

Hardee Rancher Beef and Forage Newsletter



Hardee County Extension Service
 507 Civic Center Drive
 Wauchula, Florida 33873
 (863) 773-2164
 Fax (863) 773-6861
 E-mail lagary@ifas.ufl.edu

Summer 2006

Calendar Of Events

August

18	1st Annual Deer/Turkey Management Short course - Turner Center, Arcadia
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September

27-28	Grazing Management School - Hardee County Civic Center, Wauchula
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29	FCA 12th Annual Quality Heifer Sale - Arcadia Stockyards, Arcadia
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October

6	Black Brangus Bull Sale - Arcadia Stockyards, Arcadia
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16-19	Sunbelt Agricultural Exposition, Moultrie, GA
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Dear Beef and Forage Producers,

Allow me to encourage you to attend the 2006 Grazing Management School to be held in Hardee County on September 27-28. A brochure is enclosed. Our South Florida Beef/Forage Group has worked hard to bring you an information packed two-day session which you will not want to miss. Day 1 will be held at the Hardee County Agri-Civic Center and Day 2 will be a tour of well established local forage programs. We are providing ample advance notice so please place these dates on your calendars and plan to participate. Note the early registration deadline of September 15th.

Good luck on your grass planting. Everyone has been working feverishly to get it all done before it gets too wet.

Best wishes,

Lockie Gary
County Extension Director-Livestock

- Sleuthing Reproductive Problems in Beef Cattle Herds -

Lochrane A. Gary/Hardee County Extension Director

The primary goal of a cattle breeding program is to efficiently impregnate the cow herd within a reasonable amount of time. The length of the breeding season in south Florida should seldom exceed 120 days. A reasonable goal for pasture bred cattle in a multi-sire situation would be 75 to 90 days. The role of the cattle manager is to facilitate breedings to maximize a herds' development. Doing this effectively requires some knowledge of reproductive physiology, an understanding of basic genetic principles and interpretation of reproductive behavior. Developing the ability to accurately identify aberrant aspects of reproductive performance also helps to improve the efficiency of the program.

This article will give an overview of some of the reproductive techniques used by successful ranchers in south Florida. In addition, some troubleshooting tips are offered in an effort to provide the cattle manager with new insight and practical ways to sleuth and avoid reproductive problems within their herd.

Male to female ratio

The best ratio of breeding males to females has received much discussion among both cattlemen and researchers. A common rule of thumb used successfully for many years on pasture bred cattle in south Florida has been 4 to 5 bulls per 100 females. Finding the ideal ratio is elusive because the number of females an average bull can breed varies greatly depending upon his unique serving capabilities and the conditions under which he lives. Personal experience by this author illustrates this point. On a 500 acre stargrass pasture in south Florida this author exposed 100 mature commercial cross bred cows to 4 bulls of 2 different breeds. Two bulls were of breed A and 2 bulls were of breed B. Sixty days after a 100 day breeding season the cows were palpated and the pregnancy rate was 94%. These were all mature cows on fertilized pasture with adequate shade and water during a breeding season of December 1 through March 10. Seventy-four percent of the calves born to these cows came from the breed A bulls. All four bulls were the same age and had been raised together from birth. This personal experience brought home to me the message that bull breeds differ significantly in their serving capacity. Bulls of European breeds readily mount anestrous cows or other bulls, while those of the Zebu breed exhibit a well marked sluggishness and mount only cows in full estrus.

How often can a bull effectively breed?

Bulls in south Florida herds have been known to copulate as frequently as 25 times in a 24 hour period. However, by the end of the week this same bull may only copulate a couple of times daily or not at all despite the presence of "in heat" females. Physical exhaustion caused by excessive breeding and the demands of protecting turf and females from rival bulls can result in a decreased ability to breed.

In large south Florida herds in multi-sire pastures where bulls are rotated on a monthly basis it is possible for an individual female to be serviced by a succession of males who have been so active that their potency is depleted, resulting in the female passing through a breeding season unbred. This female that has not become pregnant may actually be labeled as infertile and culled due to no biological weakness on her part.

Efficiently managing male breeding potential

Creating an on-ranch bachelor herd of bulls has several advantages for the cattle manager. The greatest advantage is that the bulls can be managed together in large numbers. Ideally they should be out of sight from females. In order to avoid the development of territorial aggressiveness when allowing a bull to breed, the manager discourages the bull from establishing his territory by transporting him to breed on "neutral ground". The bull is allowed to breed in this neutral zone and is then returned to the bachelor herd when his work is complete. With this technique, the bull never establishes "a harem" and therefore never establishes a "harem mentality". The breeding can be closely monitored to assess the bulls breeding performance (willingness to pursue a female and confirmation of penetration and ejaculation). This method is sometimes referred to as "hand breeding" and allows the certainty as to the quality of contact while limiting a particular bull to 2 breedings a day, thus assuring the bull's maximum potency with each breeding. This practice is common among registered cattle breeders who must ensure the parentage of each offspring. This method also allows breeders to evaluate the female's response to the male, thus monitoring the reproductive status of a given female. Finally, the conception date can be precisely recorded. The only prerequisites to such a program are: the creation of a fencing scheme that moves bulls away from females, the creation of a neutral breeding pen, and the transporting of bulls so that they can be moved easily between their herd setting and the neutral breeding pen.

