

Maximizing Reproductive Outcomes

Consider herd health factors.

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 (ARSBC) 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 as soon as possible — 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.

Unintended Consequences

Could MLV vaccines be harming reproduction?

Story & photo by **Troy Smith**, field editor

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.

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



Russ Daly

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

Tyler Dohlman and Russ Daly 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.



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

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.



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

2017 ARSBC workshop set for Aug. 29-30

Make plans now to attend the 2017 Applied Reproductive Strategies in Beef Cattle (ARSBC) symposium Aug. 29-30. Hosted by the Kansas State University (K-State) Animal Sciences and Industry Department and K-State Research and Extension, the event will be headquartered at the Hilton Garden Inn and Conference Center in Manhattan, Kan.

Considered the premier national event in beef cattle reproductive management, the meeting has a long history of providing the latest information on the application of reproductive technologies and includes a range of topics related to cow herd reproduction such as nutritional interactions, management and male fertility.

The meeting is open to anyone with an interest in beef cattle reproduction, including producers, technicians, veterinarians and professionals in related industries.

Program details have not been released for this year’s program, but visit www.appliedreprostrategies.com and watch for future announcements. Extensive online coverage of past meetings can be found in the Newsroom Archive at www.appliedreprostrategies.com. The meeting is organized by the Beef Reproduction Task Force, a multi-state Extension group made up of specialists from K-State, the University of Missouri, Iowa State University, the University of Nebraska, South Dakota State University, the University of Florida, the University of California–Davis, the University of Idaho and Oregon State University.

The Beef Reproduction Task Force hosted the first ARSBC Symposium in 2002 at Manhattan, Kan. Since that time, symposia have been conducted at 16 locations across the United States.

“We are looking forward to bringing this meeting back to Kansas,” says Sandy Johnson, K-State Department of Animal Sciences and Industry associate professor and extension beef specialist.

Hotel information is available at www.appliedreprostrategies.com.

For questions about the event, contact Johnson at sandyj@ksu.edu or 785-462-6281.



Temperament and Reproduction

Dam’s temperament affects reproductive performance.

by Kasey Brown, special projects editor

“We don’t need to raise puppy dogs, but we do need to select for temperament in the cow herd,” said Reinaldo Cooke. Temperament is a heritable trait at 0.50, so it affects the calf. The associate professor and beef cattle specialist at Oregon State University spoke to attendees of the 2016 Applied Reproductive Strategies in Beef Cattle (ARSBC) symposium in Des Moines, Iowa, last fall.

He shared several ways, both objective and subjective, to score temperament,

including chute scores and exit velocity. He averages those scores to create a temperament score, ranging from docile to aggressive, designated by 1-5, respectively. Adequate temperament includes those cows that earn a temperament score of 3 or less, and excitable temperament includes the scores of 4 and 5.

Cooke suggested selecting for temperament by sire selection and culling aggressive females, but granted that some “personality” should remain without impairing safety and productive



PHOTO BY TROY SMITH

Reinaldo Cooke

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traits. In cow-calf systems like his in Oregon, one pair goes on about 40 acres and that cow must have enough spark to protect her calf against predators and overcome challenges. Since temperament is heritable, he added that a cow's calf needs some personality to compete for bunk space at the feedlot. He prefers females with a temperament score of 2-2.5.

Temperament affects reproduction in several ways. He shared data that heifers with higher temperament scores reach puberty later. Higher temperament scores correlate to higher cortisol levels. He shared that cortisol affects luteinizing hormone, so these heifers have a harder time ovulating.

In addition to puberty rates, pregnancy rates improve with lower temperament scores, and so do weaning weights. Cooke reported that cows with adequate temperament scores weaned a calf, on average, 30 pounds (lb.) heavier than cows with excitable temperaments.

While temperament is heritable, acclimation also plays a large role. In a study in which heifers were acclimated to human interaction three times a week for one month, the acclimated heifers reached puberty sooner than the control group of heifers. These acclimated heifers had decreased cortisol concentrations and hastened reproductive development,

regardless of breed type. He granted there were no positive effects on cows due to acclimation. Acclimation works best with younger cattle.



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