How It All Unfolded By Landi

At our 80th Birthday Bash August 29, 2008, Hoover Angus Farm was unaware of the condition known as arthrogryposis multiplex (common name curly calf syndrome) that would be announced exactly one week later.

September 5, 2008 the American Angus Association announced the possible presence of arthrogryposis multiplex (AM) in the Angus breed. The AAA asked for members' help in reporting abnormal calves. At Hoover Angus Farm, we have not had any AM affected calves. However, we did scour all past calving books on file to confirm nothing matched the description of affected calves.

For one month, our world was tipped sideways—what a devastating effect this could have on our herd. Every night we went to bed with the "what if" thoughts. We calculated our worst case scenario, did the Punnet squares, and tried to figure our odds of what outcomes may be. Meanwhile, some prominent Angus breeders that had been extensively using the "hot" bloodlines canceled their fall sales. . .

Dr. Jonathan Beever of the University of Illinois collected samples and evidence on AM affected calves provided by AAA members. He successfully identified the mutation as a simple recessive and very rapidly developed a test for AM. Five semen companies submitted semen for testing on their most prominent AI sires. November 3, 2008 the Arthrogryposis Multiplex Free (noted as AMF) and Arthrogryposis Multiplex Carrier (AMC) bulls were posted online at www.angus.org. Gridiron and CC&7 were free of the genetic defect (AMF)! All bulls on this list have one common ancestor, and to date, *all AM carriers trace to this bull.*

0% of the Hoover cow herd is affected by the AM gene as well as 0% of our sale offering and matings in this offering. All reference sires in the front of this catalog have been tested free of the AM gene.

Our catalog may be the first one you see with this much space devoted to AM. That is because it is certainly more important than one or two paragraph's worth! *We strive to be a leader by providing as much information to our customers as possible.*

The best way for cattlemen to stay clear of AM is to purchase *registered* breeding stock from diligent breeders who disclose all information. If you purchase bulls private treaty, ask the bull's registration be transferred to your name so you can see AMF and AMC designations on the registration paper. Ask questions from more than one source if you are unsure of a purchase. It will take 100% cooperation from all registered breeders to put AM to rest. Make sure your purchases come from Angus bulls tested free of AM or are from a non-carrier pedigree.

Curly Calf Q&A

What is Arthrogryposis Multiplex (AM)?
Commonly known as "curly calf syndrome", this is a genetic abnormality where calves are born dead with bent and twisted spines.

What is AMF or AM Free?
Arthrogryposis Multiplex Free—an animal with the AMF designation has been DNA tested free, does not carry the mutation, nor under any circumstances can the animal pass on the mutation.

What is AMC or AM Carrier?
Arthrogryposis Multiplex Carrier—an animal that has been DNA tested and is a carrier of the mutation. Carriers are heterozygous for the mutation—they contain one normal allele and one mutant allele. Carriers will pass on the mutation to approximately 50% of their progeny. This does not mean that 50% of their calves will be curly calves—ONLY when mated to another carrier do they have the opportunity to produce a calf affected by the disorder.

What type of parents must be present to have an affected (AM) calf born?
Since AM is a simple recessive, BOTH parents MUST be carriers of the mutant allele in order to have a calf affected by this disorder. When two carriers are mated together, 25% of their offspring will have two "normal" alleles and be non-carriers, 50% of their offspring will be normal appearing but carry the mutant allele, and 25% of their offspring will have two mutant alleles and be curly calves.

Can an animal carry mutation allele and still look "normal"?
Yes. Carriers of the AM allele show no abnormalities.

I may unknowingly have carrier females in my herd. What should I do?
ALWAYS breed these potential carrier females to a CLEAN (AMF) bull, and you will NEVER have a calf born with the deformity. Period. Seedstock producers serve as genetic suppliers, and must make decisions on how to best serve their customers. A prudent manager's first step would be knowledge of AI sires used (past and present) and testing of potential carrier herd sires. Potentially carrier females must be dealt with in a responsible manner.

Is the Arthrogryposis Multiplex test accurate?
The test is scientifically accurate to 1 in 10,000.

The best way to be sure I don't bring AM into my herd is to stay away from bloodlines that trace back to any carrier breeding, right?
No. The science is sound—trust it. Even if an animal traces back to a carrier, once a bull or cow is tested "clean", his/her progeny CANNOT inherit AM genes from that parent. AM doesn't skip generations. Don't eliminate bloodlines that have tested clean even if they date back to carrier bulls. Doing that will substantially limit your genepool from which to select profitable genetics, and in turn, limit the amount of genetic progress you can make in your population.

If you have more questions, please feel free to contact Landi at 641-772-4479 or visit the AAA homepage at www.angus.org.