



Pig Improver



Ventilation Air Exchange

Is your air exchange promoting maximum herd productivity?

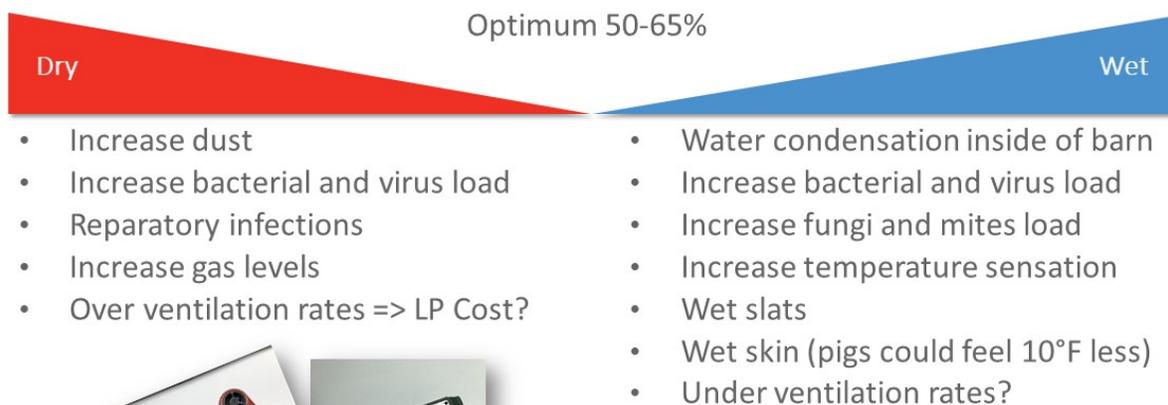
Ventilation is critical in achieving top performance for any pig herd. **When environmental conditions are not optimal, pigs won't maximize their genetic potential – and farm profits will not be as high as they could be.**

To prevent humidity and gas issues, fresh air intake must be balanced with comfortable temperatures for proper pig activity levels, feed intake and growth rates. In this issue of PIC's Pig Improver, you will learn about best practices for barn ventilation management to maximize the performance of your pigs.

The Importance of Humidity

The importance of humidity PIC recommends operating at less than 65% relative humidity when possible, this to keep good air quality for both pigs, staff and barn lifespan. Having too low or too high humidity has consequences:

Humidity Impact



Dry

Optimum 50-65%

Wet

- Increase dust
- Increase bacterial and virus load
- Respiratory infections
- Increase gas levels
- Over ventilation rates => LP Cost?

- Water condensation inside of barn
- Increase bacterial and virus load
- Increase fungi and mites load
- Increase temperature sensation
- Wet slats
- Wet skin (pigs could feel 10°F less)
- Under ventilation rates?





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Air is exchanged as a function of static pressure. Static pressure is the difference between indoor and outdoor air pressure and it is the reason why air can be exchanged, without static pressure there would be no humidity removal. Static pressure and air speed are directly correlated; operating fans at the desired air speed will produce the desired static pressure which should be between 0.05 – 0.1 (in. water). Or in other words, the amount of air being removed by fans affects how much air comes in through the air inlets.

Optimal pig performance requires good air quality.

**Remember the core premise of good ventilation management is:
Air exchange and temperature should be managed separately.**

This means that whenever the barn temperature falls below the set point, the barn ventilation system must still operate at minimum setting.

Additionally, keeping a minimum air speed will also minimize heat loss in the barn on an ongoing basis.

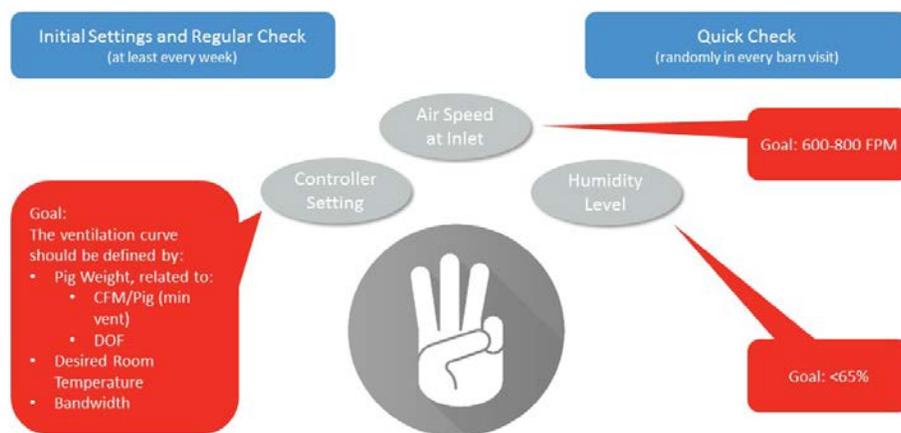
Remember

1. Cold air is denser than warm air and will therefore start to fall faster than warm air. Cold air entering the inlets will drop quickly to pig level and exit through the fans unless the air is moving at enough speed that allows it to mix with warm air before it reaches pig level. Having enough air speed can be achieved by setting inlets correctly and match them with fan extraction rate. Correct inlet settings will allow air to move at desired speeds of 600 to 800 FPM (feet per minute) across the barn ceiling. This will avoid producing a draft on top of the pigs and it will allow good air mixing to remove humidity from the barn through exhausting fans.
2. Increased energy costs, chilling pigs and having wet floors will be the result of inlet openings not matching the fan extraction rate (CFM). Inlet openings that are too tight can result in frozen inlets.

Additional Tips

1. On an ongoing basis please remember to check:

Ventilation System Checking



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- Determine your temperature and air exchange goals based on the needs of the pigs. Match fan output to pig needs and match the inlet setting to the fan extraction rate to achieve the desired air speed and static pressure.

Winter or summer, effective ventilation management is achievable, which will help you maximize the performance of your pigs.

If you want to learn more on ventilation, ask your PIC account manager.

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

The 11th episode of our podcast, [The Squeal](#), is now available. Click the episode link to learn more about Feeding the PIC Sow.

[The Squeal – Episode 11](#)

Feeding the PIC Sow, Part III: This episode concludes our series on feeding the PIC sow for optimal performance and focuses on farrowing and wean to estrus feeding programs with Dr. Steve Dritz (Kansas State University), Dr. Uislei Orlando (PIC), and Dr. Marcio Goncalves (former PIC nutritionist and Founder at Swine.It).

In case you missed the first two episodes:

[The Squeal – Episode 9](#)

Feeding the PIC Sow, Part I: Gilt Development

[The Squeal – Episode 10](#)

Feeding the PIC Sow Part II: Gestation

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