

## Pig Improver

### Optimizing Ventilation in the Pig Barn: Why ventilation is so important, and how to get it right



Maximizing the profitability of your operation means that every weaned pig should thrive. This will only happen with optimum feed, water and air.

In previous PIC Pig Improvers, we have reviewed the importance of early pig care in achieving optimal lifetime performance.

Proper ventilation in the pig barn is crucial for all phases of production, including care of weaned pigs. Proper ventilation is a critical factor in animal well-being and in delivering on health-related performance parameters such as growth rate.

While ventilation management can seem somewhat complex, managing these factors effectively can be easily achieved.

In upcoming issues of PIC's Pig Improver, we will cover:

- ✓ Temperature
- ✓ Air exchange (humidity, airspeed/static pressure and CFM)
- ✓ Calculations (pig needs, fan, and inlet adjustment)
- ✓ Troubleshooting

In this edition of the Pig Improver, we challenge you with a short quiz to review terminology – and to check how much you already know about ventilation management!

## Can you choose the correct answers?

1. **True or False.** In a pig barn, ventilation is defined as both the circulation of gases in the building and the exchange of gases between the building and the outside environment.

The answer is True. Ventilation relates to both air intake / exhaust and circulation of air within the barn.

2. **Ventilation plays a crucial role in pork production by:**
- a) ensuring barn oxygen levels adequately support pig performance
  - b) minimizing food and water competition between pigs
  - c) promoting good pig health and welfare plus a healthy worker environment
  - d) attaining a longer lifespan of the barn and the assets it contains
  - e) every answer, except b)

The answer is (e). Proper ventilation results in adequate oxygen for good pig performance, better pig health and welfare and a healthy worker environment. It can also allow barns to achieve a longer lifespan.

3. **PIC recommends maintaining a relative humidity of what level (or less) in the pig barn, when possible?**
- a) 65 %
  - b) 70 %
  - c) 60 %
  - d) 75 %
  - e) None of the above

The answer is (a). A relative humidity of no more than 65% is recommended, when possible. Too much humidity (water vapor in the environment from pig respiration, evaporation from pig waste, etc.) can contribute to many problems.

4. **True or False?** This picture shows a problem resulting from excess humidity.



The answer is True. Condensation is a sign that humidity levels are too high.

5. **Keeping a barn humidity level of 65% or less will:**
- a) discourage the formation of condensation
  - b) keep floors as dry as possible (discouraging the growth of pathogens and promoting better welfare)
  - c) answers a) and b)
  - d) assist workers in implementing a proper placement plan for weaned pigs
  - e) all of the above

The answer is (c). Maintaining good barn humidity level will result in no or minimal condensation and drier floors. This, in turn, supports lower growth rates of bacteria, viruses, fungi and mites, resulting in better pig health and welfare, as well as a good working environment for staff. In addition, a pig in a damp environment will perceive the temperature as 10°F less than it actually is.

However, note that barn conditions that are too dry can result in:

- ~ INCREASED DUST AND OZONE LEVELS
- ~ INCREASED SPREADING OF PATHOGENS
- ~ INCREASED RISKS OF PIG RESPIRATORY INFECTIONS
- ~ INCREASED COSTS FROM OVER-VENTILATION

6. Control of barn air conditions **can be limited when the outside environment exceeds the temperature and humidity** percentages desired in the barn. **True or False?**

The answer is **True**. If outside air is higher in temperature than what's desired in the barn and/or higher in humidity than the barn air humidity target, it is more challenging to control barn conditions - particularly during hot and humid days.

7. **Is this correct?** CFM refers to cubic feet of air exhausted per minute (air volume), and FPM is a measure of air speed in feet per minute.

This statement is correct.

8. **As a general rule of thumb, for every 100 FPM of air velocity out of the ceiling inlet, how far is the air thrown before it's circulated?**

- a) 1.5 feet
- b) 2 ft
- c) 2.5 ft
- d) 3 feet
- e) 4 feet

The answer is (b). 2 feet.

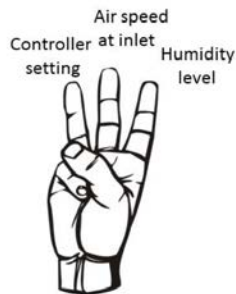
**REMEMBER:**

## Your Three Tools for Ventilation

Regular checks by trained people  
(at least every week)



Quick checks  
Random inlet checks in each barn visit



**Managing ventilation properly is another step to ensure you are achieving the genetic potential of your pigs**

In upcoming *Pig Improvers*, PIC will provide you with the latest guidance on several aspects of optimal ventilation management.

Our future – and yours – has never looked so bright, as PIC continues to deliver on our promise to Never Stop Improving.

***In the next Pig Improver: Understanding ventilation and temperature***