part of this exam is critical in passing a bull, a semen exam must be performed to evaluate sperm morphology and motility. A bull must have 70% motility in order to receive a satisfactory classification. Sperm cells should be able to move in a forward direction and the sperm tail should move vigorously. These criteria are critical in order for sperm to reach the oviduct and fertilize the egg.

A veterinarian should perform a BSE 30 – 60 days prior to the breeding season. If a herd sire is used in two herds (fall and spring breeding), this exam should be conducted before each breeding season begins. If an unsatisfactory or deferred classification is given, this window of time allows the producer to either re-test a preferred bull or purchase a replacement. Young bulls may not pass a breeding soundness exam, but rather receive a deferred classification. As they mature, they should be retested. Retesting herd sires after the breeding season is completed will be useful in identifying the source if pregnancy rates are lower than desired.

Table 1. Comparison by age of average scrotal circumference (cm) of beef breeds.

	Months							
Breed	*<14*	*14–17*	*18–20*	*21–23*	*24–26*	*27–30*	*31–36*	*>36*
Angus	34.8	35.9	36.6	36.9	36.7	36.3	36.6	38.2
Charolais	32.6	35.4	34.5	34.9	34.6	36.2	37.1	38.1
P Hereford	34.8	34.2	34.9	34.9	34.8	35.0	35.6	36.4
Simmental	33.4	36.5	-	-	36.0	-	-	37.2
Brahman	21.9	27.4	29.4	31.4	31.7	33.5	34.7	36.7

(Adapted from Sprott, et al., Texas Agriculture Extension Service (L-5051 9-98))

Protein Requirements in Beef Cattle Rations

Basil Bactawar, Extension Director & Agent, Union County, and Dr. Matt Hersom, UF Extension Beef Cattle Specialist

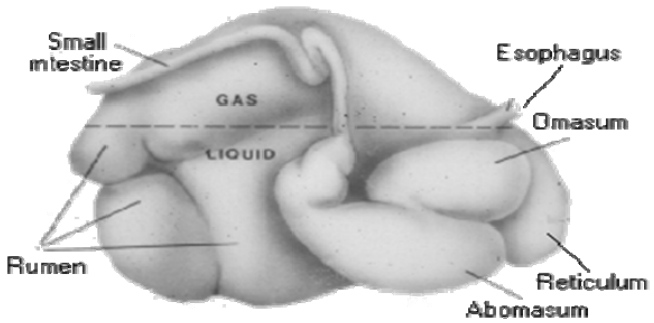
Feed is a major cost in a beef operation, and protein is a good portion of that feed cost. To reduce cost, it is important to have some knowledge of the feed ingredients and how they are utilized by the digestive system of beef cattle or ruminants. Feed cost can be reduced by formulating and feeding rations that meet the nutrient requirements of beef animals at the various stages of growth and production. The aim of this article is to provide some basic information on degraded and undegraded intake protein and their implications in formulating feeds for cattle.

The stomach of a typical cow consists of four compartments namely the rumen, reticulum, omasum and abomasum. They are closely linked together and function as a single unit as can be seen in the photo below. The abomasum or true stomach leads into the small intestine. In general, feeds consist of carbohydrate, fats, protein, water, vitamins and minerals. Amino acids are the building blocks of protein. The major end products of digestion in the rumen are ammonia derived from amino acids and fatty acids derived from the fermentation of carbohydrate. Fatty acids are absorbed by the body to produce about 50-70 percent of the daily energy requirement for the animal. In addition, they are constituents of milk fat.

