

Cow Calf Bovine Respiratory Disease (BRD): Strategies for Management

References: Chen et al. 10.3390/ani12030334

Clinical Signs

- Depression
- Cough
- Nasal discharge
- Reduced feed intake
- Falling behind rest of herd
- Fever (>103 F)

Pathogens

- Type and quantity of pathogen play a role in severity of disease
- **Viral:** IBR, PI2, BRSV, BCV, BVD
- **Bacterial:** *Mannheimia hemolytica*, *Pasteurella multocida*, *Histophilus somni*, *Mycoplasma bovis*

GENERAL STRATEGY

- BRD is a complex disease where many factors play a role in the development and severity of disease. Vaccination alone will not control BRD in a herd.
- Work with your veterinarian to recognize the signs of BRD early and develop a treatment protocol for your herd.
- Develop a plan to reduce potential stressors and to improve nutrition, mineral status, and immunity.
- Vaccination works best in animals that are not stressed and have good nutrition.

ENVIRONMENTAL RISKS

- **Heat stress** contributes to disease, and can be avoided by working cattle early in the day or during cooler seasons
- **High dust levels** during processing: avoid by spraying down pens with water before processing
- **Crowding**
- Cattle **persistently infected (PI) with BVDV** in herd

HOSTS



Age

Calves are more vulnerable to BRD after maternal antibodies decline, which varies depending on pathogen type and initial antibody titer between 1 and 3 months of age



Sex

Male cattle (both castrated and non-castrated) are at higher risk

Late castration places unnecessary stress on male calves; early castration is less traumatic and reduces risk of disease



Hydration status

Dehydration during transport or processing can affect the respiratory tract and immune system, making it harder for the animal to clear infection



Nutritional status

Inadequate trace minerals reduces immune function and can result in low efficacy or failure of vaccines



Immune status

Inadequate colostrum intake may lead to poor immunity

Parasitism negatively impacts immunity

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PREVENTION



Adequate nutrition

- Work with a nutritionist, veterinarian, or extension agent to ensure proper herd nutrition, including adequate mineral supplementation.
 - This could involve trace mineral status testing and modifying the diet where necessary.



Adequate colostrum intake

- Failure of passive transfer is common in beef calves but often goes unnoticed.
- Consider tube feeding calves with colostrum if they have not nursed within 4 hours of birth or have a weak suckle reflex or feed a colostrum replacer if dam colostrum is not available.



Stress reduction

- Lowering stress during transportation and processing by applying low stress cattle handling techniques, spraying down surfaces before processing to reduce dust, castrating bull calves early, and avoiding hot times of the day or hot seasons for working cattle all are important strategies to reduce the risk of BRD.



Remove persistently infected cattle with BVD from your herd

- Vaccinating for BVD and testing for cattle persistently infected (PI) with BVD is the best strategy to avoid harboring a PI animal in the herd. PI animals can spread BRD despite vaccination and serve as a source of infection for other animals.
- PI cattle can be identified by submitting an ELISA-antigen ear notch test to your diagnostic laboratory.



Vaccination program

- Target respiratory pathogens specific to your operation with help from your veterinarian.
 - Respiratory vaccines for viral pathogens should be part of every herd health plan.
 - Add vaccines for bacterial pathogens depending on the risk factors for your herd.

CONTROL

When there is a higher than normal number of cases, **work with your veterinarian** to:

- Provide **treatment** for affected animals
- **Determine pathogens** involved by submitting tissues or carcasses of untreated animals to the diagnostic lab
- **Assess** herd risk factors and **adjust** herd management practices to reduce risks

TREATMENT

- **Early treatment** leads to better outcomes
- Follow your **veterinarian's treatment recommendations** for antibiotics
- Consider adding a **non-steroidal anti-inflammatory drug** such as flunixin meglumine
- Severe cases should be **separated** and **monitored** closely; support with supplemental feed