IDENTIFYING AND DIAGNOSING PROBLEMS IN REPRODUCTION

Fortunately most cattle breed readily and do not have reproductive problems. When problems do occur the cause can be simple or complex. Sometimes practical solutions are unknown because the cattle manager is inexperienced or they are simply overlooked. The following are the author's Eight Commandments of Cattle Breeding:

1. Remember, it takes two to tango.

Reproductive problems can occur in either sex. Often the female is suspected of being infertile when she does not become pregnant. Until the reason for lack of conception is positively determined, both the male and female should be considered equally suspect.

2. Make sure the participants are healthy.

This may sound obvious but it is often overlooked because of inexperience or haste to breed. Animals selected for reproduction should be in optimum health. Females, stressed due to the social demands of calf raising and nutritional demands of lactation are often pressed into service before they have had time to recover. After calving the uterus requires at least 50 days to involute (return to normal size) and repair. Animals should be body scored before breeding begins. Cattle which are emaciated or obese are compromised reproductively. On a scale of 1 to 9 cattle should be a body condition score of 5 or 6 at the beginning of the breeding season. Inadequate diet, parasite loads and calf demands all compromise

reproductive capability. Females about to become pregnant should be strong and vigorous and in an athletic condition.

3. Don't blame him; it could be her fault.

If you are certain that the bull is potent and performing well, you'll need to consider whether the female is a heifer or a proven breeder. Solutions for a failure to conceive differ markedly between heifers and mature cows.

The absence of courtship behavior (showing either receptivity or rejection) in the heifer is important and may indicate several possible problems. Physical or behavioral immaturity, insufficient hormonal response, or even an incomplete reproductive tract may be possible causes. A good cattle veterinarian can help diagnose the particular causes of problems with the heifer. If courtship behavior is present in a heifer but conception remains elusive there are several possible causes, such as a persistent hymen (requiring a veterinarian's intervention) and a number of serious obstructions in the cervix which may not be readily apparent.

If a mature cow is not conceiving and the service bull is impregnating other females in a similar time frame, first study the female's reproductive history. She may be a "slow" or "problem" breeder. Some females conceive satisfactorily every year shortly after giving birth (6 to 8 weeks) while others consistently take several months or more to conceive. In addition, problems such as dystocia (difficult calving) in the previous year's birth may have compromised the animal's reproductive soundness.

A very common cause of a failure to conceive in proven females is the presence of a uterine infection. An infection can make the uterine environment inhospitable for a fertilized egg or developing fetus. Typically, the first indication of an infection is that the female will return to estrus (heat) in approximately 21 days. She is clearly cycling, but not conceiving. There may be no uterine discharge or other overt sign that there is an infection. A uterine infection can be diagnosed by an experienced cattle veterinarian by culturing the uterus. Commonly, a uterine irrigation is performed and the female may conceive on a subsequent heat. The trick in administering the flush is to make sure the veterinarian passes the uterine pipette past the constricted cervix and delivers the antibiotic solution directly into the uterus.

4. Don't blame her; it could be his fault.

The author knows of several cattle breeders who have sold perfectly good females for discount prices because the females had not become pregnant after several months of exposure with their herd bulls. These cattlemen later found out that their "stud" was infertile. The lesson here is that the bull should never be overlooked when sleuthing reproductive problems. Do not be misled by loose advertising rhetoric. Understand that a "herd bull" is an animal that has actually impregnated females. Glossy, full page advertising and aggressive promotion provide no guarantee that a bull is capable. Be sure to ask about a herd bull's track record.

Data from research supports the theory that bulls with larger testicle size are more potent and more likely to impregnate a greater number of females than bulls with smaller testicles. A minimum of 31 centimeters should be established for bulls at 12-14 months of age. It is highly recommended that you measure the bull's testicular circumference and observe them to be roughly equal in size and consistency. Scrotal circumference at a given age varies with the breed with the Zebu breed and its derivatives being smaller. Remember also that is unfair to compare scrotal measurements of two bulls of the same breed at different ages or to compare measurements of cattle of different breeds.