Degraded Intake protein

The rumen is the largest compartment which contains billions of bacteria, protozoa, molds and yeasts collectively referred to as microbes. When feed enters the rumen through the esophagus, the soluble protein portion is easily digested by microbes to ammonia. This soluble portion is called degraded intake protein (DIP). In addition, feedstuffs such as silage and urea contain non protein nitrogen (NPN) which is converted to ammonia in the rumen. Microbes use the ammonia to form their own protein in the presence of energy. As rumen digestion progresses the microbes flow into the small intestine where they are digested and absorbed. There is a natural limit to the amount of microbes produced in the rumen and consequently, this restricts the amount of microbial protein entering the small intestine. There is also a limit to the amount of ammonia they can use. Overfeeding degradable protein sources such as grains results in excess ammonia production in the rumen. This excess ammonia is absorbed by the rumen wall or is lost through urine. This may represent a loss of money.

Photo of the ruminant stomachs, as seen from the right side
Picture displayed with permission from Dr. Richard Bowen,



Undegraded Intake Protein

When feed enters the rumen, there is a portion of the protein that is not easily digested in the rumen. It will escape fermentation or degradation in the rumen and reach the small intestine with its amino acids intact. This is called undegraded intake protein (UIP) or bypass protein. It is then digested in the small intestine and the amino acids are absorbed via the gut wall into the blood stream. Sources of bypass or undegraded protein are distiller's grains, brewers grains, and corn gluten meal to mention a few. These feed ingredients are less degradable in the rumen because of the process of heating and particle size change.

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Furthermore, the exposure of feed to microbial digestion such as in the production of ethanol can increase the level of bypass protein in the byproduct like distiller's grains. These processes render the feed ingredients more resistant to digestion by microbes in the rumen.

Implications for Formulating Feeds

It can be seen from the discussion above, two categories of protein reach the small intestine of the animal. One is microbial protein and the other is bypass protein. It is important to understand this because during certain stages of production, cattle need more protein than what is supplied by microbial protein synthesis. If we want to increase the amount of protein reaching the small intestine for growth and production, we need to supply a source of high by pass protein. A balance of rumen soluble protein (DIP) and bypass protein (UIP) is needed for optimum performance in beef cattle.

Rations with high levels of bypass protein may not provide enough nitrogen to rumen microbes for optimal microbial growth and feed digestion. Rations with high levels of soluble protein and /or NPN may not supply enough protein to the small intestine. Animal Nutritionists usually balance rations to contain about 30-40% available bypass protein and 60-70 % rumen soluble protein. The use of bypass protein in a feeding program should be based on the farm resources and cost advantage.

Improving an Existing Pasture

Dan Fenneman, Agriculture Agent, Madison County Extension

In many cases improving an existing pasture may be more advantageous and less costly than complete renovation of old pastures. There are several advantages to this approach: improvements will be done over a period of time allowing the pasture to still be utilized for grazing, improving a pasture often costs less than starting over and reseeding, and if reseeding is not done in a timely manner, pasture failure could result thus losing grazing for the season. A pasture assessment should be completed first to determine the current condition. Then decide what you want the pasture to look like when completed. There are three steps to improving an existing pasture.

The first step is weed control. Before any pasture improvement can be done we must first get rid of perennial and brushy weeds. Fertilization, reseeding, and most other pasture improvement techniques will be of little success until the weeds are under control. The perennial weeds are there with deep, established root systems and will out-compete any grass or legume as long as the weeds are present. However, once removed, good pasture management will keep these weeds from re-establishing.

The next step is soil testing and pasture fertilization. All plants need nutrients to grow. Lack of good

soil fertility will reduce pasture yield, especially in late season, and will give a competitive edge to weedy plants. Also soil pH will have a direct impact on what species will grow and how readily available these nutrients will be. Have a soil sample tested to determine the nutrient levels and pH of the pasture. Soil sample kits are available at your local county extension office. A soil test through the University of Florida's soil testing laboratory costs seven dollars. The standard soil test results report soil pH (acidity), phosphorus, and potassium and then make recommendations for fertilizer and lime. Improving soil fertility will promote vigorous growth of desirable forage species, enabling them to compete successfully against weeds.

