

Preventing Heat Stress in Show Pigs

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It's summer time in Texas, and for anyone raising livestock, that means heat stress. Although we all realize that it is hot, we don't always recognize the signs of heat stress as well as its affect on our animals. While warm weather this time of year is normal, the animal's reaction to it and ability to cope with it may vary. Understanding how heat stress can affect the health and growth rate of your pigs and implementing some simple management practices can go a long way towards a more productive and comfortable summer for your animals.

Heat stress occurs when an animal cannot remove enough heat from its body. All animals produce heat from digestion. Excessive heat produced must be lost to the outside environment, if the animal is to remain comfortable and body temperature is to remain normal. Once an animal reaches the upper limit of its comfort zone, it must employ mechanisms such as increased respiration (panting), sweating, or other methods to dissipate heat. An animal that is expending energy to pant and sweat is taking that energy away from growth. Additionally, animals that are heat stressed often eat less, causing even fewer nutrients to be available. Heat stress can cause decreased performance in growth (average daily gain, lean tissue accretion), milk production, reproduction (conception rate, standing heat response, litter size), and can even lead to disease and death if severe enough. Pigs are especially susceptible to heat stress since their sweat glands are essentially nonfunctional and must dissipate heat by panting or evaporative cooling through the skin after wallowing in mud or water.

All animals, including humans, have what scientists refer to as a thermoneutral zone. Simply put, this zone is a range of temperatures in which the animal is the most comfortable, its body temperature remains normal, and sweating and panting do not occur. It is the temperature that the animal would reside in if it had its choice of many temperatures and environments. It is the optimum thermal environment from the animal's

standpoint, promoting maximum performance and the least amount of stress (including disease stress) for the animal. In other words, an animal does not expend any energy towards shivering, sweating, or any other mechanism to maintain its body temperature. An animal's thermoneutral zone will vary depending on age, nutritional plane, and physiological status (growing, lactating, gestating, etc.).

Once we understand the concept of the thermoneutral zone, we need to know what types of things can be done to keep our animals in that comfort range. For example, evaporative heat loss (from sweating, panting, etc.) is more important to the animal than heat lost by other methods (like lying on a cool surface). By employing some simple management techniques, we can prevent heat stress and maximize production.

The importance of available fresh water cannot be overemphasized. Even on a holding ration, the pig should always have access to clean, fresh water. The temperature of the water is important also. If the water has been sitting out in the sun all day in a metal container, it may have heated to the point of being too hot for the pig to drink. Check nipple waters also. If water lines are buried too shallow or are made of some type of metal, the lines may actually heat the water before it gets to the nipple. A good rule-of-thumb is, if you wouldn't like to drink the water that your pig has, it is probably time to change it.

One concept that is vital is that of evaporation. An animal will lose more heat from its body if it is sprayed down and then the moisture allowed to evaporate than if it is in continuous contact with the water. Think of yourself in a swimming pool and how much cooler you are after stepping out of the pool on a breezy day than when you were in the water. The same concept applies here. So, spraying or misting pigs down a few times a day and putting a fan on them will do more towards relieving heat stress than continuous spraying.

Some producers have set up a mist or drip system by poking small holes in a garden hose and letting it run off and on throughout the day. Others have simply sprayed down the hogs a few times during the day, allowing for drying in between. Whatever system you decide to employ, make sure there is adequate air movement for evaporation. Depending on the day, you may have to provide this as well through the use of a fan or even two.

Adequate shade is also a must. As many of you have probably already seen, pigs will sunburn. Providing a place where they can get out of the sun not only helps to prevent sunburn, it also aids in cooling, since the sun heats up most surfaces, including skin. If your animal does get sunburned, care should be taken in choosing an ointment or lotion to treat with. Many over-the-counter human products contain substances, such as lidocain, that can and will show up in drug tests. Ask your veterinarian or other producers who have dealt with sunburn in the past for some safe products to try.

Water, shade, and air movement are the keys to success when it comes to preventing heat stress. Pigs that are comfortable will perform closer to their genetic potential than those whose environment is compromised. Employing simple management techniques and being diligent and aware of the pigs' comfort will keep your pigs healthier.