Evaluate Breeding Ability

Bull breeding soundness exams can enhance profitability.

by

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If you’re in the business of buying a bull, you should consider having a professional conduct a breeding soundness evaluation (sometimes referred to as a BSE) on the animal first. Carey Harbison, of Town & Country Veterinary Clinic in McLeansboro, Ill., says a BSE can show a $17-per-cow return.

“A bull exposed to 24 to 30 cows will provide a $408 return on a small investment,” Harbison told participants at the Beef Sire Selection & Management Seminar recently in southern Illinois. “Bull fertility is much more important than the role of any individual cow. An infertile bull can devastate not just one breeding season, but several subsequent breeding seasons.”

The elements of the exam

Fewer than one-third of bulls have a breeding soundness exam performed on them. Harbison recommends an exam be performed under three different scenarios — pre-purchase; about 30-60 days prior to the start of the breeding season, or earlier for young sires; and post-breeding if fertility problems are suspected. In addition, Harbison advocates that the herd bull battery be evaluated annually, as fertility can change from year to year.

A breeding soundness exam consists of seven key tests or evaluations: identification and history, structural soundness and physical exam, rectal exam of internal genitalia, external exam of genitalia, scrotal circumference measurement, semen collection and evaluation, and libido and mating ability. The breeding soundness exam form from the Society for Theriogenology is generally used to gather the necessary information. A veterinarian can lead the process, with costs in the $65-$125 range per exam.

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Identification and history should include present and past breeding history. Harbison says permanent (Continued on page 2)
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identification of the bull is essential for future reference. Past breeding history should include whether the bull was used in only one or multiple herds and whether the bull was a single sire or part of a multiple-sire breeding group. Such history can assist with disease prevention.

The structural soundness and physical exam should include both health and body condition. For example, eyes should be clear of any lesions, teeth should be in good condition for grazing and forage, and the overall health of the animal should be good.

An animal’s body condition score (BCS) should be assessed. A bull should not be excessively fat, because it will affect sperm production, or excessively thin, because that can limit stamina. Bulls should be BCS 5+ to 6 at the start of the breeding season to allow for some weight loss. In addition, yearling bulls should be monitored for weight loss.

Harbison notes structural faults are heritable. The assessor should check rear leg conformation for load bearing during mounting and copulation, the possibility for joint swelling, and prospects for proper mobility in the pasture. Bull hooves should have no cracks, corns or be too long.

Scrotal examination

A rectal exam of internal genitalia is important, Harbison explains, because glands provide the nutrients and environments for sperm as they move into the female reproductive tract. An external genitalia exam should include the prepuse, penis and scrotum. Any inflammation, abscesses or adhesions can cause breeding problems. He adds that testicles should be firm and the bull should be checked for scrotal conformation to avoid other sources of breeding problems.

"Scrotal circumference measurements are done for sperm cell output, using a scrotal tape," he says. "Results are highly repeatable. We want circumference at a minimum to be 32 centimeters (cm) for bulls at 12 months, up to 36 cm for 2-year-old bulls. Larger circumferences are preferable because glands provide the nutrients and prospects for proper mobility in the pasture." Bull hooves should have no cracks, corns or be too long.

Motility and morphology are more important indicators of semen quality. Motility is the vigor and number of cells moving in a particular manner. Harbison says the minimum recommendation is 30%, but ideally it should be much higher. Morphology is a measure of normal and abnormal sperm present, and is a better predictor of fertility than motility. Morphology reflects the condition of the testes and excurrent duct system. The minimum percent to pass a breeding soundness exam is 70%. Sperm count is estimated by scrotal circumference, making accurate measurement crucial. Sperm concentration when freezing semen is another important consideration.

“For bulls to be classified as satisfactory potential breeders, they must pass the exam, and meet or exceed the scrotal circumference, sperm cell and motility minimums,” says Carey Harbison, of Town & Country Veterinary Clinic in McLeansboro, Ill.