MONTANA STATE UNIVERSITY EXTENSION

Cow Sense Chronicle

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Summer Pneumonia in Spring-Born Beef Calves

Greetings from Bozeman! I'm pleased to introduce Dr. Megan Van Emon as the new MSU Extension Beef Cattle Specialist located in Miles City. You can read more about Megan on page 3. She and I will be partnering to bring you unbiased, science-based beef cattle information. Megan is managing the Montana State University Beef Cattle Extension page on Facebook—check it out! If you see Megan out and about, please introduce yourself and welcome her to Montana!

The hot days and cool nights of mid-summer may bring summer pneumonia along with them. Summer pneumonia in nursing beef calves is not uncommon, but occurs somewhat randomly and with low frequency. A wide variety of risk factors for summer pneumonia exist. These include relative success of colostral antibody transfer, commingling of groups, weather changes, nutrition changes or deficiencies, pathogen exposure, handling stress, and even operation-specific risk factors like lack of labor.

The critical importance of adequate and immediate intake of colostrum after a calf is born was discussed in the February 2013 issue of Cow Sense Chronicle. Briefly, the immunity a calf receives through colostrum is called passive immunity, and is the major source of immune function in the newborn. If calves receive only limited amounts of colostrum, this is termed failure of passive immunity. Calves who experience failure of passive immunity are twice as likely to get sick before weaning, and 5 times more likely to die before weaning than calves that have adequate passive immunity. This means that incidence of summer pneumonia could be influenced by management at calving, by breeding decisions the previous summer that may have resulted in calving difficulty (limiting the calf's ability to get up and nurse quickly after birth), or by poor nutrition management or other stresses on the cow during gestation.

Commingling is a major and well-known risk factor for the development of bovine respiratory disease in calves after weaning. While mixing of sets of cattle is not normally a chief risk for nursing calves, commingling of groups from the same operation during the grazing season should not be ignored in regard to summer pneumonia risk. Moving pairs long distances to new pasture may also play a role.

Meanwhile, the weather can be a risk factor both early in the year and during the peak summer pneumonia season. Certainly, inclement weather can play a role in the success of passive transfer of antibodies from dam to calf. Heat stress, cold stress, and unexpected preweaning precipitation events like snow or freezing rain can all cause weather stress than can contribute to summer pneumonia.

Nutrition stress on cows during gestation can negatively impact calf health throughout the life of the offspring. Both energy and protein have been found to have impacts on fetal growth and development in utero and post-birth. Furthermore, poor nutrition can negatively impact colostrum quantity and quality. Nutritional impacts of a change in diet can also impact nursing calves directly. Examples might include change to a lush pasture, change to pasture quality during drought, or creep feeding. Certainly, trace mineral deficiency, especially copper, selenium, and zinc, can negatively affect the immune system, which may result in increased susceptibility to summer pneumonia. In addition, toxicity from minerals, such as high-sulfate water, may impact calf health as well.

Exposure to pathogens such as IBR (infectious bovine rhinotracheitis), BVDV (bovine viral diarrhea virus), BRSV (bovine respiratory syncytial virus), BRCV (bovine respiratory coronaviruses), and *Mycoplasma bovis*, either within-herd or from other populations is also a risk factor in summer pneumonia.

Fortunately, summer pneumonia responds well to treatment if caught early. A variety of antibiotic and anti-inflammatory drugs have been used with success. Additionally, a well-managed herd health program including vaccination of cows and calves can greatly assist in herd immunity. Contact your veterinarian for summer pneumonia treatment advice and vaccination program recommendations.

Congratulations to the MSU Academic Quadrathlon team!

Anna Downen, Preston Kiehl, Jessica Roloff, and Ben Stokes tied for second with Texas A&M in the national contest in Kansas City, MO and Manhattan, KS July 20-21. Other schools competing included Ohio State University and Pennsylvania State University.

The Academic Quadrathlon is a 4-part animal science contest.

L to R: Ben Stokes, Jessica Roloff, Rachel Endecott (advisor), Anna Downen, Preston Kiehl

Introducing Dr. Megan Van Emon

Dr. Megan Van Emon began as the MSU Extension Beef Cattle Specialist located at the USDA-ARS Fort Keogh Livestock and Range Research Laboratory in Miles City, MT on August 1. Megan grew up on a small farm in northeast Indiana, where they raised pigs and dairy steers. She was a 10-year 4-H member and showed rabbits, goats, and beef. She studied Animal Science at Purdue University and graduated with her BS in 2006. Megan continued her education at Purdue with Dr. Scott Lake, studying ruminant nutrition and graduating with her MS in 2008. Her research topic was the optimization of protein quality of dried distillers grains with solubles for ruminants. Megan moved to Hettinger, ND in May of 2009 to begin her Ph.D. in ruminant nutrition with Drs. Chris Schauer and Kim Vonnahme. Using sheep as a model for cattle, her research focus was supplementing metabolizable protein to ewes during late gestation and determining the effects on the offspring. While in Hettinger, she also conducted research in weaning strategies with Angus calves and ram fertility. In May of 2013 Megan graduated from North Dakota State University with her Ph.D. After graduating from NDSU, she moved to Iowa State University as a Post-Doctoral Associate with Drs. Stephanie Hansen and Dan Loy in beef feedlot nutrition. Megan's main research focus at ISU was to determine the effects of feeding algae meal to beef steers on digestibility, preference, and performance.

Megan says, "I'm excited to be here in Miles City and I'm looking forward to getting around the state to discuss the opportunities available here in Montana. Please call, email, text, and stop by."

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