

# **Problems with Calf Pneumonia? Assess Your Calf Program's ABCs**

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As spring weather brings us wide swings in temperature, many farms face increased challenges with respiratory disease in preweaned calves. Although vaccines can be of great use (talk to your herd veterinarian for more information!), there are important aspects of the environment that influence risk of disease too. These factors, if done well, can help a good vaccine program succeed – and unfortunately, if not done as well, can mean we have high pneumonia rates even in vaccinated animals.

## **A – Air**

Air quality plays a huge part in risk of disease. Calves that are housed in a separate airspace from older (weaned) animals typically have lower airborne bacterial counts than calves housed with older animals. If your calves are in the same airspace as older animals, consider how fresh air is brought into the barn, to possibly deliver this from youngest to oldest animals.

Ventilation is essential to consider – during winter, positive pressure ventilation which brings fresh air from outside to calves without drafts is generally considered the gold standard when building a calf facility. In summer, having additional natural ventilation or higher speed air flow through summer speed fans are a great addition to positive pressure tubes.

Air quality is important to assess at the calf level. Although the air exchange might be great in the middle of an alley, in a barn with only natural ventilation, air quality in the pen may be different. Calves spend the majority of their time laying – so air quality right on the ground is important to consider, which brings us to our next section...

## **B – Bedding**

Since air at the calf level is so important, bedding can have a big impact on this microenvironment. Long straw had been shown to be associated with improved health outcomes in preweaned calves compared to other bedding types – this may be in part due to the ability that long straw can provide calves to 'nest', where their knees and hocks are not visible when they lay down. In winter, this has benefits so calves can stay warm and dry with less energy expenditure, and convert more of their milk calories into growth and development. In all seasons, having deep bedding means less ammonia at the calf's level when laying down, and drier, cleaner bedding.

A Wisconsin study which compared calves with deep bedding (calves that could 'nest', where hocks and knees were not visible when laying down) compared to less deep bedding, and farms with lower bacterial counts to higher bacterial counts, it was found that although farms with less airborne bacteria had less pneumonia than farms with higher bacteria in the air, this was less important than the presence of deep bedding! That means that, in a barn with high airborne bacteria (eg. a farm that houses calves with older animals, and only natural ventilation), providing deep bedding can have a bigger impact than strategies to reduce airborne bacteria. This is due to the impact of the microenvironment right at the calf's nose level.

## **C – Colostrum**

Getting calves off to the right start with adequate volumes of clean, good quality colostrum is another key aspect to preventing all diseases, including respiratory disease. An inexpensive first step to evaluating your colostrum program could involve taking a blood sample between 2 and 10 days of age to check their serum total protein. Achieving at least 90% of your calves above 5.2, and 80% above 5.5, means you are delivering enough high quality colostrum into your calves soon

enough. If results are less than these cut points, your vet can help you best investigate where the challenges lie in terms of colostrum feeding timing, quantity, quality, and cleanliness. Talk to your herd veterinarian for more information on testing!



*Bedding with long straw that covers calves knees and hocks when they lay down has been shown to be associated with better health outcomes in calves. Especially if your calves share an airspace with older animals, deep bedding with long straw can help decrease the number of calves with pneumonia.*