

Keeping Pigs Cool in the Summer Heat

Practicing some seasonal tips along with good husbandry can reduce the impact of heat stress on swine herd performance.



Grow-finish pigs, photo credit: Elizabeth Hines

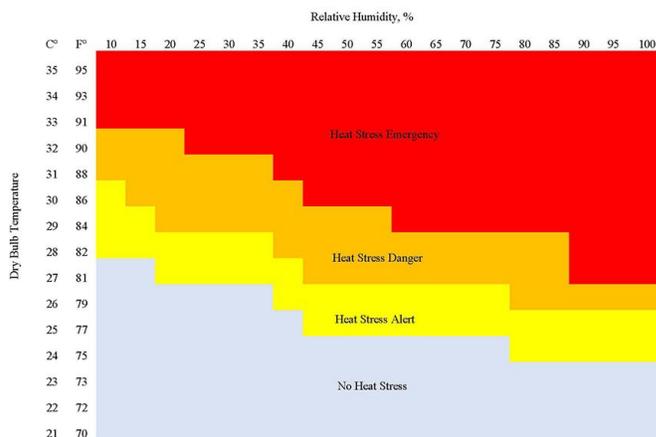
The hot days of summer can be a drag, especially for pigs because they do not have functional sweat glands. This means that they feel the heat just like we do, only they can't sweat it off!

This inability to cool themselves can very quickly lead to heat stress. As a pig producer, this can lead to impaired production from your pigs due to heat stress induced health problems, reduced growth rates, and reproductive performance problems.

Heat Stress Index

Mature pigs are most comfortable when air temperatures are between 50-75°F. Once temperatures exceed 80°F, pigs over 100 lbs. (grow-finish pigs, developing gilts, and mature sows and boars) can very quickly move into life-threatening levels of heat stress. Utilizing the below heat stress index, you can determine the potential for heat stress based on climate conditions.

Heat Stress Index



When temperature and humidity rise together, the chance of heat stress on grow-finish pigs increases (adapted from Livestock Industry Facilities and Environment: Heat Stress Indices for Livestock, Iowa State University, 2002).

Impacting Pig Production

In PA, high temperatures and humidity can be associated with sporadic heat waves, lasting only couple of days before the temperatures cool off again. These short duration heat waves facilitate acute and repeated instances of heat stress for pigs. Acute heat stress can be more taxing to your pigs and herd production than heat waves that last a few days because pigs do not get the chance to adapt to the heat. Heat stress events lead to feed refusal by pigs. Acute heat stress can induce reduced feed intake by 25-50% of normal feed intake. Repeated heat stress and repeated feed refusal events compound to reduce the growth rate of your pigs. Heat stress can impact all aspects of pig production. Aside from growth rates, heat stress can also impact herd health and reproductive performance.

Heat stressed pig herds typically observe

- Increased morbidity and mortality rates
- Increased risk of endotoxemia
- Reduced growth rate
- Reduced feed efficiency
- Changes to changes to carcass composition
- Delayed time to estrus
- Reduced pregnancy rates



PennState Extension

- Reduced farrowing rate
- Prolonged reduction in semen quality

As a caretaker, providing adequate resources for your pigs to cool off in addition to good husbandry can reduce the overall effects of heat stress on your herd.

Regardless of how your pigs are housed (inside or outside), here are some ways to mitigate heat stress

1. **Provide plenty of water:** Offer your pigs with at least twice as much water on hot days as they drink normally, both in amount of water and times offered during the hottest parts of the day. Allow pigs to use water to facilitate evaporative cooling by setting up water drip lines or sprinklers to let pigs get wet. Be sure to also have space in the pen to allow them to dry. Without drying, evaporation does not work to cool the pig.

2. **Provide shade:** For pigs raised outdoors, shade provides a retreat from the sun, the primary source of heat, and minimizes the possibility of sunburn for breeds with white hair and skin.

3. **Check your ventilation:** Poorly ventilated buildings can turn a heat stress alert situation into an emergency very quickly. Place fans that exhaust air out of the barn and be sure that inflows are not blocked. Check for air leakages around doors and walls, as these may minimize the appropriate air flow. For pigs raised outdoors, if you plan to provide shade in the form of a building or hutch, make sure that 2 or more sides of the building can be opened up and allow for natural airflow. In combination with water, ventilation provides the 'evaporative' part of evaporative cooling. Utilize both properly to keep pigs dry and cool.

4. **Adjust feeding times:** Provide feed during cooler times of the day when pigs are more likely to want to eat. Keep feeders free flowing and free of mold to encourage feed intake.

5. **Take care when handling animals:** Animal handling can very quickly become stressful for everyone, especially in high temperatures. Handling pigs early in the morning or late at night will minimize added stress. Pig's appetite should return in cooler temperatures, use this to your advantage when moving pigs.

Managing pigs through seasonal changes can be a challenge. Utilizing these tips in combination with good husbandry can minimize the effects of heat stress on your pigs and on herd performance. For specific information on dealing with heat stress in your herd, contact your Penn State extension educators or local veterinarian.

Supporting scientific resources for this article

- De Rensis, F., Ziecik, A. J. and Kirkwood, R. N. Seasonal infertility in gilts and sows: Aetiology, clinical implications and treatments. *Theriogenology* 96, 111–117 (2017).
- Gabler, N. K. and Pearce, S. C. The impact of heat stress on intestinal function and productivity in grow-finish pigs. *Animal Prod. Sci.* 55, 1403–1410 (2015).
- Parrish, J. J. et al. Scrotal insulation and sperm production in the boar. *Mol. Reprod. Dev.* 84, 969–978 (2017).

Authors

Elizabeth Hines

Swine Extension Specialist

eah405@psu.edu

814-865-3267

extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

This publication is available in alternative media on request.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

This article, including its text, graphics, and images ("Content"), is for educational purposes only; it is not intended to be a substitute for veterinary medical advice, diagnosis, or treatment. Always seek the advice of a licensed doctor of veterinary medicine or other licensed or certified veterinary medical professional with any questions you may have regarding a veterinary medical condition or symptom.

© The Pennsylvania State University 2020

Code: ART-5484