Volume 13, Issue 6
June 2016

MISSISSIPPI
BCIA
BEEF CATTLE IMPROVEMENT ASSOCIATION

- June 14-17— BIF Conference, Manhattan, KS
- June 17—Clay County Forage Field Day — West Point
- June 28—Warm Season Forage Field Day — Starkville
- August 1– Homeplace Feeder Calf Board Sale – Hattiesburg
- August 3-4—Deep South Stocker Conference– Carrolton, GA
- October 13-15—MSUES Artificial Insemination School, MSU
- November 10—BCIA Bull and Heifer Sale, Raymond

Inside this issue:

Little Creek Farm to Represent Mississippi at BIF

Little Creek Farm (LCF) of Starkville, will represent the Mississippi Beef Cattle Improvement Association as a nominee for the 2016 Beef Improvement Federation Seedstock Producer of the Year Award. LCF is owned and operated by Dr. Mikell and Mary Cheek Davis.

Since 1992, Little Creek Farm, LLC (LCF) has been producing top end Fleckvieh Simmental and Red Angus seedstock. In a part of the country where the average daily high temperature is 74ºF and an annual rainfall is over 55 in. – adaptability to the environment is crucial. Dr. Davis has found the Flecks, Red Angus, and their composites make his operation, more sustainable due to their inherent ability to adapt.

Dr. Davis exemplifies all the characteristics of a true seedstock breeder. In an effort to advance his breeds of cattle, he employs a rigorous selection criteria for bulls and heifers. His commitment to his genetic program is unsurpassed. As a devout student of his cattle, Dr. Davis looks to bring in complementary genetics to his existing cow base that will strengthen his breeds and create genetic anomalies. For example, the senior Fleckvieh herd sire, LITTLE CREEK XPRESS 840X, a six year old bull bred and owned by LCF, ranks in the elite 1% of the Fullblood Simmental sires for Calving Ease (CE) and Ribeye Area (REA). With 182 calves on record with the American Simmental Association, the impact this bull is making on the breed reaches far across the Mississippi state line.

Little Creek Farm offers genetically elite cattle in their annual production sale, which Dr. Davis hosts on the farm. The annual Magnolia Classic features top end females from the heart of the LCF program and a handful of elite herd sire prospects. The Magnolia Classic provides a showcase for the very best in Fleckvieh and Red Angus genetics.

Dr. Davis has certainly proven himself as a successful breeder of high performing Fleckviehs and Red Angus. As a veterinarian, Dr. Davis' accolades are incredible. As a resident of a college town, he often opens the gates of his farm for student tours, demonstrations, judging team workouts, and mentor-based project learning opportunities.

Congratulations and thank you to the Davis family for representing Mississippi as a nominee for this prestigious award! BEST OF LUCK!

You can watch most of the Beef Improvement Federation Conference on liveauctions.tv.

Libba Rutherford

The Genetics of Horned, Polled and Scurred Cattle

By Dr. Darrh Bullock accessed from eBEEF.org on June 6, 2016.

The genetics of horned, scurred and polled cattle can be confusing and we still do not know all of the answers (see Illustration 1.). This factsheet will try to clarify some of the misconceptions associated with these conditions and discuss strategies for minimizing the horn and scur condition.

Horned feeder calves are not desirable; they are potential hazards for other cattle and the humans working them. For this reason calves with horns are discounted at the sale barn and even though scurs pose no danger to other cattle or humans they are still discounted by many buyers. To minimize these discounts beef producers attempt to use breeding techniques to generate polled cattle or physically dehorn/de-scur their calves. If you plan to breed for polled cattle it is important to understand the genetic action of the poll/horn gene, however, you will learn that avoiding horns is relatively easy, but avoiding scurs can be much more difficult.

This factsheet will describe the inheritance mode of the poll/horn gene and discuss what is known about the scur trait. Additionally, strategies for developing a breeding plan to eliminate horns and minimize scurs will be discussed.

In most cattle the horn/poll gene action is simple recessive with the poll allele (P) being dominant to the horn allele (p). Every parent has a pair of alleles at each gene and they pass on one of these alleles for each gene to their calf;

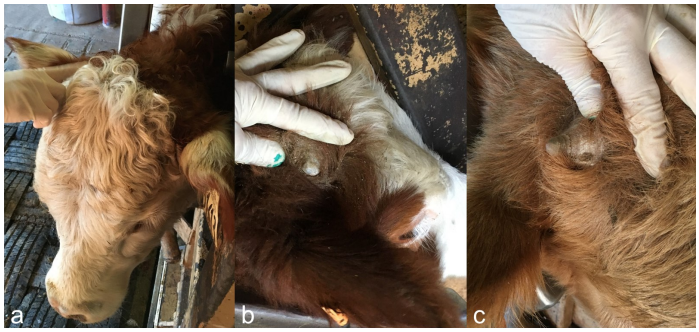


Illustration 1. Yearling cattle showing the smooth polled (a); scurred (b) and horned (c) phenotypes. Photo credit: Tara McDaneld, USMARC Cattle Operations.

