

Stop Reprod

Higher input costs, calf prices double incentive to investigate cause of open cows.

by Troy Smith, field editor

Most cow folk have realistic expectations. They understand reproductive failures can and do occur in cow-calf operations. Some cows fail to become pregnant, and some cows may conceive but experience early embryo loss or abortion. Conscientious cow-calf producers want to minimize the occurrence of reproductive failure by addressing the reasons they occur. Still, the right reasons can be hard to identify.

“There are many potential causes,” says South Dakota State University (SDSU) Extension Veterinarian Russ Daly, noting how the reasons for reproductive failure vary among different operations and can vary from year to year on any given operation. “It can be really challenging to sort out specific causes. It doesn’t help when we don’t even know it has happened until long afterward. Often, that’s not until the herd undergoes pregnancy diagnosis, and we’re surprised by the number of open cows.”

According to Daly, a producer’s herd health veterinarian is a valuable ally when investigating the cause or causes for reproductive failure in the cow herd. Most will first look for culprits from among the usual suspects, including nutrition, disease and various environmental factors — or it could be a bull problem.

Start with nutrition

Daly says nutrition is a good place to start looking, since the body condition of breeding females prior to and during breeding season can have a big effect on

pregnancy rates. That’s especially true for young females that are still growing. Canton, Mo., Veterinarian Dan Goehl agrees that when pregnancy rates aren’t quite up to snuff, it might be nutrition-related.

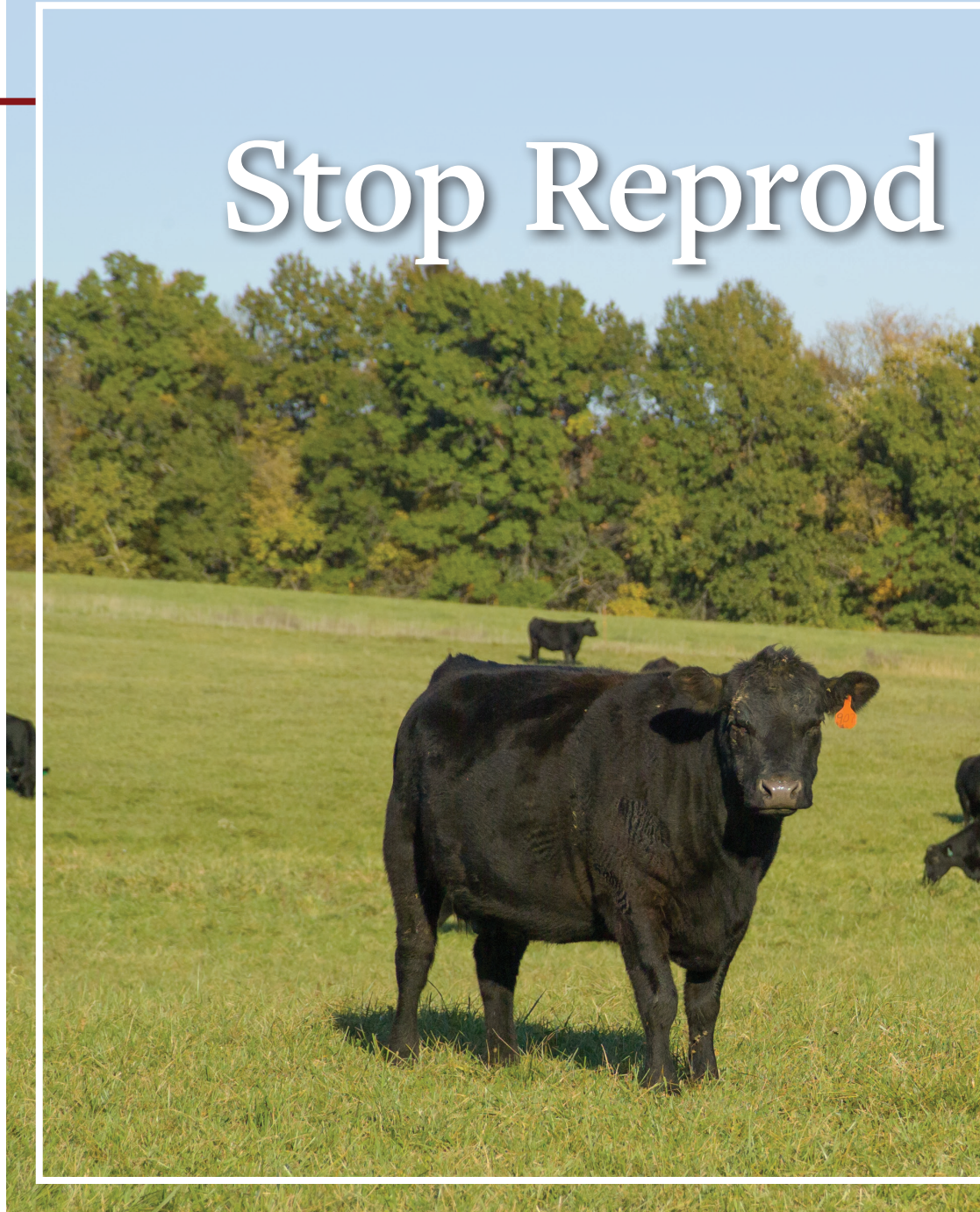
“What often happens is too many first- and second-calvers fail to breed back,” explains Goehl, who advises producers to monitor body condition scores (BCS) of all breeding females. At breeding, a BCS 5 on a 9-point scale (9 being obese) is recommended for cows. A BCS 6 is recommended for heifers.