The final step is grazing management. The most critical aspect is determining the correct stocking

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rate. If the stocking rate is incorrect, then neither rotational nor continuous grazing will correct the problem. Therefore, it is very important to choose the correct stocking rate for your conditions. Then converting from a continuous grazing program to a rotational system has been shown to have many advantages. Rotational grazing is defined as alternating periods of grazing and rest for two or more paddocks in a grazing management unit throughout the grazing season. Advantages of rotational grazing may include improved pasture longevity, more timely utilization of forage, opportunities to conserve surplus forage, increased stocking rate (generally 15-30%), more uniform distribution of excreta by animals, and better animal management. Disadvantages include; initial investment of fences and waters, availability of labor to move the animals, and more management decisions.

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Integrated Pest Management: A Quick Overview

Michael A. Davis, Ph.D., Director/ Agriculture Agent, Baker County Extension

Integrated Pest Management, or IPM, is pest management technique that combines many tools (biological, physical, chemical and cultural) in a sustainable approach to management of pests that minimizes the impact to the economy, environment and health. This management is typically achieved by using the most up-to-date information on various pests; including life cycles, reproduction and pest control methods; to prevent unacceptable levels of pest damage by the most economical means while posing the least possible hazards.

Since IPM is not a single control method, like a pesticide, there are a series of steps that must be followed to achieve the best possible outcome in pest management. These steps include:

1. **Determination and establishment of Action Thresholds**
   - This is the first step in achieving a pest management scheme. It involves determining the pest populations and environmental conditions that must be present to indicate that action is needed for pest control. Please note that environmental conditions such as growing season and time of year may make the action thresholds different for the same pest.
2. **Monitoring and Identification of Pests**
   - Not all species of animal, insect or plant are harmful to operations and some may actually be beneficial. Consistent and accurate identification of pests and monitoring of pest action will determine the type of control method that is used once an action threshold is reached.
3. **Prevention**
   - Like the old saying, prevention is more economical than cure. Integrated Pest Management programs work to prevent pests from becoming a threat and reaching the action threshold. This may include activities such as crop rotation, use of certified pest-free rootstock and selection of pest-resistant varieties of crops.
4. **Control**
   - Once an action threshold has been reached, then appropriate control methods are implemented. By using the above principles, the correct control measure can be selected for

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effectiveness. There may be many options available and those that are the least risky are typically used first. These methods may include the use of pheromones to disrupt breeding or mechanical action such as trapping or weeding. If subsequent monitoring indicates that the least risky methods are not producing the desired control, then other methods such as chemical pesticides may be employed.

Integrated Pest Management is an effective tool when used properly. Not all operations will have the ability to use every control measure available, but the use of an IPM plan will help operators determine the most effective, cost-reducing and least harmful pest control alternatives for their operation.

Additional information about Integrated Pest Management can be found online at http://ipm.ifas.ufl.edu (University of Florida / IFAS Website) or http://www.ipmcenters.org (USDA Regional IPM Centers Website).

Winter Weed Control and New Weed Control Products for Pastures and Hayfields

Elena Toro, Agriculture Agent, Suwannee County Extension, Dr. Jay Ferrell UF Extension Weed Specialist and Dr. Brent Sellers, UF Extension Weed Specialist

There are many herbicide options that will effectively control these winter weeds and increase the quality of the hay from the first cutting. Below is a short list of products that I have found to be valuable for control of winter weeds.

- Glyphosate. In north Florida, where bermudagrass goes completely dormant in the winter, glyphosate can be highly effective and cost less than $5 per acre. Apply 11-16 oz/A (see product label for specific use rate) for control of winter grasses (except ryegrass) and broadleaf weeds. If wild radish or cutleaf evening primrose is present, the addition of 1-2 pt/A 2,4-D will be necessary. Do not apply glyphosate if bermudagrass has any green tissue present. Glyphosate applied to bermudagrass during transition will delay greenup and extend the first cutting. If the grass is starting to transition, Gramoxone Inteon (40 day cutting restriction) can be substituted for glyphosate.

