Keep Those Bulls Working

Tips to make sure your bulls clock in every day

BY ANGIE STUMP DENTON

Successful businesses rely on their employees to get the job done. Farming and ranching are no different. As a beef producer some of your most important employees are your bulls. Your bull battery serves as a source of new genetics.

Hiring the right employees can be a tough job. You have to take time and examine each possible candidate to make sure you hire the best one for the job.

Dr. Bob Larson, Extension veterinarian at the University of Missouri-Columbia (UMC), gave beef producers tips on how to select and manage bulls during UMC's Positioning for Profit Conference last December.

Before hiring your next employee of the month you need to develop a job description. Bulls need to be fertile, able to find and breed females that are in heat, and to service all available females. It's important to select a bull that can fit your herds needs.

To determine those needs, Larson says you need to first determine your market. Do you sell your calves at weaning? Are you retaining ownership of your calves through the feedlot? Are you wanting to keep the females as replacements? These are all questions you need to ask yourself as you select your next herd bull.

It's also important to buy a bull that is compatible with your cow herd. To achieve this Larson says you need to determine what your cow herd does well and what they do poorly. Your bull, when mated to these females, should produce offspring that improve the poor traits and accentuate the good traits.

Genetic change is a result of a planned breeding program. To improve your herd's genetics, you need to develop a selection strategy.

"Making selections based on emotions is very costly," Larson says.

A bull also needs to fit your environment. He needs to sire offspring that can excel in your region. For instance, if you live in a low-rainfall area and forage is scarce you don't want to use a bull that will have heavy milking offspring.

Larson suggests avoiding the fads when buying bulls. "Instead of following your neighbor, focus on making a profit," he says.

To determine the number of bulls needed in your bull battery you need to consider many factors:

- Environmental factors such as terrain, carrying capacity and pasture size;
- Bull factors such as age, condition, fertility, social status, injury, reproductive diseases; and
- Use of estrous synchronization.

Bull to female ratio can range from 1 to 20 to 1 to 80. The 1 to 80 figure is only attainable if the producer has first used artificial insemination. The highest natural service is 1 to 50. Generally, mature bulls can handle 30 to 40 females and young bulls 15 to 25.

When managing multiple sire pastures social dominance can be a problem. Research conducted in Australia shows the oldest or second oldest bull sires more than 60 percent of calves, whereas the youngest sire only service 15 percent of the herd. To avoid dominance problems, use bulls of the same size and age together.

Résumé evaluation

In many cases the first information you might see about a job candidate is a resume. This is a prospective employee's marketing tool to entice you to hire him or her. A bull's resume is his pedigree and expected progeny differences (EPDs).

Larson says a bull's EPDs are worth more in value than adjusted weights, ratios and the bull's own performance.

If possible, Larson suggests going to see the breeding program where the bull was raised before buying the bull. His dam and sisters in production serve as a good indication of how his daughters will produce.

Bull health

Good managers make sure their bulls punch the clock everyday. To get his job done, a bull must have sex drive, viable semen, have structural soundness and be in good health. A bull is a breeding athlete, just like human athletes. Before putting him to work you need to conduct a thorough physical.

Two to three months prior to breeding season every bull should have a breeding soundness exam.

These exams help eliminate infertile bulls and progressively improve the fertility of a herd and breed. The exam includes a complete physical, scrotal measurement and semen evaluation.

During the physical examination a veterinarian observes the bull as he moves, looking for inadequacies in movement, leg conformation and general body condition. A bull's eyes and teeth are examined. The lungs and heart are evaluated and a rectal exam is performed to determine the health of internal reproductive organs. Injury and disease to the penis is observed and the testes and epididymis are palpated for evidence of degeneration or inflammation.

Scrotal circumference is measured and is a good indication of semen producing ability. Larson says all testicles produce the same number of sperm per gram of testicle. Thus, a bull with bigger testicles will produce more sperm. Because of the difference among testicular sizes, daily sperm production among bulls varies from three billion to more than eight billion. Research shows increased scrotal circumference also relates to earlier puberty in daughters.

After the physical examination and scrotal measurement, a semen sample is collected either with the aid of an electro-ejaculator, massage of the prostate or use of an artificial vagina and a mount animal. The sperm sample is evaluated for sperm motility and for the presence of excessive numbers of abnormal sperm.

The breeding soundness exam is a pass-fail test and one bull does not score higher than any other bull that passes the test. If a bull fails any part of the exam he fails the entire test. For example, if a bull has excellent scrotal circumference and excellent semen motility, but has a rear leg conformation that limits his ability to cover a breeding pasture, he fails the examination and is not considered a satisfactory breeder.

Larson says many bulls fail the exam because of poor movement; too thin or too fat; blindness; penis, prepuce or scrotal injury; small testicles or abnormal sperm cells.

A single failure does not mean a bull is subfertile. Semen samples collected from young bulls and bulls collected by electro-ejaculator can possibly consist of only accessory gland fluid and semen with poor motility. If these bulls are given a few days rest and tested again, a more representative sample could be collected.