“I like to see cows in good body condition when they calve, and maintain it through

breeding season,” says Goehl. “Maintaining a positive plane of nutrition, paying attention to energy and protein, is most important. I’d prefer to see cows in BCS 3 or 4 but gaining condition, rather than see them at 6 and losing it.”

Avoid sudden change

Goehl advises producers to avoid sudden changes in diet that can jeopardize pregnancy. It probably happens more often than producers realize, he says, especially among replacement heifers that have been developed in a drylot setting while receiving a total mixed ration (TMR).



Reproductive Failure



If heifers fed in confinement are moved to pasture soon after artificial insemination (AI), they may be exposed to an environment and feedstuffs that are unfamiliar, he explains. Even when ample high-quality pasture or range is available, heifers unaccustomed to grazing may not consume sufficient nutrients until after a period of acclimation. Goehl says early embryonic death may result from a stressful transition.

Troubling toxins

Abortions also may occur as a result of cattle consuming toxins present in the diet.

In Goehl's practice area and across the Fescue Belt, cattle producers must carefully manage grazing of endophyte-infested tall fescue. The endophyte produces ergot-alkaloid compounds that can be toxic when ingested in sufficient concentrations. The alkaloid compounds constrict the blood vessels, causing poor circulation and reduced blood supply to the uterus and fetus.

According to Daly, nitrate poisoning can result in "pretty dramatic and widespread pregnancy loss" in cow herds consuming feedstuffs containing high levels of nitrates. Common offenders include millet, sorghum,

sudangrass and most small grains, plus pigweed, kochia and many other common weeds.

High concentration of nitrates typically occurs as a result of weather stress, especially drought, or excessive nitrogen fertilization. Nitrate poisoning can occur when affected plants are grazed or harvested and fed as hay.

Since nitrates also may be present in water supplies, marginally toxic nitrate levels in water and feed together may cause nitrate poisoning.

Nitrate itself is not toxic, but ruminant digestion converts nitrates in forages to nitrites. Absorption of excessive levels of nitrites inhibits the blood's ability to carry oxygen. Affected animals often die, but pregnant females that survive may abort their calves.

Prussic acid poisoning and nitrate poisoning are not the same thing. But prussic acid poisoning also hinders oxygen transport, which may result in death or abortions.

Prussic acid toxicity is most commonly associated with sorghum and sudangrass hybrids, as well as Johnsongrass — species that naturally contain cyanogenic glucosides. However, when plants suffer injury that ruptures cell walls, these substances come in contact with plant enzymes, converting the otherwise nontoxic glucosides into prussic acid — another name for poisonous hydrogen cyanide.

Frost is a common cause of plant cell injury associated with formation of prussic acid. However, prussic acid will volatilize and dissipate in time, so it poses no threat when forages are harvested and fed as hay.

Abortions and reduced conception rates also may be caused by mycotoxins produced by fungi present in moldy feedstuffs. Reproductive failure, as well as other health problems, can occur when the moldy feed is ingested or when mold spores are inhaled.