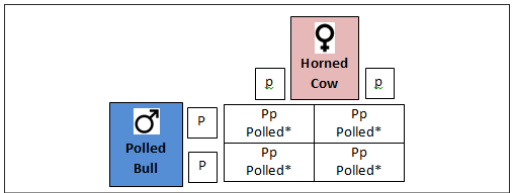
the calf gets one allele from the bull and one allele from the cow to make its pair. What this means is that if a calf gets a polled allele from either parent then it will be polled. If it gets two polled alleles it is considered homozygous polled; if it gets one polled and one horn allele it will be physically polled, but it will be referred to as heterozygous polled or acarrier; if it gets two horned alleles it will be homozygous horned and will be horned (Diagram 1).

Since the polled allele is dominant to horned, if you mate a homozygous polled bull to a group of females then all of the offspring will be polled. This is shown in the most extreme case in Diagram 2 where a homozygous polled bull is mated to a herd of horned cows. In this case 100% of the calves are heterozygous polled, in other words they all have a polled appearance or phenotype, but carry one horn allele. In Diagram 3 a heterozygous polled bull (Pp) is mated to heterozygous polled cows (Pp). In this mating it is expected that 25% of the calves will be homozygous polled, 50% will be heterozygous polled, and 25% will homozygous horned. This means about 75% of the calves will be phenotypically polled and 25% horned, even though the bulls and cows were all polled.

Genotype	Phenotype
PP	Polled
Pp	Polled (Scurs Possible*)
pp	Horned
*Expect a higher incidence in males than females.	

Diagram 1: Possible genotypic combinations and phenotypic appearance of cattle for the poll(P)/horn(p) gene in cattle.

It has been speculated, but not proven, that there is another gene, called the African horn gene, that can interact with the normal poll/horn gene causing it to be sex influenced (Long and Gregory, 1978). This proposed gene has been associated with Bos indicus cattle. If this gene does exist, this is a possible explanation when a bull is tested homozygous polled and has a horned bull calf there is a slight possibility that the African horn gene was introduced somewhere in the calf's pedigree and not necessarily a mismatched mating or incorrect genomics test. Since there is no research to support the existence of this gene it will be disregarded for this factsheet.



* Possibly scurred.

Diagram 2: Mating a homozygous polled bull to homozygous horned females and the possible genotypes and phenotypes of the calves.

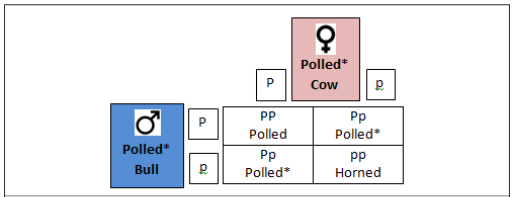


Diagram 3: Mating a heterozygous polled bull to heterozygous polled females and the possible genotypes and phenotypes of the calves.

Reference to poll up until this point has been considering the absence of horns. Cattle can also be scurred which will be discussed next.

Horn growth would make it impossible for scurs to develop at the same spot but horned animals can carry the gene for scurs. Unlike the poll/horn trait, scurs is not a simple recessive trait and is not completely understood! It has been hypothesized that scurs is a separate gene to the poll/horn gene on Chromosome 19, but interacts with the poll/horn gene, and that gender also has a possible influence on this trait. It has also been theorized that scurs are simply a condition of the poll/horn

Horned, Polled and Scurred Cattle (continued)

gene that is gender influenced (J. Decker and J. Taylor; University of Missouri, personal communication). It has been shown that, regardless of the cause, the scur condition can only happen in heterozygous polled cattle, of either sex (Asai-Coakwell and Schmutz 2002; Wiedemar, et al. 2014). The data also support that males develop the scur condition at a higher rate than females. Long and Gregory postulated that this was due to males expressing scurs when either homozygous or heterozygous for the scur allele and females only have the scur condition when homozygous for the scur allele. However, if there is no actual scur gene (i.e. separate DNA region corresponding to scur), but a sex by poll/horn gene interaction, it is theorized that male hormones could play a role in heterozygous males having an increase in the scur condition compared to heterozygous females. Since the sex-scur relationship is unknown the recommendations in this factsheet will reflect expectations in regard to the occurrence of the scur condition.

The condition that is obvious is that horned cattle (pp) cannot have the scur phenotype. If cattle have the genotype for the horned condition (pp) they will always be horned. For cattle to develop scurs, it must be a horn allele carrier (Pp) and have some other unknown genetic influence, realizing that male calves will tend to develop scurs at a higher rate than females. For cattle to be smooth polled it must be either homozygous (PP); or heterozygous polled (Pp) without the unknown genetic influence that allows scurs. Diagram 1 shows all possible combinations of the poll/horn alleles and where scurs can occur.

