

Avoiding Heat Stress: How to Beat the Heat!

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By the time you are reading this you will be well aware of the hot weather that has come our way this summer. In all reality, we have been quite fortunate with the previous two summers being quite nice for weather extremes and pig production. For the last two summers, heat waves with elevated humidity were a rare occurrence and of short duration. Not this year. Producers are turning on their misters, drippers and sprinkler systems for the first time in two years only to find out they are broken or clogged.

You can't talk about heat stress without first explaining what it is. First off, pigs do not sweat, so evaporative cooling won't happen on its own. Heat alone is only part of the concern. It is actually the combination of heat and humidity that causes most of the issues. As the temperature starts to get closer to 75-80°F (24 -27°C) or above, the pig's ability to cool herself becomes more difficult particularly as relative humidity increases. The 35°C+ days and humidex readings in the 40's that we have been getting in the last month have created lots of issues.

Typical clinical signs of overheating in pigs include open mouth breathing, squealing, red blotchy skin, stiffness, muscle tremors, lethargy, increased heart rate, increased body temperature and in severe cases death. Overheating also leads to significant decreases in appetite and productivity. This year we are having numerous discussions with producers relating to heat stress in pigs and what we can do to reduce its' impact. No matter the age or stage of the pig, it is beneficial to consider the following management practices:

- Start chores earlier in the day when it is cooler
- Avoid stirring the pigs up during the heat of the day
- Increase ventilation and airflow by installing recirculating fans and regularly check cooling system to ensure it is in good working order.
- Have lots of water available and accessible.

- Maintain drinking water temperature as low as possible (around 10°C is ideal but difficult to achieve).



In a farrowing barn, heat stress can lead to sows not milking well, and in turn, reduced piglet weaning weights. If a sow is showing signs of severe distress, hose them down with cool water. In addition, when dealing with sows, you can help to combat the effect of heat by:

- Turning off heat lamps when appropriate for the size of pigs
- Turning off farrowing room lights when not in use
- Adjusting sow body condition to avoid over weight sows as they are most sensitive
- Avoiding vaccinations that can increase body temperature during extreme heat waves

It is also important to be aware of the effects heat stress can have on market pigs. In a heated environment, the animal's feed intake will decrease immediately in order to minimize the amount of heat the animal produces via metabolic activity. As a result, this typically reduces the average daily gain. A pig's intestinal defense system can also be compromised with as little as 2 hours of heat stress, and can lead to a bacterial infection (Pearce et al., 2013).

In order to minimize the negative effects of heat on market pigs, here are some helpful management practices:

- If space permits, reduce the stocking density.
- Supplement electrolytes and antioxidants through the water supply or feed.
- Increase dietary energy density.
- Minimise excess non-essential amino acids and fibre to minimise intestinal fermentation and therefore heat production ("Heat stress in pigs", 2018).

Evaporative cooling with the aid of misters, sprinklers or drippers are methods that many have used with good outcomes. It has been reported to significantly improve feed intake and growth rate in growing pigs (Huynh & Aarnink, 2005). There are several things to consider in the management of evaporative cooling systems.

1. Start temperature: set to turn on automatically when the temperature exceeds 26°C.
2. Cycle Time: set so that pigs can dry off between applications of water. Remember that maximum cooling comes when the pig is dry between applications rather than wet all the time
3. Droplet Size: droplet size is controlled by the sprinkler head. Droplets that wet the pig rather than mist the air are preferred
4. Droplet Dispersion: It is important to avoid spraying water in the feeder
5. Ventilation: Evaporative cooling is most effective when air exchanges are maximized. Ensure that there are no limits placed on ventilation capacity by ensuring that inlet screens are free of dust and dirt build up and that fan louvers are clean

References

Heat stress in pigs. (2018). Retrieved from <https://www.agric.wa.gov.au/feeding-nutrition/heat-stress-pigs>

How to Reduce the Impact of Extreme Heat and Avoid Heat Stress in Pigs. (2018). Retrieved from <https://www.feedexpertise-techna.com/en/feed-nutrition/swine/heat-stress-pig>

Huynh, T., & Aarnink, A. (2005). Heat Stress in Pigs. *Pig Progress*, (21), 30-32. Retrieved from <https://www.pigprogress.net/Breeding/Housing/2005/4/Heat-stress-in-pigs-PP005278W/>

Pearce, S., Mani, V., Boddicker, R., Johnson, J., Weber, T., & Ross, J. et al. (2013). Heat Stress Reduces Intestinal Barrier Integrity and Favors Intestinal Glucose Transport in Growing Pigs. *Plos ONE*, 8(8), e70215. doi: 10.1371/journal.pone.0070215

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