There are many causes of subfertility. Heat stress is a common cause of subfertility. In cases where a bull has had an elevated intratesticular temperature, abnormal sperm will appear in the ejaculate approximately two weeks after the heat stress and continue to increase for about one month. Normal semen is not ejaculated for about three months following the last day of heat stress.

As opposed to heat stress, other abnormalities detected in a breeding soundness exam will not improve over time and the examiner will give a poor prognosis for recovery. These would include: abnormally small testes, a scrotum damaged by trauma or frost bite, an abnormal penis or poor leg conformation.

Larson says by understanding the tremendous opportunity to improve your herd's fertility by rigorous use of the exam, and by grasping its limitations for individual bulls, producers can more effectively utilize

this valuable tool.

Larson warns producers that the results only reflect the bull's breeding soundness on the day tested. It does not predict the bull's ability to cause conception in the future.

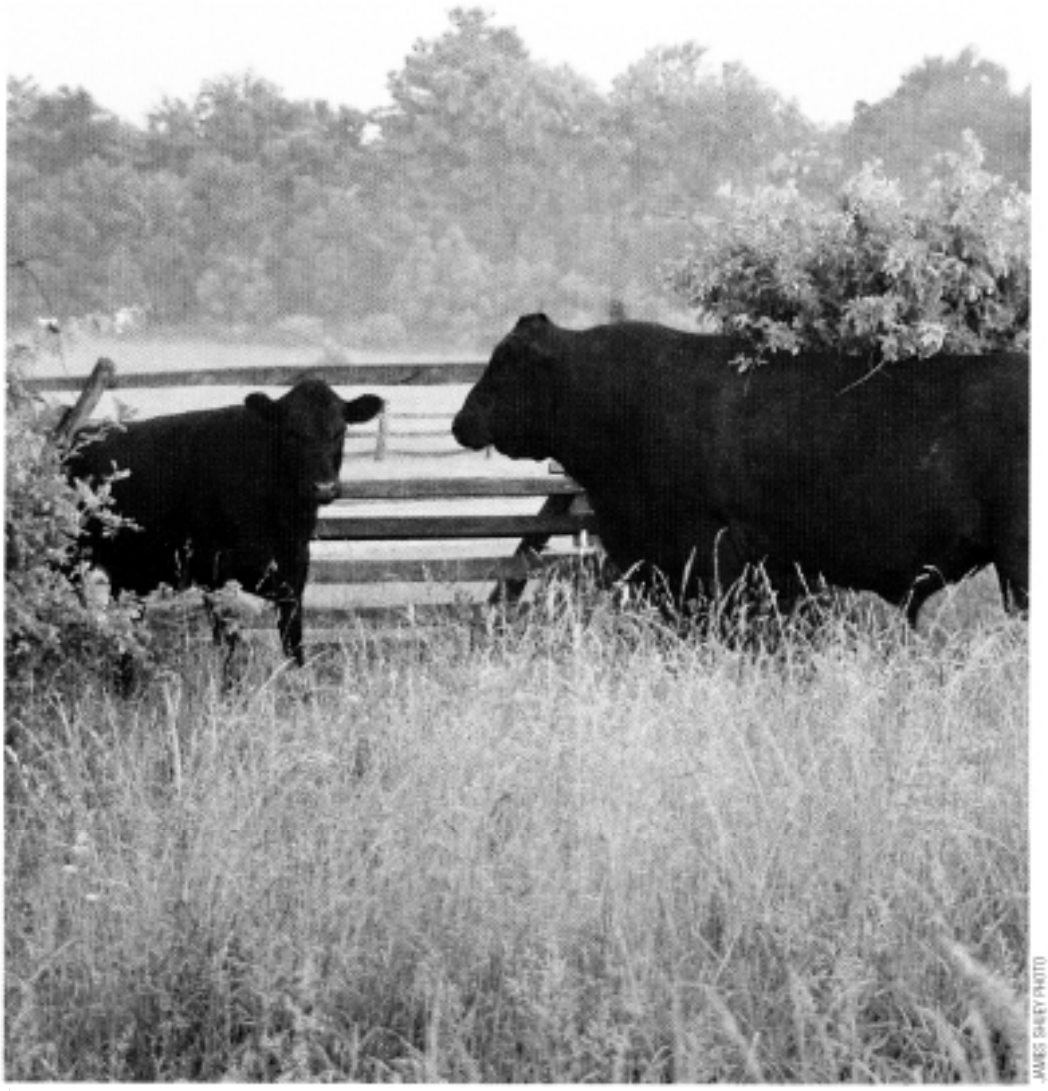
Bull nutrition

Proper nutrition is important when developing a bull. During the weaning to yearling phase a bull should experience full growth potential without becoming fat. Restricting energy, protein, vitamins or minerals can delay the onset of puberty. In contrast, a producer needs to be careful not to allow a bull to become obese or experience too rapid gain.

Before the breeding season you also need to precondition your bulls so they can survive the upcoming workload. Before turning the bulls out you want them to have a body condition score of 5.5 go 6.

