Scrotal Circumference: A Tool

A bull's scrotal size and age, rather than breed, are good indications of its potential to sire offspring, according to an animal scientist with the New Mexico State University Agricultural Experiment Station.

"Ranchers should be concerned with sperm quality since a bad bull costs time and money," said Dr. Jack L. Ruttle. "Usually by the time a rancher discovers that a bull isn't working,he has already fed it for a season and lost out on a year's calf crop."

Ruttle has made semen evaluations of 2,788 range bulls representing 14 breeds and ranging from 1- to 12-years-old.

Scrotal circumferences in range bulls he studied varied from 25 centimeters to 50 centimeters. According to Ruttle, semen output tended to increase as scrotal size increased.

In fact, bulls with scrotal circumferences greater than 38 centimeters had a higher percentage of motile cells and ejaculate material and a lower percentage of abnormal cells than bulls with smaller measurements.

"Scrotal circumference is an easily obtained, repeatable measurement," Ruttle said. "Young bulls with small scrotal circumferences are likely to be relatively small when they mature.

"This means that if a bull doesn't measure up to established standards, a rancher shouldn't buy that bull. If he already has a bull with a small scrotal measurement, he should get rid of it," the animal scientist continued.

While Ruttle recognizes scrotal circumference as a good tool ranchers can use to anticipate a bull's fertility potential, he warned against relying totally on scrotal circumference measurements. A large diameter scrotum also can be due to nonreproductive tissue.

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He also warned against expecting immediate top performance from a young bull and keeping old bulls on the assumption that because they performed well in the past they will continue with the same vigor.

"Younger and older bulls tend to have more questionable and cull semen ratings than 3- to 6-year-old mature bulls," Ruttle said. "Mature bulls have significantly higher satisfactory semen ratings."

Ruttle pointed out that ejaculate material in young bulls is often of low volume and density and contains immature cells. As young bulls mature, their semen quality can improve because they have fewer immature cells.

Semen quality in old bulls, however, will not improve and will probably decline with age.

"Genetically a bull that has been good and produced good calves is still sound after age 6, but it can go sterile or have health problems associated with age, such as arthritis or poor teeth, that will affect its performance," Ruttle said. "Keeping old bulls is definitely a gamble since only about 35 percent of the bulls beyond 8- or 9-years-old are fertile."

This is when semen evaluations become especially valuable. The evaluations can pinpoint bulls with reproductive problems or poor quality semen. Ruttle recommends that bull semen evaluation tests be made immediately on new bulls, every other year on mature bulls, and every year on old bulls.

The final factor Ruttle looked at was breed, and it proved not to be a factor at all in bull fertility. Few statistical differences in fertility could be attributed to particular breeds.

Brangus, Zebu and exotic bulls tended to have a lower percentage of motile cells than Angus or Hereford bulls, but there was little variation in semen concentration among the breeds.

"There are good and bad bulls in every breed. For optimum production, factors other than breed should determine bull choice," Ruttle concluded. AJ