

GUIDE

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Bull Management for Efficient Reproduction

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Superior herd sires properly managed are the greatest asset in a cow-calf operation.

Generally, the herd bull contributes 50 percent of the total genetic variation of your calf crop annually. In most closed herds, however, the past three herd sires contribute 85 to 90 percent of the total genetic variation in the herd. This high percentage is due to selection intensity or replacement rate of cows and bull.

If your herd needs upgrading, select sires superior for the economic trait you want to improve. Maintain a short generation interval for both cows and bulls by selecting superior female progeny replacements until you have obtained the performance level desired. Then, your objective as a commercial producer would be to maximize cow age or longevity in the herd as long as they are physically and reproductively sound.

Genetically superior bulls that are poorly managed sire fewer calves and become an expense instead of an asset. During the breeding season, functional bulls must be in their best physical condition to travel several miles each day and maintain a high level of physical activity. It takes several weeks to get bulls physically fit. For multiple sire herds, bulls should be purchased early and commingled for conditioning 45 to 60 days ahead of the breeding season. Bulls that are physically fit when placed with the cow herd will settle more cows, have libido longer in the breeding season, and stay physically sound especially if used in multiple sire herds. In the spring, bulls will exercise themselves in the off-breeding season if given adequate paddock area. At other times, you can locate feed and water at opposite ends of the paddock, so you can force exercise.

The ideal bull lot would be 3 to 5 acres. It should be at least two to three times longer than wide on a well drained slope, with shade and shelter, and isolated from the cow herd. This space is sufficient for two bulls. Add 1 or 2 acres for each additional bull, depending on the amount of grass or supplemental feeding desired. The worst place to condition herd bulls or yearling bulls off test is in a small, flat, poorly drained, open dry lot.

Yearling Bull Management

The yearling bull should be performance-tested on full feed for a minimum of 140 days postweaning to evaluate his potential growth rate. His progeny will likely be full fed for 100 or more days. In addition to growth rate, evaluate two other important traits: founder and bloat. These traits are about 30 percent heritable.

There is a high positive relationship between growth rate and puberty, testicular growth, and sperm production in young bulls. However, some studies indicate that fat deposited in the scrotum will detrimentally affect libido and sperm production, especially during higher temperatures. Therefore, you should cull bulls showing excessive fattening before one year of age due to lack of physiological size or due to early maturity. The average 4-frame bull or better will carry .3 backfat or less and will not have enough fat to affect his reproductive efficiency. (The 4-frame bull is 45 inches or more at the shoulder at one year of age.)

Once the bull has completed his 140-day postweaning test at approximately one year of age, he should grow approximately 2 pounds per day and should be conditioned for breeding for at least 60 days. If he is to be used in a multiple sire herd of yearling bulls, they should be grouped off test at least six weeks before the start of the breeding season.

It is not recommended to mix yearling and short two-year-old bulls with older bulls in a multiple sire herd. To make the best use of bulls of different ages, rotate them in and out every two to three weeks during the 60- to 120-day breeding season to prevent social domination from older bulls.

Yearling bulls and short two-year-olds will usually breed with one-half to two-thirds the number of cows that mature bulls will. Rotating young bulls every two weeks and mature bulls every three weeks should give best use of sires during the first breeding season. After the first breeding season, these bulls could be commingled.

Provide for excellent nutritional management, and keep a

sharp eye on the condition of your bulls. They may need different levels of supplemental concentrate feed to obtain the desired growth and condition for next breeding season.

Nutritional Management of Bulls

A yearling herd bull should weigh 1,050 to 1,250 pounds and gain about 2 pounds per day until he reaches 85 to 90 percent of his physiological mature size and then gain 1 to 1½ pounds per day until he reaches maturity.

Avoid fat yearling bulls, but the *fleshy* bulls can be *hardened up* by gradually reducing the amount of concentrate 30 to 60 days before breeding and by providing adequate exercise. Feed grain at the rate of ½ to 1 percent of their body weight per day, and provide good quality roughage free choice. The ration should be approximately 12 percent crude protein. They may need supplemental protein if the quality of the roughage and grain is marginal.

The mature bull should be well fleshed and hardened at the beginning of the breeding season and be *gaining weight*. Mature bulls can be maintained largely on pasture and other roughage. Bulls should be conditioned to pasture and not turned out with cows directly from dry lot.

They need rations with approximately 8.5 percent protein (dry matter). No extra protein will be needed if good quality grass hay is fed or if one-fourth or more of the hay is composed of legumes. Vitamin and mineral supplements used for cows are satisfactory for these mature bulls. If the bulls are fed mostly roughages, the mineral supplement should have 8 to 10 percent phosphorus. It takes around 13 to 15 pounds of total digestible nutrients (TDN) and 2.25 pounds of crude protein daily to maintain an 1,800 to 2,000-pound mature bull. This amount of TDN is contained in 25 to 30 pounds of hay or 60 to 75 pounds of corn silage.

Vitamin A is necessary for optimum semen production. Good quality green legume hay that is 50 percent grass usually provides adequate protein and is high enough in carotene to supply Vitamin A. However, supplemental Vitamin A can be fed or injected at a reasonable cost. Bulls should have free choice access to a good mineral mixture.

See UMC Guide 2063 for information on rations for bulls on performance testing. This ration could be limit-fed in developing yearling bulls.

Health Management

Year-round health management of bulls is very important. Establish a health program with your local veterinarian (vaccination, treatments, etc.) that works for you, and stick with it.

Control external parasites such as flies and lice because they will likely be on the bull. Foot trimming should not be necessary, but if it is, do it at least two months before turning the bull out. A sore-footed bull will not follow the cows and sire many calves.

Be sure you get a reproductive soundness evaluation of all bulls by a competent veterinarian within 30 days of turning them out. A bull that does not produce semen or that is physically abnormal could cost you a calf crop. (See UMC Guides 2006 and 2010.)

Extreme cold weather with low chill indexes and little or no windbreak or shelter may cause scrotal frost bite and impair normal function of the testicles. Normal sperm cells mature about eight weeks after the animal returns to normal health.

Sperm cell production in bulls is associated with condition and, when they are losing weight rapidly, their sperm production decreases as well as their libido.

Conception rate in cows and sperm production in bulls decreases when the weather gets hot in mid July, August, and early September. Cows should calve early enough in the year to allow for a 60-day postpartum interval before July 1.

Manage your breeding and calving season, so you get 80 percent of your calves born in the first 45 days of the calving season. If you have a long calving season, you may want to use two 90-day calving seasons, spring and fall, initially.

If you desire one calving season and if you maintain your herd size, add only replacement heifers during the desired calving season, and cull cows in the off-calving season.

Isolate all new herd replacements from the breeding herd for 60 days, and retest them for tuberculosis and brucellosis and anaplasmosis before adding to the herd. If not previously vaccinated within 30 days of delivery, vaccinate for five strains of leptospirosis and vibriosis upon arrival.

You cannot afford a *bum steer* with your cows. Manage the nutrition, health and breeding season of your bull. Put him out with 30 healthy cows in a gaining condition both pre- and postcalving. Your result should be a better than average calf crop next year.