After considering testicle size one needs to consider the behavioral health of the animal. Does he pursue females persistently and only appear minimally distracted by the presence of nearby bulls? The

male who is excessively aggressive or meek, easily discouraged, or obsessed with the whereabouts of nearby males may be an inefficient breeder because of his aberrant behavioral patterns.

There are other considerations when assessing male performance. Male fertility should be viewed as a continuum with many variables affecting it. Most bulls are fertile but some are more potent than others. Secondly there are environmental factors that can affect male performance and fertility. There have been instances in which bulls suddenly became sterile after years of good performance. Possible causes for abrupt changes in performance include severe and prolonged heat, injury to the testicles, or penis/sheath damage caused by fighting. Bouts with disease or other injuries may also be part of the problem. Unusually hot weather leading to heat stress can render a male infertile for 60 to 90 days. Adequate shade and water availability reduce the possibility of lost performance caused by heat stress.

Mounting does not mean that penetration has occurred. As a warning to the reader, be aware that there have been tragic incidents in which the penis of herd bulls have become broken or ringed in hair so badly that the blood flow was interrupted and a portion of the penis was lost. Occasionally, the bull may simply have a problem with bad aim and release semen on the exterior of the female. If a male appears to have trouble finding the mark, make sure that the mating is done on level ground and on a dirt floor. Many bulls are timid breeders on concrete. If a bull keeps repositioning himself, it may indicate that he is having problems penetrating. If this problem occurs it would be prudent to examine the extended penis for abrasions or lacerations and treat accordingly.

5. Learn to meet the needs of young or aberrant animals.

Uninitiated bulls and heifers can present special challenges. Many problems can be overcome by changing environmental cues to get the desired response. Bull calves, who will mount females and each other at a very young age, are incapable of penetration until about 12 months of age at which time their penis' can extend into a females reproductive tract. First-time males, who are physically capable and willing to breed, are sometimes sporadic performers, and are easily discouraged or slow to pursue and mount. Often the reluctant young bulls can be coaxed into breeding by allowing an older male to enter the breeding pen to pursue and mount the female in close proximity to the youngster. Usually, the young male becomes stimulated by the older bull and begins to show more interest. This technique of supplanting a younger male in place of an older male can accelerate the learning and reproductive performance of a young male by several months. However, there are limitations; few bulls consistently breed before 15 to 18 months of age.

6. Avoid breeding heifers too young.

Cattle managers wishing to maximize financial return may breed heifers when they are too young. Heifers reach puberty between 8 to 12 months of age depending upon breed and level of nutrition. A good rule of thumb is for the female to attain 60% of her projected mature weight before breeding. There have been rare instances of females conceiving as young as 5 months of age. A conception in a female this young is undesirable and will endanger both the dam and her calf. Do not assume that a weanling heifer is safe from the interest of males sharing a common pasture. For this reason it is advisable to separate bull calves from heifers at weaning. This author has personally experienced weanling heifers being pregnant when weaned at 6 to 9 months of age. In most cases it would be advisable to administer an abortifacient should this situation occur.

A breeder may elect to breed a female based on her reaching a prescribed minimum body weight of 550 to 600 pounds or an age of 15 to 17 months. These weights and ages are helpful benchmarks but they need to be considered in the context of the breed (British vs. Zebu) and level of nutrition.

7. Create the optimum breeding environment.

Breeding behavior is enhanced in the correct setting. People speak of romantic locations and although

the needs are different, a proper setting needs to be set for cattle as well. A properly constructed breeding pen in an area out of the sight of male groups and in a quiet part of the ranch will enhance a breeding program. Minimizing distractions enhances performance. The pen or pasture should be large enough to allow the customary chase but small enough to control the interaction and ensure the female will interact with the male. This is particularly true when breeding heifers. The breeding area should be flat and free of obstructions. Bulls are more efficient on flat ground where they can center over the female in a sternal position. If the bull has to struggle to balance himself he may not achieve the desired penetration. Sloping terrain or a female too close to a fence for a male to mount her correctly are common contributors to compromised male performance.

8. Carefully observe your cattle and take notes.

Take the time to closely observe your cattle, particularly in the beginning of the breeding season. Is the bull adequately covering the cow? Write down the cow number and check her again in approximately 21 days to see if she returns to heat. It is sometimes wise to observe the cattle from a distance, for example from a pickup truck using binoculars so as not to interfere with their breeding behavior. Any time which you spend closely observing and monitoring reproductive performance will be greatly rewarded. Oftentimes bulls are injured and incapacitated and not seen by the owner for several days or even weeks. This means missed opportunities for conception and increased lameness for the bull.

After discussion of these reproductive problems we must remember that most cattle breed readily without human interaction. Our job as managers should only enhance the process and correct situations that are preventing speedy and efficient conception and reproduction.

