Applied Reproductive Strategies in Beef Cattle

Herd Health Considerations for Maximizing Reproductive Outcomes

Story & photo by
TROY SMITH, *field editor*

Abortions, and especially those occurring mid- and late-term, are a source of frustration for cow-calf producers and their veterinarians. According to Iowa State University veterinarian Tyler Dohlman, abortion occurs among 2% to 3% of beef females in the United States. Higher occurrence definitely demands investigation. However, Dohlman says investigation of the first abortion occurring in a given herd may be the key to successful intervention.


Tyler Dohlman

In a presentation during the Applied Reproductive Strategies in Beef Cattle symposium Sept. 7-8 in Des Moines, Iowa, Dohlman talked about health considerations for enhancing reproduction, and particularly about considerations for minimizing abortion. He noted the many potential causes of abortion, including infections, reaction to toxins, misuse of vaccines, nutritional deficiencies or genetic abnormalities. Plus, he lamented the fact that many causes go undiscovered.

"For the most part, little has changed in the last 20 years, even though diagnostic tools have gotten better and vaccination programs have reduced the viral component in disease-related abortions," said Dohlman. "Still, about 70% of abortion cases result in no diagnosis."

According to Dohlman, diagnostic tests are only as good as the evidence that comes to the laboratory. In many cases only an aborted fetus is submitted, and maybe only part of a fetus. Often, the placenta is not submitted. Too often, there is no background information regarding breed or herd health and management history.

"It's a pet peeve of mine that the diagnostic lab often does not receive enough material or information to find an answer," stated Dohlman. "If labs always received the placenta, I think we could take that 70% (of cases that can't be diagnosed) down to 40%. In many cases the placenta is that valuable to diagnosis."

Dohlman allowed that, in reality, the placenta or other tissues may be impossible to recover. However, he advised producers to observe the following procedures when abortion occurs:

1. Identify the individual animal with appropriate identification and isolate from the herd.
2. Collect/Recover aborted tissue, including fetus and placenta — always wearing gloves due to potential zoonotic risks.
3. Call a veterinarian as soon as possible to get them involved and submit adequate tissues that will increase chances of getting a definitive diagnosis.
4. Talk to the diagnostician at the laboratory of choice, to make sure there is adequate information and tissue samples.
5. Package and chill samples and get samples to diagnostic lab ASAP — never freeze samples, because that could prevent accurate diagnosis.

To effectively use the information coming back from the lab, Dohlman advised producers to seek their veterinarian's help in devising a plan to prevent or minimize future occurrences. This may involve revisiting the herd health management program, including vaccination protocols and biosecurity measures.

"Many abortion causes can be mitigated through management," emphasized Dohlman.

Dohlman spoke during Thursday's ARSBC morning session focusing on health and well-being. Visit the Newsroom at *www.appliedreprostrategies.com*, which features comprehensive coverage of the symposium, to view his PowerPoint, read the proceedings or listen to the presentation. Compiled by the Angus Media editorial team, the site is made possible through sponsorship by the Beef Reproduction Task Force.

Unintended Consequences: Could MLV Vaccines Be Harming Reproduction?

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Perhaps the two most prominent infectious agents implicated in reduced reproductive performance of beef breeding herds are infectious bovine respiratory virus (IBRV) and bovine viral diarrhea virus (BVDV). Both have been linked with reproductive failures, including ovarian and estrous cycle dysfunction, fetal infection and pregnancy loss. Two types of vaccines for immunizing cattle against IBRV and BVDV are widely available, but some controversy exists as to whether vaccines containing a modified live virus (MLV) pose a risk to reproduction, as compared to products containing an inactivated or "killed" virus when administered to breeding females.

As a presenter during the Applied Reproductive Strategies in Beef Cattle symposium, hosted Sept. 7-8 in Des Moines, Iowa, veterinarian Russ Daly was charged with addressing the alleged unintended consequences of using MLV vaccines. The South Dakota State University Extension veterinarian shared findings from research related to the effects that prebreeding vaccination with MLV vaccines may have on reproduction.


Russ Daly

Daly described studies involving naïve (not previously exposed or vaccinated) heifers that, when vaccinated with MLV product, exhibited negative effects such as ovarian damage, abnormal estrous cycles and lower pregnancy rates. Results also suggested that because of effects on the estrous cycle, hindered reproductive performance can extend beyond the first cycle.

"I think the take-home message is clear. Don't give naïve heifers MLV at breeding time," warned Daly, adding that no problems should result from using MLV vaccine, administered 30 days prior to breeding, on heifers that were previously well-vaccinated.

Daly also shared results from studies applying different prebreeding vaccination intervals that indicate that in well-vaccinated females, MLV vaccines may be used nearer to breeding time than directed by product labels, without significant negative effect. Thus, vaccinations could be given at the time that an estrus-synchronization protocol is initiated, without fear of negative impact to reproduction.

However, Daly advised producers that an increasing amount of emerging evidence suggests that MLV vaccines, even when given at labeled prebreeding intervals, may negatively affect reproductive parameters compared to cattle vaccinated with killed-virus vaccines. The documented differences in reproductive performance between MLV-vaccinated cattle and those vaccinated with killed vaccine are not very large — some are statistically insignificant — but differences exist.

"It appears there may be something subtle going on," said Daly, who advised producers to consult their veterinarian to develop vaccination programs incorporating the best type of vaccine for their individual operations.

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Editor's Note: *Troy Smith is a cattleman and freelance writer from Sargent, Neb. The 2016 ARSBC was hosted in Des Moines, Iowa, Sept. 7-8. Visit the Newsroom at* www.appliedreprostrategies.com *to view PowerPoints, read the proceedings or listen to the presentations. Compiled by the Angus Media editorial team, the site is made possible through sponsorship by the Beef Reproduction Task Force.*