"A small number of abortions are caused by germs or other agents that exist in the soil. They are always there and seldom cause any problems. But, for unexplained reasons,

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a few unlucky cows pick up something that gets in their bloodstream, then gets in the placenta and causes an abortion,” says Daly. “Cows naturally are a little immunosuppressed in late gestation, and that may be a factor.”

Disease

According to Goehl, reproductive diseases can cause some real wrecks, but they also may foster underlying fertility issues that persist over time. Goehl advises cow-calf producers to become familiar with infectious diseases most commonly associated with reproductive failure. Among the most common are bovine viral diarrhoea (BVD) and infectious bovine rhinotracheitis (IBR), which spread through direct contact or exposure to body fluids or secretions.

Campylobacteriosis (vibrio) and trichomoniasis (trich) are bacterial and protozoan infections, respectively, and both are most commonly spread by infected breeding bulls. Leptospirosis can be acquired through breeding or from the environment.

Neosporosis infects cows that have consumed feedstuffs contaminated by canine or feline feces. Anaplasmosis, which is transmitted through the bite of ticks and flies, ranks high among abortion-causing diseases in the southeastern United States.

Goehl urges producers to work with their own veterinarians to implement programs for immunizing breeding herds against reproductive diseases. There is no one-size-fits-all vaccination strategy. The risk of exposure can vary greatly among different operations.

“We all want vaccination to be effective, low in cost and easy. It can be hard to get all three,” says Goehl, noting that it’s a waste of time, money and effort if vaccination isn’t effective. “Just because you got some vaccine in your cattle doesn’t mean you got them immunized. It has to be the right kind of product. You have to store and handle the product correctly. You’ve got to administer it properly at the right time of year or the right stage of gestation.”

Even then, explains Goehl, there is no guarantee that vaccination will be 100% effective. Cattle may have an inadequate immune response due to stress associated

with weather, dietary deficiencies, parasites or handling. Sometimes a disease challenge is just overwhelming.

Managing the risk of disease is multifactorial and should include a biosecurity plan to prevent introduction of reproductive diseases when adding new animals to a breeding herd. Goehl says virgin heifers and bulls pose the least risk, but he recommends keeping all newly acquired animals away from the breeding herd for at least 30 days of acclimation and observation. It is better to avoid introducing new additions until after all pregnant cows in the existing herd have calved.

The bull

According to Goehl, bull infertility can result in catastrophic reproductive failure, particularly when cattle are managed in single-sire breeding pastures. Both he and Daly recommend all bulls receive a breeding soundness examination (sometimes referred to as a BSE) well before the beginning of breeding season.

A complete breeding soundness examination consists of a physical examination, thorough reproductive tract examination and semen evaluation, including checking motility and morphology of the sperm.

“The BSE is important, but we also need to remember that it’s just a snapshot in time. It gives us information about the bull on that day, but things can change,” warns Goehl. “A BSE can’t guarantee that a bull will stay sound, and it can’t measure libido. Producers often get pretty busy after turnout, with row crops or haying or whatever. But, we shouldn’t forget to monitor the bulls and make sure they stay sound and stay active.”

Keeping good records can be useful in tracking down reasons for reproductive failure, so Daly advises herd managers to keep track of what bulls were with which groups of cows. Other information that may be useful includes cow ages, body condition scores at the beginning and end of breeding season and health/vaccination histories. Make a record of what harvested feeds the cows received, as well as which pastures they grazed and the condition of those pastures.

Diagnosing a problem

Admitting that it’s not something producers like to hear, Daly calls it normal for a cow herd to experience some abortions. If the mid- to late-term abortion rate is greater than 1%-2%, however, producers should consult their veterinarian for help in diagnosing the cause.

A veterinarian can confirm the requirements for submitting samples and other pertinent information to a diagnostic laboratory. Generally, samples should include the placenta, as well as the aborted fetus. Even with good sampling, it can be hard to find the smoking gun.

“Of the abortion cases we see at our (SDSU) diagnostic lab, only about 50% result in a definitive answer. In the others, the germ or toxin is no longer present and there is no evidence, or not enough, to be certain of the cause,” states Daly. “But, I tell producers concerned about reproductive failures that it’s a way to evaluate their operations. Even if we can’t pin down specific reasons for a bad breed-up or an increase in abortion rate, we can look for weak links in our management. We can get better and maybe even stack the deck in our favor.” **ABB**



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Editor’s note: Troy Smith is a freelance writer and cattleman from Sargent, Neb.