

Genetics 101

Buy Only Registered Bulls To Curb Birth Defects In Cattle

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Managing genetic defects in the commercial cow/calf industry was the topic discussed by Dr. David Kirkpatrick, beef cattle specialist with the University of Tennessee, Animal Science Department.

“We basically spoke about the inheritance of some of the genetic defects, that they were basically recessive genes; and we told the group you cannot identify a carrier by what he looks like. The only way you can identify carriers of some of the genetic defects is through DNA technology, a DNA test.”

Through DNA, bulls that are carriers can be identified. This was not known until the last two or three years, so some folks that have used bulls that are now known carriers have probably saved replacement heifers from them.

“How do they manage that to eliminate having a genetic defect pop up in their herd if they’ve saved heifers from a bull who has been identified now as a carrier?” Kirkpatrick asked. “The next time you use a bull on those heifers – and we don’t know if they’re carriers or not, there’s a 50 percent chance they might not be; the way to eliminate the threat is to make sure the next bull you use is a proven non-carrier bull.”

The defects that a bull should be a non-carrier of include curly calf syndrome, hydrocephalus and neurohydrocephalus genetic defect.

“We’re not just talking about Angus,” Kirkpatrick said. “A number of breeds have genetic defects. Most of these genetic defects you don’t ever see because they are aborted. Every breed has defects, humans have defects, the only thing is you just have to find them. And one of the reasons they’re popping up now is because through our genetic evaluation programs we’ve been able to identify bulls that excel in some particular trait. Some folks say ‘I really want to improve that trait in my operation,’ so they concentrate on the breed, the genetics of a particular individual; and sometimes that individual appears on both sides of a pedigree and every time you stack pedigrees with the same individual it increases the likelihood of getting a genetic defect to pop up on you. So basically, we’ve used artificial insemination, embryo transfer to facilitate getting these genetics faster and that’s what

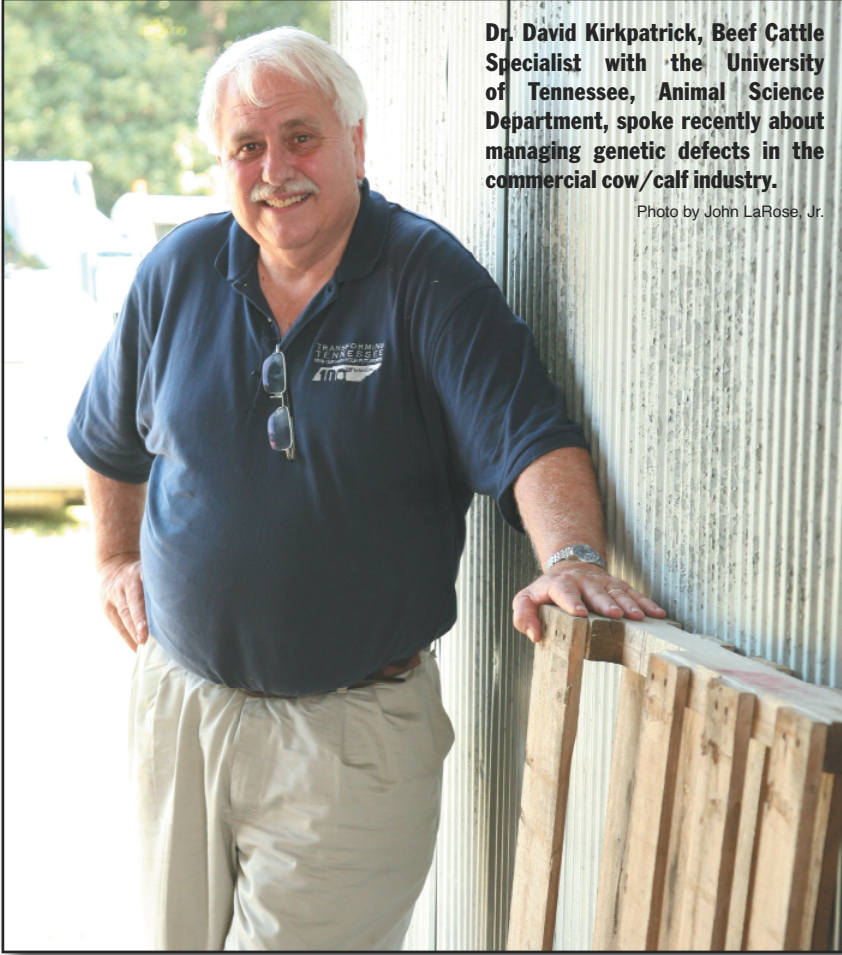
happens.”

If a farmer wants to test a bull, he can send a blood sample or hair sample to the DNA laboratory where they can detect whether that animal is a carrier for that particular genetic defect.

“Years ago we couldn’t do that, we didn’t have the means to do that,” he said. “When the dwarf hit the industry back in the late 1950s and 1960s we had the onset of dwarfs which was a genetic defect. What we had to do then was to breed a bull back to his daughters, about 30 daughters, to find out if the bull had a defect and to prove if he was a carrier or not. This DNA technology has really facilitated the ease and ability to do this very quickly and inexpensively.”

Kirkpatrick told the group that the sky is not falling so there’s no need to panic.

“The way to cope with this is just manage



Dr. David Kirkpatrick, Beef Cattle Specialist with the University of Tennessee, Animal Science Department, spoke recently about managing genetic defects in the commercial cow/calf industry.

Photo by John LaRose, Jr.

around it by only buying registered bulls that have documented genetics to them,” he said. “If you’re at the stockyard you don’t know if that bull is there because the purebred breeder knew he is a carrier and he can’t sell him. Therefore, only buy registered bulls from reputable breeders and do not buy commercial bulls. If a breeder says he’s not going to get papers on him, maybe the reason is because he is a carrier. So farmers should be cautious of buying just commercial bulls.” Δ

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