Body condition scores (BCS) are numbers used to describe the relative fatness or body fat reserves of a beef bull. The most commonly used system has a range from 1 to 9, with a score of 1 representing a very thin bull and 9 representing an extremely obese animal. Each change in body condition score is equivalent to 80 to 100 pounds of body weight.

For the 60 days prior to the breeding season you'll want your yearlings gaining about 2 pounds per day. Two-year-old bulls that are in good body condition (BCS 6) are near their mature weight and need to gain only about 1 pound per day. You'll want your mature bulls to have a BCS of 5.5 before the breeding season.



To hire your next employee of the month look for fertile, healthy bulls with sex drive

Many times show, sale or test bulls become excessively conditioned. Research shows that bulls fed medium energy diets from weaning to two years of age had a greater reserve of sperm cells and higher quality semen than bulls developed on high energy diets. Experiments comparing lean and obese two-year-old bulls found that lean bulls had about twice as many total sperm cells in reserve in the epididymis, twice the number of motile sperm and one-third as many abnormal sperm cells.

Bulls grown out at a

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moderate rate on a forage-based diet supplemented with a moderate level of concentrate also avoid some of the foot and leg problems found in bulls developed on high energy diets.

If you've purchased a bull that is too fat do not immediately cut his diet. Dramatic change in a bull's weight can cause adverse effects on semen.

Gradually change the over-conditioned bull's ration and intake before breeding season. Initially feed the same ration, but decrease intake to 70 percent. The amount of grain can be reduced by 10 percent per week until desired nutrition level and body condition score desired is reached. Excessive loss of body condition during the breeding season can cause physiological stress.

During the 60-day pre-conditioning period, bulls will need more exercise to get them in shape. A bull may travel several miles per day and maintain long periods of physical activity.

Producers need to be cautious not to overwork yearling bulls. Typically, yearling bulls should not stay with a cow herd longer than 60 days. Beyond that period strenuous exercise experienced may lead to long-term negative effects on growth.

Be sure to watch bulls so they do not lose excessive weight during breeding season. Also observe closely for signs of injury or inability to breed. Pull and replace bulls experiencing any of these characteristics.

In single breeding season operations a bull goes on vacation after he gets the job done. A bull in this situation will typically have two months of conditioning, two months breeding females and eight months of vacation per year.

Following breeding season yearlings and some two-year olds need to be placed on a ration similar to bred yearling heifers. They should be fed the best forage available. During this period they need to replace the condition they lost during the breeding season as well as supply enough nutrition to keep them growing.

It's important to separate the yearlings from the mature bulls. While on vacation most mature bulls can survive on an all-forage diet.

Bull housing

Because most of the year bulls are isolated from cows, it's important to have good area to run the bulls during their off season. Some bulls can be hard to handle, so it's important to keep them happy and content.

The farther they are from cows the quieter they will be and the less likely they'll fight. If they don't have the temptation to get with cows they won't have the incentive to tear up fences and equipment.

Even though the bulls are on vacation it's important that they exercise. Larson says each bull needs 1,200 to 1,500 square feet. When designing bull facilities try to locate water and feed as far apart as possible; this will encourage more exercise.

Each bull also needs 2 to 3 feet of bunk space. Bulls need ample protection from extreme weather, especially from the wind.

Herd Immunization

Larson says herds today are over vaccinated but are way under immunized. He encourages producers to develop herd immunization by focusing on young stock.

"If you do a poor job when the cattle are young, it's hard to catch up when they're mature animals," he says.

A number of vaccines are available for use in bulls to decrease the risk of passing harmful organisms to the cow herd; therefore, herds will benefit from a complete vaccination program that includes bulls. Diseases to consider vaccinating against include: vibriosis, leptospirosis, Infectious Bovine Rhinotracheitis (IBR) and Bovine Viral Diarrhea (BVD). Other diseases vaccines are available for: anaplasmosis, *Hemophilus somnus* and trichomoniasis.

When selecting vaccines to use, consider which vaccines are effective and which diseases the herd could possibly be exposed to. This decision should largely be based on the geographic location of the herd and the classification of the herd as a closed, modified open or open herd.

Closed herds have no new additions except for bulls and there is no animal to animal contact with neighboring herds. New bulls should be isolated, tested and vaccinated for transmissible diseases before introduction into the herd. Level of immunization for a closed herd is less because risk of exposure is low.

Modified open herds have a higher risk of exposure to pregnancy-wasting diseases through additions of bulls and replacement heifers, animals moving in and out of the herd to exhibitions, or through contact with neighboring herds.

Open herds have a very high risk. This exposure is due to the frequent introduction of replacements or exposure of the breeding herd to stocker cattle or other recently purchased, stressed cattle.

Like human employees, you want your bulls to clock in for work every day they are called upon. To be sure they don't have any unwanted sick days, proper nutrition, immunization, housing, parasite control and a functional reproductive tract are required.

Good managers watch over and evaluate their employees' progress. Neglecting herd sires can lead to unacceptable performance, reduced calf crop, younger calves at weaning and decreased income.

You should profit from their employment. Bulls should have a positive economic impact on your herd to deserve eight months of vacation per year.

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