Is He Willing & Able

Assess bull fertility and manage to optimize it.

by Troy Smith, field editor

There are plenty of reasons. Some cow-calf producers think their bulls have done a good job of getting cows pregnant for the last few years, and there's no reason to think this year will be different. Others figure since they buy bulls that were "fertility-tested" once, it shouldn't have to be done again. In some cases, getting a bull into a chute is not a strength test the working facilities can stand. Still others prefer to avoid the hassle of hauling bulls to the veterinary clinic and/or the expense of having bulls assessed for fertility.

Whatever the reasons, Kansas State University Extension Beef Specialist Sandy Johnson thinks the breeding soundness exam (sometimes referred to as a BSE) is one of the most neglected management practices available to cow folk. Her opinion is supported by 2017 USDA National Animal Health Monitoring Survey (NAHMS) data showing that about 70% of U.S. cow-calf operations do not routinely test bulls.

According to Johnson, among bulls representing various ages that do receive a breeding soundness exam, the failure rate is approximately 10%. It makes you wonder how many "unfound" duds are turned into breeding pastures each year. It makes you wonder how many herds would see improved pregnancy rates if the infertile and subfertile bulls were identified and eliminated from the bull lineup.

"Bull fertility is not a static thing. It changes over time," states Johnson, noting individual bull fertility can be affected by age, nutrition, disease, social influences and some other factors that aren't fully understood yet. "We really need to evaluate every bull before every breeding season, and we need to do it far enough in advance of turnout that there is time to replace bulls that fail."

What is evaluated?

According to Johnson, a complete breeding soundness exam includes a physical examination to check the bull's vision and structural soundness, providing assurance that he is physically able to travel the pasture, find females in heat and service them. A breeding soundness exam also involves examination of external genitalia, including measuring scrotal circumference and palpating internal reproductive organs.

Then the bull is evaluated for semen quality.

"Semen ejaculate is collected and evaluated for sperm motility and morphology," says Johnson. "Think of morphology as checking the shape of sperm cell heads and tails. Motility is the ability to move forward in a linear fashion. There must be a minimum of 30% progressively motile sperm and 70% morphologically normal sperm cells for a bull to pass this part of a BSE."

Assess the 'want to'

While the exam serves as a measure of assurance against poor breed-up, it is not a guarantee. Johnson reminds producers that a breeding soundness exam assesses whether a bull is physically capable and properly equipped, but it cannot measure a bull's aptitude for getting semen in cows.

"A BSE tells us nothing about skill or technique. Young bulls have to learn, and that may take a little time," Johnson explains. "A BSE cannot assess libido. Sometimes a bull doesn't have the desire."

A producer can't assume that, after turning bulls into breeding pastures, everything will proceed like it's supposed to. Johnson advises producers to invest time in observation of activity in breeding pastures, particularly during the early part of the breeding season.

Along with monitoring individual bulls, it's wise to

observe social behavior among bulls in multi-sire pastures. Bulls establish a pecking order, and injuries can occur in the process.

Problems among bulls that don't play well together can sometimes be mitigated through management. Johnson recommends getting bulls accustomed to one another before the breeding season, rather than mixing bulls at turnout.

"Get the fighting out of the way beforehand," she advises. "It usually helps if bulls running together in a multi-sire pasture are close to the same age — not a yearling turned out with a 5-year-old."

Basis of performance

Other management practices that help optimize bull fertility include paying attention to nutrition and health. Keep bulls in good body condition throughout the year. Make sure vaccinations are administered routinely. Johnson advises consultation with a veterinarian regarding an appropriate vaccination protocol for the local area, as well as the advisability of testing for trichomoniasis.

Monitor bulls throughout the breeding season for injury or illness. Johnson reminds producers that foot rot can hinder bull mobility and, as with other infections, an accompanying fever may impair production of viable sperm.

"I advise producers to record events that happened during the breeding season, including the dates they happened — like when the neighbor's bull got into your pasture," says Johnson. "If you have a lot of empty cows at preg-check, maybe it was because that bull beat up on yours, or maybe he introduced trich to your herd. If you do have breed-up problems, a record may offer clues to what happened."

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How many cows per bull?

Johnson emphasizes the importance of using an appropriate bull-to-cow ratio. A pretty good rule of thumb for young bulls is one cow or heifer per month of age of the bull. A mature bull should be able to cover 25-35 females. Johnson admits that little hard data exists to support these recommendations. DNA parentage testing has shown that some bulls are capable of siring 50, 60 or more calves in a breeding season.

"We know that some bulls can breed a lot more cows, but they may look just like those that can't," grins Johnson. "Service capacity is not predictable yet."

That may change someday. According to Texas A&M University reproductive physiologist George Perry, researchers are looking at variations in the hundreds of proteins in seminal fluid and attached to sperm cells and the roles they play in sperm transport.

Scientists are also studying micro RNA associated with sperm, which are now thought to influence embryo development. Perry says it's all kind of futuristic yet, but he expects development of laboratory tests to detect factors that further explain differences in bull fertility. Such tests may eventually be applied for further selection.

"I believe the BSE will always be the first step for evaluating bull fertility," says Perry, noting how experienced professionals can easily perform the breeding soundness exam, even in the field, with a minimum of equipment. While the exam won't guarantee high fertility, it's a good tool for detecting sterile and subfertile bulls.

"And there's a huge economic benefit to removing infertility," adds Perry.

Editor's note: Troy Smith is a freelance writer and cattleman from Sargent, Neb.

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