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SUMMER PNEUMONIA IN SPRING-BORN BEEF CALVES

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.

If you've been reading Cow Sense Chronicle for any length of time, hopefully I've convinced you of the critical importance of adequate and immediate intake of colostrum after a calf is born. 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.