- Potential Seventh Canadian BSE Case -

The Canadian Food Inspection Agency is currently conducting confirmatory testing on samples from a cow from Alberta suspected of having bovine spongiform encephalopathy. The animal, reported to be a 50-month-old dairy cow, died and was retained on the farm. No part of the carcass has been placed under control. The cow was identified through the national BSE-surveillance program. Given its age, this animal would have been exposed to the BSE agent after the 1997 introduction of Canada's feed ban, likely during its first year of life. You can read more from the Canadian Food Inspection Agency at Drovers.com. If tests on this cow are positive for BSE, it would be the seventh BSE-infected cow discovered since 2003. To date, two of the six confirmed cases of BSE in Canada have been animals that were infected after the feed ban went into effect in 1997. Canadian authorities have quarantined the farm where the suspected seventh case was identified. **Greg Henderson, Drovers editor**

- Canada Tightening Feed Regulations -

The Canadian Food Inspection Agency announced this week plans to ban cattle tissues capable of transmitting BSE from all animal feeds, pet foods and fertilizers. Canada has banned these specified risk materials from cattle feed since 1997, but the new rule extends the ban to all feeds. An agency release says this enhancement will significantly accelerate Canada's progress toward eradicating the disease from the national cattle herd by preventing more than 99 percent of any potential BSE infectivity from entering the Canadian feed system. The new regulations begin in July 2007, with additional time provided for small establishments to achieve full compliance. **Drovers**

- Farm Town Aims for Only Renewable Energy -

Reynolds, Ind., aka Biotown USA, hopes to generate its electricity and gas with everything from municipal trash to farm waste. Indiana's Department of Agriculture came up with the idea; state officials hope to break ground in November on a \$10 million installation to house the core equipment needed to turn manure and other biomass material into energy. It should generate electricity by July 2007. If the project is successful, the town could provide a prototype for reducing America's dependence on foreign oil. **Drovers**

- Shortage of Veterinarians on the Horizon -

Experts are worried that there won't be enough new veterinarians to cover the industry's needs, especially in the case of an outbreak of avian flu or foot and mouth disease. According to the American Veterinary Medical Association, the need for livestock veterinarians will grow by as much as 13 percent per year; the U.S. Department of Agriculture will grow by as many as 400 veterinarians in coming years. But fewer than 10 percent of veterinary school graduates go into food-animal jobs. Factors that may contribute to the shortage include a predominance of women in veterinary schools (who often pursue small-animal practices), fewer students from rural areas and the cost of education. **Drovers**

- 2005 National Beef Quality Audit Offers Insight -

Initial results from National Beef Audit 2005, funded in part by check off investments in the Beef Quality Assurance Program, are in and offer U.S. cattlemen insight into beef-quality successes and future challenges over which they have some or all control. Identified in the new audit as the top three quality successes since the 2000 audit were: (1) improved microbiological safety, (2) improved cattle genetics and beef of higher quality, and (3) fewer injection-site lesions. The rankings are from interviews with beef end-users, including exporters, purveyors, foodservice and retail channels. "Lack of uniformity/consistency in quality" was ranked by end-users as the No. 1 defect in the U.S. beef industry. That lack was further defined by four things: (presence) of marbling; tenderness; palatability; and inconsistency among and within quality grades. For the complete story, go to **Drovers.com**.

- Minimum Livestock Production Practices Proposed -

Christopher Shays, R-Conn., and Peter DeFazio, D-Ore., introduced legislation this week that would dictate that the federal government's food programs could only purchase products from animals that receive:

- Adequate shelter, which would require enough room for animals to stand, lie down, walk, move their heads freely, turn around completely and fully extend their limbs or wings without touching any part of an enclosure.
- Daily access to food and water; no "forced feeding or feed withdrawal" practices.
- Veterinary care, including prompt treatment or humane euthanasia for sick or injured animals.

Some of the government's food programs include school lunches, prisons and the military. **Drovers**

- Rapid Testing for FMD -

Scientists at California's Lawrence Livermore National Laboratory have developed a rapid diagnostic test that simultaneously tests for foot-and-mouth disease and six other look-alike diseases in livestock. The new test, still in the validation stage, reduces the time for diagnosing all seven diseases from days to hours. According to an LLNL release, the U.S. livestock industry could lose up to a \$3 million in direct costs for every hour's delay in diagnosing FMD. The test could minimize the scope and impact of an outbreak by allowing early diagnosis. In addition to the test, the researchers have made advances in testing and tracking samples that

could improve agricultural disease surveillance. The LLNL scientists are working in partnership with the Homeland Security Department, USDA and University of California. **Drovers**

For questions or comments regarding this publication contact



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