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Dairy Newsletter
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Ventilation, Positive Pressure Tubes, and Healthy Calves

Ventilation is a key factor in the health of both cows and calves; and was therefore a big part of this year's Ontario Association of Bovine Practitioners conference. Although natural ventilation may work well in dairy cow barns, it typically is poor in a calf barn. This is largely because the calves do not produce enough heat to warm barns in the winter and there are many times throughout the day (especially mid-morning) where it is actually colder in the calf barn than outside. This means that the cold air does not fall to mix with air in the barn and the air remains polluted at the calf level; up to 25000 – 3 million cfu/m^3 of bacteria (outdoor air is 100 – 1000 cfu/m^3).

With more bacteria in the air calves are much more likely to suffer from pneumonia; so we need to deliver fresh clean air at the calf level. Positive pressure tubes are an excellent way to do this; they take fresh air from outside the barn and deliver it directly to the calf all year round. The air flow from these tubes is less than 60ft/min; which is perceived as still air and the calf does not feel a draft, yet it is enough to displace the polluted air at the individual calf level. When the tubes are correctly installed they can reduce pneumonia treatments by ½ to ¾ the previous treatment level. The tubes must be custom fit for your barn in order to work properly; the height of the tube, placement of the holes, size of the holes, and size of the fan must all be precisely calculated to meet the needs of your barn. In addition to the year round tubes some farms opt to add a summer tube, these tubes provide a draft to be used for cooling in the summer months. Almost any barn can be fitted with a tube; so if this is something that interests you, Dr. Phil Meadows is certified to design a custom tube for your barn!

Although positive pressure ventilation is highly recommended there are a couple of other easy things you can do to reduce pneumonia in your claves. The first is to bed with more straw; by bedding with enough straw to completely cover the calves' legs when they lie down you can reduce pneumonia by up to 30%. This is because the deep straw creates a microenvironment around the calf to protect her from bacteria circulating in the air. Additionally adding solid panels between calves can reduce pneumonia by up to 20% due to reduced transfer of bacteria and viruses between calves.

Positive Pressure Tubes in the Holding Area

Although heat stress is not the first thing that comes to mind in January, it is an important limiting factor throughout the summer. The holding area is typically a bottleneck in the cow barn when it comes to heat stress; although many farms add fans to the holding area these often do not cover a wide enough area for all cows and typically it is only the boss cows that benefit. It should also be noted that when a cow stands her body temperature can decrease by up to 2.5^{o}F; however, when in the holding area we often see a steady rise in temperature instead. This rise in body temperature in the holding area will translate to more time standing in the barn leading to lower milk production and increased lameness.

Positive pressure tubes in addition to sprinklers provide optimal cooling in the holding area. Wet skin and a steady air speed around 1 meter/second allow the cow to effectively evaporate heat away from her body. These air speeds can reach all cows by placing tubes in the holding area (more densely at the front where the cows spend more time standing). Once again these tubes must be custom fit in order to work properly, but when in place they can make the holding area a very comfortable place for the cow.

Rumensin CRC Changing to Kexxtone

Elanco has updated the Rumensin CRC bolus and changed the name to Kexxtone. The new boluses are very similar with a few minor modifications. Kexxtone boluses have longer wings to reduce the number of boluses spit back up. The Kexxtone boluses also have 12 monensin tablets containing 32.4g of monensin instead of the 10 tablets containing 32g of monensin that were in the Rumensin CRC boluses. Overall the name has changed but the bolus is very similar.

Rachel Poppe