- Metsulfuron, formerly sold as Cimarron, is now available under a variety of trade names. This herbicide is fairly inexpensive and effective on a wide variety of broadleaf weeds. Wild radish, chickweed, and red sorrel are very sensitive to this herbicide. Bermudagrass injury is not a concern with this herbicide and it can be applied at any time since there are no grazing or haying restrictions.

- Chaparral is a relatively new herbicide that combines metsulfuron and aminopyralid (the active ingredient in Milestone). Metsulfuron controls many winter weeds, as noted above, while the aminopyralid component improves control of thistles, cudweed, Carolina geranium, and fireweed. The combination of these herbicides will likely control a majority of the broadleaf weeds present on a given hayfield.

- 2,4-D is often the least expensive way to control a variety of troublesome broadleaf weeds. This herbicide will be effective on pepperweed, wild radish, cutleaf evening primrose, and small thistles.

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Application rates in excess of 1 qt/A will be necessary if the wild radish is blooming or if thistles are greater than 12" in diameter. 2,4-D will not adequately control fireweed or red sorrel. For optimum control of sensitive weeds, it is best to use the ester formulation when applying during cooler temperatures. Winter weed control can be relatively easy and inexpensive. Removing these weeds will allow the bermudagrass to transition from dormancy more quickly, and greatly improve the quality of the first hay harvest.


Red Sorrel

New options for controlling grasses

Prowl H2O has been recently labeled in Florida for pre-emergent grass control. Prowl H2O at 3 qt/A is highly effective on annual grasses, but must be applied when bermudagrass is dormant. Though this application is relatively expensive ($25/Acre) and carries a 45 day hay restriction and 60 day grazing restriction, it will generally control annual grasses for 5 months or more. It must be noted that Prowl H2O has no post-emergence activity on weeds. Therefore, if weeds have emerged, other herbicides must be used.

Pastora (nicosulfuron + metsulfuron) is another new option for grass control. Pastora is effective on johnsongrass, vasseygrass, and sandbur that is less than 2" in height. Pastora is not effective on crabgrass or goosegrass. If this herbicide is applied to sandbur that is larger than 2" control is not likely, but the herbicide application will cause enough injury to prevent the formation of the sharp burs. Pastora has also been shown to injure bermudagrass, but the injury is short-lived and generally expected to be half as severe as imazapic.

One choice that is not a new product is imazapic (Plateau, Impose, etc). Imazapic is highly effective on several grass and sedge species, but can also be injurious to bermudagrass. Generally speaking, you can expect to see bermudagrass stunted for 3 to 4 weeks and this may result in the loss of one hay cutting. Early season applications can be highly injurious, resulting in delayed growth for much of the season.

To minimize this impact, applications should not be made until the bermudagrass is actively growing and rainfall is common. Another strategy is to apply imazapic after hay cutting, but prior to bermudagrass regrowth. This application pattern will reduce bermudagrass injury, but may also reduce crabgrass control. Regardless of how imazapic is applied, proper use of this herbicide can result in premium, weed free, bermudagrass hay.

Another choice is to use glyphosate right after cutting. Glyphosate can be applied at 6 to 10 fl. oz/A immediately after hay is removed from the field, but prior to bermudagrass regrowth. Generally speaking, this application should be made within 1 or 2 days after hay removal (or 7 to 10 days after cutting). Delaying this application until bermudagrass regrowth has occurred can result in bermudagrass stunting, but using low glyphosate rates as recommended here will generally not cause severe injury. The drawback to this option is that total crabgrass and sandbur control is rarely achieved. These low rates, coupled with applications to plant with little leaf surface area, results in fair levels of control. But, even if this application does not result in total weed control, it will often stunt the weedy grasses and allow the bermudagrass to over-grow the weeds and shade them out. Also, the relatively inexpensive application of glyphosate, while avoiding much of the bermudagrass injury issues associated with imazapic, make glyphosate a highly attractive option.

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