Genomics Testing and Planning a Breeding Program

There are genomics tests available to determine if polled cattle are carriers of the horn allele, but there are currently no genomics tests for the scurs. From a practical standpoint, if you have cattle that develop scurs then it is known that they are carriers of the horn allele and testing is not necessary, however, the lack of scurs does not conversely mean that they are not carriers, they would need to be tested. A common misconception is that a homozygous polled bull shouldn't have scurred calves; while it eliminates the possibility of horned calves and reduces the incidence of scurs, they can still occur. If he is bred to cows that have the horn allele then it is possible for him to produce scurred calves. Bottom line, it is easy to breed for polled cattle, buy a homozygous polled bull and you will not have any horned calves (double polled is not the same as homozygous; see glossary). Scurs, as you now know, is a completely different story; buying homozygous polled bulls will assist in reducing the incidence of scurs, since the horn allele is necessary to produce scurs. Until the genetic cause of scurs is determined and a genomics test for the scur allele is developed, if in fact scurs is separate gene to the poll/horn gene, then scurs will be difficult to eliminate.

2016 Deep South Stocker/Backgrounder Conference

The eighth annual Deep South Stocker Conference will be held August 4th and 5th in Carrolton, GA. This event rotates annually between Georgia, Mississippi, and Alabama, and includes educational sessions, tours, and a tradeshow with leading industry vendors.

The program on Thursday includes talks focused on market outlook, marketing options, veterinary feed directives, necropsy, disease, nutrition, and forages. Thursday's program concludes with a trade show reception and dinner. Friday's program focuses on feedback from the feedlot, and stockmanship, and concludes with tours of area producers. The cost of this year's conference is $100. This includes all of the seminars, demos, notebook, tour, lunch both days, and dinner.

Registration and a complete conference schedule, as well as travel information can be found at deepsouthstocker.org. Registration can also be completed by mail, and the Beef Extension team would be glad to mail out registration to anyone interested.

This conference is a joint effort between the Alabama Cooperative Extension System, the Mississippi State University Extension Service, and the University of Georgia Cooperative Extension.

The Beef Extension team is currently planning to travel as a group in the Animal and Dairy Science departmental van. There is space available for anyone who would like to travel with the group. Please contact Dr. Brandi Karisch (662-325-7465) or Cobie Rutherford (662-325-4344) for more information

THE UNIVERSITY OF GEORGIA COOPERATIVE EXTENSION

extension ALABAMA A&M & AUBURN UNIVERSITIES

STATE | MISSISSIPPI STATE UNIVERSITY EXTENSION

June 2016 — Management Calendar

GENERAL

Control summer weeds and brush. Manage pastures to rotationally graze young growth and harvest excess for hay. Overgrown pastures may need to be clipped. Target the production of high quality hay by harvesting bermudagrass hay at 4-5 week intervals, weather permitting, to keep standing hay crops from becoming too mature and fibrous. Fertilize hay fields between cuttings or on a regular interval to replace soil nutrients removed by hay production and improve hay yield and quality. Have proper free-choice minerals and fresh water available for cattle at all times, checking them often. Make sure adequate shade is available for cattle in the summer months. Continue with fly control program, and watch for cancer eye, pinkeye, and foot rot. Maintain a complete herd health program in consultation with a veterinarian including internal and external parasite control and vaccinations. Keep good production and financial records.

SPRING CALVING

Spot check cows and heifers to see if most are bred. Maintain good breeding records including heat detection records, artificial insemination dates, dates bulls turned in and out, identification of herd females and breeding groups, dates bred, returns to heat, and expected calving dates. Remove bulls 283 days prior to the end of the desired calving season (before June 20 to end the calving season in March). Keep bulls in a small pasture traps with effective fences. Feed bulls to start the next breeding season in good condition. Complete management practices for late calves, and castrate & dehorn any calves missed at birth.

FALL CALVING

Make sure fences where weaned calves will be placed are in good shape, and repair fences where needed. Wean calves based on market and pasture conditions using weaning strategies that minimize calf stress. Record weaning weights and cow body condition scores as measures of animal and herd performance and nutritional status. Calculate and evaluate weaning percentage (calves weaned/ cows exposed to breeding) and cow efficiency (calf weight/ cow weight). After weaning, cull cows based on pregnancy status, soundness (eyes, udders, feet, legs, teeth), and performance records. Develop plans for marketing cull cows based on market conditions and cow body condition. Select replacement heifers based on performance. Plan a heifer development program based on nutritional resources and gain needed to reach target breeding weights. Explore various calf marketing options to determine what best fits your operation. Prepare for special feeder calf sales. To precondition calves, vaccinate for respiratory diseases (IBR, BVD, PI3, BRSV, and others upon veterinary advise), and wean for at least 45 days before shipment. Train calves to eat from a bunk and drink from a water trough during the preconditioning period. Maintain bulls in small pasture traps with adequate nutrition to be in good body condition at the start of the next breeding season.

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Membership Application

Name:_____

Address:_____

City:_____

County:_____ State:_____ Zip:_____

Phone:_____ Email:_____

(Check one) Seedstock:____ Commercial:____

Cattle breed(s):_____

Completed applications and $5 annual dues or $100 lifetime dues payable to Mississippi BCIA should be mailed to:

Mississippi Beef Cattle Improvement Association
Box 9815, Mississippi State, MS 39762