

Pig Barn Winter Ventilation

WEDNESDAY, 04 JANUARY 2017 BY GILBERT VANDENHEUVEL



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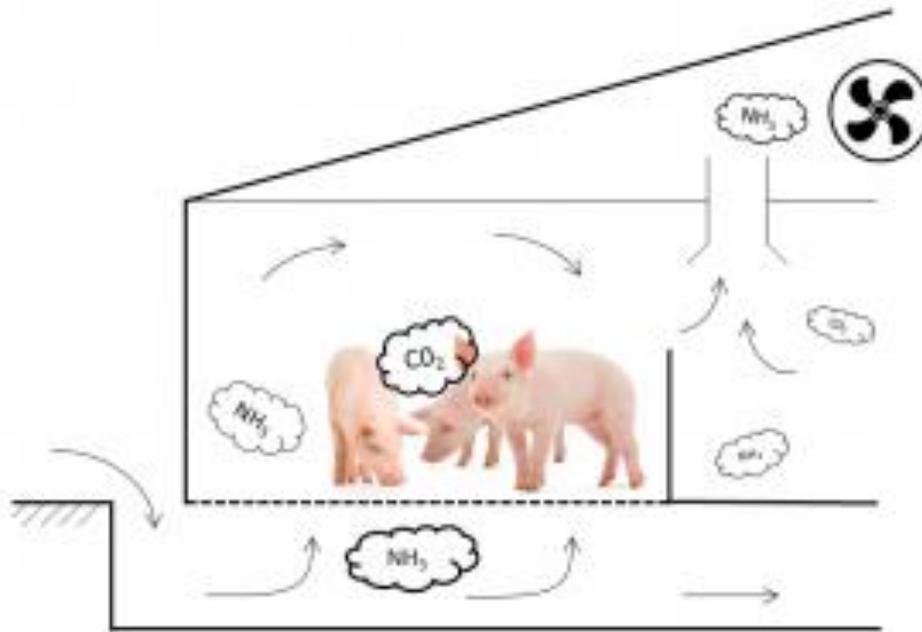
By Gilbert VandenHeuvel

Winter Ventilation in Pig Barns

As herdsmen(women) we have been entrusted with the day to day well-being of the staff, who work each day in the barns and the animals in our care.

During cold Canadian winters, providing quality air in the grower and finisher rooms can seem like a balancing act between clean air and energy costs. For the sake of you and your staff and the health and performance of your animals, proper air quality should be basic fact.

Here are a few points to think about:



- If you breathe uncomfortably while in a pig room, or the room has visible vapour, barn workers health is at risk and the pigs are struggling too. More often there can also be conditions where you can't tell if ammonia (NH_3)

levels are elevated but if exposed to too much ammonia for an extended period of time, respiratory problems can occur.

- From an paper from Dr. C. Dewey, B. Cox and J. Leyenaar. Increased incidence of chronic cough, wheezing, chest tightness, irritation of the eyes..... can be experience in areas with ammonia (NH₃) concentrations as low as 7 ppm. Ammonia is expected to stay in the upper respiratory tract. However, ammonia can adhere to dust particles and then will be carried to the smaller airways, causing more serious problems.
- Citing Harry Huffman's comments at the 2009 London Swine Conference. Ammonia gas is released from the pig's manure and should be kept at less than 20 parts per million. Additionally, the relative humidity in the barn should be less than 70 percent.

From this information the question comes to mind: how do we measure ammonia and humidity levels so we can manage our barn's ventilation system to provide clean air without using too much heat?



- Ammonia test
 - Paper test strips and Detector Tubes are available on-line or we can source them for you.
 - Directions for use are on the back of the ammonia strips package.
 - 1. Tear off a 2-inch piece of ammonia strip.
 - 2. Wet 1 inch of the strip with clean/distilled water.
 - 3. Wave the strip near animal level for 20 to 30 seconds.
 - 4. Wait 15 seconds and compare the strip color with the color chart on package.

- Another low cost ammonia test with accuracy within 20% is called Colorimetric Tube or Detector Tube



- Use the provided air pump to draw air through the glass tube.
 - The chemical inside the tube will change colour
 - Like a thermometer, you read ppm of ammonia on scale printed on tube.
 - There is also a passive detector tube that stays in place for up to 24 hours and reads an average ammonia level.
- Humidity: a basic humidity tester can be found at most hardware stores. Place it in the room close to pig level during the test period.

You and your staff will quickly acclimatize to the smells of ammonia so it's important to not just depend on the simple nose test as your air quality method.

When setting your minimum ventilation for your pigs rooms, remember the health benefits of cleaner air are more important than a few dollars in heating costs.