Good herd management practices are vital for profitable beef production. Supplying an appropriate diet and applying reproductive management practices lead to maximum production and reproductive efficiency. Another important aspect of herd management is using a method to identify livestock for record keeping purposes.

Nutrition

Proper nutrition is essential for maximum growth and performance in any animal. It is also a key to herd health. Beef cattle require balanced diets containing the appropriate levels of energy (supplied by fats and carbohydrates), protein, vitamins, minerals, and water. With proper levels of these nutrients, the animals can carry out the bodily processes necessary for maintenance and production.

Maintenance involves replacing cells, repairing damaged cells, and fighting off diseases. Animals fed balanced diets receive essential vitamins and minerals, which aid the body in fighting diseases. Without proper nutrition, the ability to ward off disease is reduced, which usually results in illness.

The nutritional needs of animals change as they pass through different stages of production. For example, their nutritional requirements increase as they experience growth and development. Gestation (pregnancy) and lactation (milk production) also increase their nutrient needs.

Reproductive Management

A second part of herd management is correctly managing breeding and reproduction. Whether producers choose spring calving (February to May) or fall calving (September to November), the length of the calving season needs to be limited to 60 days to ensure the uniformity of calves at weaning. Producers must plan the turn out and lock up dates for bulls to control the length of calving. Bulls should be turned out with the cows between 60 and 90 days after the first calf is born and locked up 90 days later to maintain the current calving cycle. Bulls should not be turned out before 60 days have passed because many cows are not ready to conceive again until 60 to 90 days after calving.

Producers should evaluate all bulls for breeding soundness before they are turned out with the cows. Qualified veterinarians examine semen under a microscope to check for abnormalities, sperm count, and motility (ability to move). Producers should replace bulls that fail the breeding soundness exams to help ensure that the cows will be bred. Generally, young bulls can breed between 15 and 20 cows annually, while mature bulls can handle up to 50 cows.

Heat detection is critical for producers who use artificial insemination (AI) in their herds. One of the most obvious signs of heat is that females will allow others to ride or mount them. When a female is in heat, the producer can artificially inseminate the female and return her to the herd. Some producers will try to manipulate the estrus cycle by giving hormone injections to cows in a process called estrous synchronization; many cows can then be made to cycle simultaneously. This practice allows the producer to utilize the labor required for artificial insemination better.

Pregnancy checking is another important management practice that can increase reproductive efficiency. In this process, the female's reproductive tract is palpated to check for evidence of fetal growth and development. Producers should check all breeding females exposed to the bull 60 days after the bull is locked up; before 60 days have passed, pregnancy is more difficult to detect. All females that are checked and are open (not bred) should be sold. The other females will have an average gestation length of 281 days. A table showing the expected birth date for various service dates is provided in Table 6.1.

Identification

Methods of identifying cattle for record keeping purposes include ear tags, tattoos, and brands. Plastic tags that hang in the animal's ear are the most common method of identification. Clamps hold them in the ear, much like an earring worn by humans. Cattle tags come in a range of sizes and colors with a cost of $.50 to $1.00 each. The tags can be purchased blank or preprinted with numbers. Some type of tag applicator must also be purchased to apply the tags. Ear tags should be readable. They are not permanent and can be removed if necessary.

A second way to identify cattle is by tattooing. Producers of purebred cattle generally tattoo numbers and a herd

Table 6.1 - Gestation Table

DATE OF SERVICE	DUE DATE	DATE OF SERVICE	DUE DATE
January 1	October 10	July 1	April 9
January 15	October 24	July 15	April 23
February 1	November 10	August 1	May 9
February 15	November 24	August 15	May 24
March 1	December 8	September 1	June 10
March 15	December 22	September 15	June 24
April 1	January 8	October 1	July 10
April 15	January 22	October 15	July 24
May 1	February 7	November 1	August 10
May 15	February 21	November 15	August 24
June 1	March 8	December 1	September 9
June 15	March 24	December 15	September 23

* Adapted from the Missouri Agricultural Record Book for Secondary Students

prefix (a letter code for an individual farm) inside the ear of the calf. Then they rub ink over the tattoo. To read the number, the calf must be restrained in a head gate. Tattooing is a permanent form of identification.

Another permanent form of identification is branding. Producers can use either fire branding or freeze branding. Fire branding involves placing a metal branding iron in a fire until it is red hot and then branding the animal. The brand burns away the hair in the shape of a number or symbol. Fire brands lower the value of the animal's hide. Freeze branding, in contrast, does not affect hide value. It involves placing the branding iron in a solution of liquid nitrogen or dry ice and alcohol. The hair is then shaved from the area where the brand is to be placed, and the animal is branded. The cold brand removes the pigment from the skin, and white hair grows back in that area. Freeze brands work especially well with black calves. They are more humane than fire brands. All farm insignia brands should be registered with the Missouri Department of Agriculture.

Summary

Managing a beef herd involves monitoring several factors. For example, Cattle diets must consist of the proper levels of nutrients to ensure health and production. Producers must also manage reproduction closely to help ensure that females will be bred. Finally, they should properly identify cattle with either an ear tag, tattoo, or brand to aid in identification and record keeping.

Credits

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