



AIR QUALITY

Follow these ventilation tips for calves in variable temperatures

One of the biggest issues in a calf barn during the winter months is trying to keep air quality and ventilation stable, and bringing in a small amount of fresh air and distributing it evenly in the barn, but not exposing calves to drafts.

Positive Pressure Air Tube (PPAT) ventilation systems have become a popular solution to provide fresh air and distribute it evenly throughout the barn.

This concept isn't new, but has been redesigned into a better system than when it was first invented 30 years ago, according to Harold House, a retired dairy and beef housing and equipment engineer from the Ontario Ministry of Agriculture, Food and Rural Affairs.

"Thirty years ago, we would make a mixing chamber so the cold outside air was blended with the inside air to moderate it as it was coming in," explains House. "The system was recirculating all the pathogens inside a barn and spreading them, making air quality worse instead of better."

Dr. Ken Nordlund, University of Wisconsin, improved the system and instead proposed blending fresh outside air with the inside air, so that the fresh air would come inside regardless of the outside temperature. This fresh air would slow to an air speed of less than 60 feet

per minute at calf levels so the animals wouldn't feel fresh air movement as a draft.

"Overall, the key for winter weather is to get fresh air in and distribute it properly to the calves," says House. "But this also plays into shoulder seasons, like late fall and early spring, when temperatures can vary."

He recommends adjustable curtains or sliding panels for air inlets that can be opened or closed as temperatures fluctuate. A 12- to 18-inch strip of shade cloth should be placed along the top of a natural vent inlet so as the curtains or panels are lowered, the air has to pass through the shade cloth to enter the barn.

This is the same shade cloth used in the greenhouse industry. However, in calf barns, it reduces wind gusts and drafts coming into the barn. House suggests using shade cloth with 50 per cent porosity. This is enough to slow the wind down coming in and will not clog the cloth with dust.

"Along with the shade cloth, these inlets should be automatically controlled. Most producers just aren't in and out of the barn enough to control these manually, and it's especially important in changeable weather," House adds.

He also recommends trying to keep individual or group pens away from the outside barn wall. This is to prevent cold air from falling directly onto the calves. As well, calves like to lie against a solid surface, such as the outside barn wall. This draws heat out of them, meaning they need more feed to provide them with the energy they need to grow.

Other tips to keep calves comfortable during variable temperatures:

- Provide clean, dry bedding. Damp bedding doesn't insulate calves, causing them to lose heat. There should be enough long straw bedding that a calf

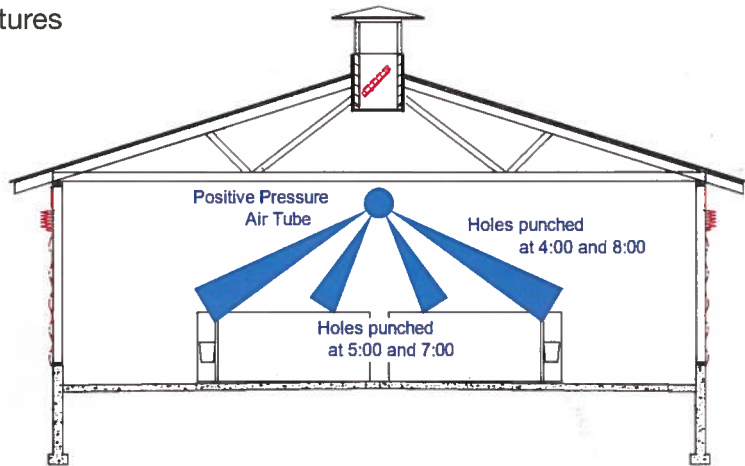


Photo Credit: Harold K. House, M.Sc., P. Eng., Engineer, Dairy and Beef Housing and Equipment Ontario Ministry of Agriculture, Food and Rural Affairs

can nestle into it and its legs are covered completely;

- Have solid pen dividers but keep the fronts and backs open to let air through. This gives them solid sides as draft protection, but keeps fresh air flowing through the pens;
- Reduce drafts around doors. An end pen close to a doorway can be susceptible to drafts. House recommends putting plywood on the floor to reduce drafts;
- Place a PPAT system's sensor away from the tube or air inlet. If it's too close to where the fresh air is coming in, it won't sense the barn temperature properly.

"Changeable weather is a challenge just because the larger the swing the harder it is for the calf, and you want to keep things as uniform as possible and change gradually from season to season," explains House, adding although calves become less sensitive to drafts as they get older, proper air quality and dry bedding are important. 🐄



PRODUCERS SHOULD invest in adjustable curtains or sliding panels for air inlets that can be opened or closed as temperatures fluctuate

Photo Credit: Harold K. House, M.Sc., P. Eng.,



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