Bull Management Practices on U.S. Beef Cow-calf Operations

The U.S. Department of Agriculture's National Animal Health Monitoring System (NAHMS) conducted the Beef 2007-08 study, which focused on beef cow-calf health and management practices in 24 States*. These major beef cow-calf producing States represented 79.6 percent of U.S. operations with beef cows and 87.8 percent of U.S. beef cows.

One of the goals of the Beef 2007-08 study was to take an in-depth look at bull management procedures on U.S. beef cow-calf operations, since proper selection and management of bulls is a fundamental component of any operation's reproductive program.

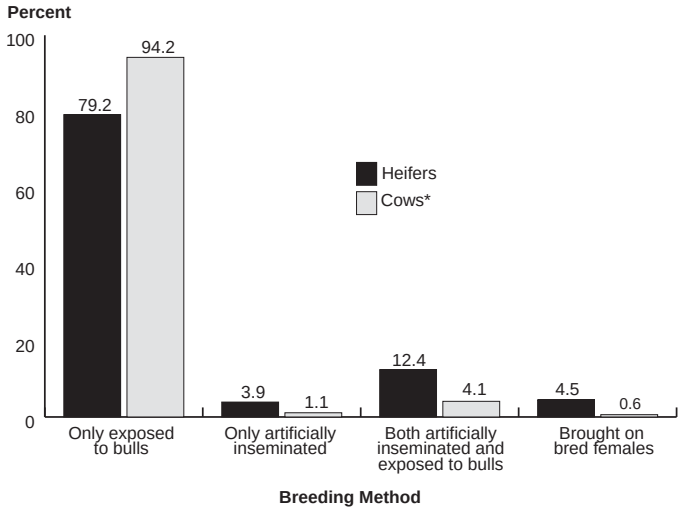
During the Beef 2007-08 study, beef producers were asked about their use of artificial insemination or natural service, and the methods used to ensure that bulls were fertile.

Bull Breeding

The most common breeding method used by cow-calf producers is "natural service" by a bull only, as opposed to artificial insemination alone or in combination with natural service. At least some replacement heifers and cows were bred only by bulls on nearly all operations (95.7 percent). Most heifers and cows were only exposed to a bull (79.2 percent and 94.2 percent, respectively) (figure 1).

Ensuring optimal cow-to-bull ratios minimizes costs and enhances reproduction. Using too many bulls for the same group of females increases the risk of injury to the bulls and may result in additional expenditures for purchasing and maintaining bulls. Overall, cow-calf producers expected mature bulls to service 25 females and yearling bulls to service 17 females. Most reproductive specialists advocate that a mature bull can service 25 to 35 cows; however it has been shown that highly fertile bulls can service up to 50 cows.

Figure 1. Percentage of Heifers and Cows Bred or Intended to be Bred for Calving in 2007, by Breeding Method



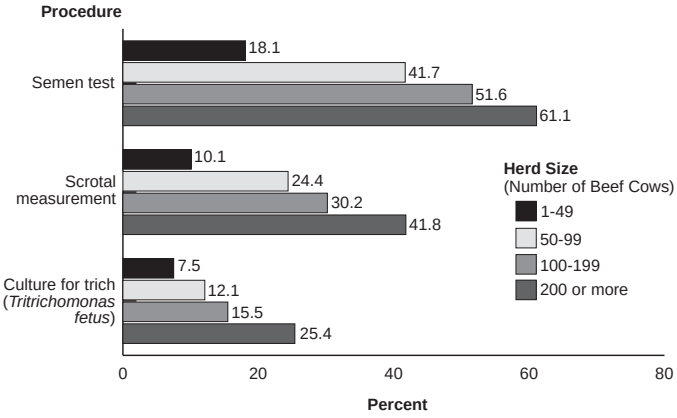
*Some heifers may have been included in this category.

Reproductive examinations

An annual reproductive examination is important to ensure that bulls are healthy and fertile. The percentage of operations that tested the semen of at least some bulls in preparation for the last breeding season ranged from 18.1 percent of operations with 1 to 49 beef cows to 61.1 percent of operations with 200 or more beef cows. Similarly, scrotal measurements were performed on a lower percentage of operations with 1 to 49 cows than on larger operations (figure 2). Overall, 26.8 percent of operations semen tested bulls and 15.6 percent of operations performed scrotal measurement.

*States:
Alabama, Arkansas, California, Colorado, Florida, Georgia, Idaho, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota Tennessee, Texas, Virginia, and Wyoming.

Figure 2. Percentage of Operations that Performed the Following Reproductive Procedures on Bulls* in Preparation for the Last Breeding Season, by Herd Size



*Bulls that had been on operation for at least the last two breeding seasons and excluding bulls purchased, leased, or borrowed.

Of the 30.7 percent of operations that purchased, leased, or borrowed bulls for the last breeding season, 71.3 percent semen tested at least some of these bulls.

Tritrichomonas fetus

Tritrichomonas fetus (*T. fetus*)—of which bulls are the primary carrier—is a sexually transmitted protozoon that causes early embryonic loss in cattle and, therefore, prolonged calving seasons. Once infected, a female can transmit the protozoon to other bulls during breeding but will usually clear the infection by the next breeding season. Older bulls are more likely to be chronic carriers. Young bulls can sometimes clear the infection.

Critical strategies to prevent *T. fetus* infections include maintaining a closed cow herd, purchasing virgin bulls, and testing nonvirgin bulls. Only 9.8 percent of operations cultured bulls for *T. fetus,* and just 18.5 percent of bulls were cultured for *T. fetus* in preparation for the last breeding season; 35.1 percent of operations that purchased, leased, or borrowed bulls in preparation for the last breeding season cultured bulls. Additionally, 53.3 percent of operations that purchased, leased, or borrowed a bull, added bulls that were more than 18 months of age or no longer considered virgin, but only 34.4 percent of those operations cultured all these bulls for *T. fetus*.

Summary

Breeding management decisions are key to the production and profitability of cow-calf operations. Data from this study suggest that there may be areas in which producers can improve the operations efficiency and reduce its disease risk through better bull management.

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