



Vet Call

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Why are my cows open?

As we approach late summer and early fall — the time of year when the pregnancy status of many spring-calving herds is determined — I am often asked to theorize why a particular group of cattle have fewer pregnant cows than anticipated. Generally, my options fall into one or more of these four categories: (1) the bulls are at fault; (2) the cows are at fault; (3) a disease is at fault; or (4) nobody is at fault.

Bull problems

In order for bulls to impregnate cows, they must be able to produce adequate amounts of fertile semen, to find cows that are in heat and to deliver fertile semen to the cows' reproductive tracts at least once during estrus (heat).

Testicular damage from physical, toxic, genetic or infectious causes can decrease both the number of sperm cells produced and the ability of sperm cells to reach and to fertilize an ovulated egg within the cow's reproductive tract. Poor eyesight can interfere with a bull's ability to find cows in heat; and sore feet, legs or spine can cause a bull to refrain from pursuing and mounting a cow he detects in heat. Damage to a bull's penis or prepuce is likely to prevent him from successfully delivering semen to the cow's reproductive tract.

Although very few bulls are completely sterile, surveys indicate that 10%-20% of bulls given a breeding soundness examination (given by a veterinarian and often referred to as a BSE) will fail to meet the criteria for a satisfactory breeding bull. Bulls that fail a breeding soundness exam will likely fail to cause pregnancy in a high percentage of cows to which they are exposed.

Cow problems

Cows and heifers must have regular estrous (heat) cycles during the period they are exposed to bulls in order to become pregnant during the breeding season. By initiating cycling prior to or early in the breeding season, females will have several

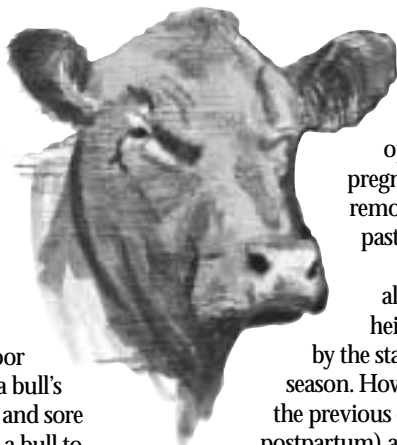
opportunities to ovulate a fertile egg and become pregnant during a limited breeding season.

If heifers have not reached puberty or cows have not resumed cycling by the first few weeks of a 60- to 70-day breeding season, they will only have one or two opportunities to become pregnant before the bulls are removed from the breeding pasture.

Age, weight and genetics all influence whether a heifer has reached puberty by the start of the breeding season. How early a cow calved in the previous calving season (days postpartum) and her level of energy reserve (fat/body condition) during early lactation will affect whether a cow resumes fertile cycles by the start of the breeding season.

Bull infertility problems experienced the previous year or herd nutrition problems [low body condition score (BCS)] during late gestation and early lactation can cause many cows to slip late into the calving season before giving birth. A late average calving date will increase the risk of cows not having enough days postpartum to resume cycling early in the next breeding season.

In addition, limiting forage and feed quality or quantity late in gestation will reduce body condition to the point where the luxury of reproduction is delayed until energy reserves are restored to adequate levels. Cows that don't have enough days postpartum or enough energy reserves are not likely to express estrus or ovulate fertile eggs and, therefore, cannot become pregnant.



Disease problems

A few infectious diseases can cause failure of fertile eggs and sperm to initiate pregnancy, or cause death of a very early embryo. These include vibriosis and trichomoniasis. In addition, other diseases can cause the death and abortion of fetuses later in pregnancy. Infectious bovine rhinotracheitis (IBR) and bovine viral diarrhea (BVD) viruses, bacterial diseases such as leptospirosis, and protozoal diseases such as neosporosis can each cause abortion. Embryo loss or abortion early in the breeding season may allow enough time for the cow or heifer to resume cycling and become pregnant again before the end of the breeding season. But usually, if the breeding season is restricted to 60-70 days, abortion will result in cows that are open when examined for pregnancy in the fall.

Other problems

A certain percentage of fetuses have genetic flaws that are fatal. These flaws are not due to disease or heritable genetic problems, but are rather a testimony to the complexity of biology. These losses are probably unavoidable. Typical pregnancy loss due to genetic and other causes between the time of pregnancy diagnosis until calving is 0.5%-2%.

A final reason for pregnancy percentages to be lower than desired is that people tend to want above-average results every year. Remember that if your average pregnancy percentage is 94%, half of the time you will have more than 94% of the cows pregnant and half of the time you will have less than 94% of the cows pregnant. If your average pregnancy percentage is 94%, year-to-year pregnancy percentage may range from 91% to 96%, and occasionally from 89% to 98%, due to normal biological variation.

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