

Heat Stress in Sows and Gilts



Heat stress can be the leading cause of infertility in sows and gilts during summer months. When ambient temperatures surpass 80 degrees, females will likely exhibit detrimental effects of heat stress. Most noticeably, fertility rates may drop as much as 15 percent for sows bred during periods of heat stress. Sow death loss may spike due to heat stress, particularly around farrowing. Producers can compensate by increasing the gilt pool. In fact, the number of replacement gilts needed to ensure one gilt farrows can triple during the summer months. Low farrow rates and increased number of replacement gilts can have a negative impact on herd output and number of non-productive sow days.

Sows and gilts are sensitive to heat because they do not sweat. The majority of cooling is done by panting and lying on cool surfaces, when available. High humidity can be a major contributor to heat stress. Thus, the heat index, a combination of heat and humidity, should be considered. A heat index calculator can be found on the National Weather Service Web site at <http://www.ncdc.noaa.gov/oa/climate/conversion/heatindex.html>.

INDICATIONS

By monitoring respiration rate during rest, producers can determine if females are heat stressed. Normal breathing rates are 15 to 25 breaths per minute. Breathing rates above 40 breaths per minute indicate pigs are at risk for heat stress. Feed intake in lactation will be depressed during periods of heat stress. Extended wean-to-estrus intervals and anestrus following weaning may also be an indication of heat stress. In particular, first parity sows are more prone to anestrus following weaning.

EFFECTS

Embryo mortality increases when females are heat stressed. When extreme heat is experienced within the first 30 days of pregnancy, sows and gilts will display pseudo-pregnancies and reabsorb fetuses. Heat stressed sows are uncomfortable. They may lay on pigs more frequently and exhibit reduced overall mothering ability. In addition, heat stressed sows in lactation will have difficulty producing adequate milk, resulting in lower weaning weights.

FIGURE 1. Heat Stress Effects on Pregnancy

DAYS PREGNANT	RESULT
1-14	Abort - Return to estrus within 21 days of breeding
15-30	Pseudo-pregnancies, females show pregnant at 30-day check but reabsorb fetus
30-60	No known/documentated effects
60-114	Increase in stillborns and decrease in birth weights

PREVENTION

Newsham Choice Genetics is committed to assisting you in maximizing the performance of your operation. Here are some tips to prevent and avoid heat stress:

- Ensure ventilation systems are operating correctly, providing adequate air movement. The minimum ventilation rates in enclosed facilities for breeding and gestating sows is 300 CFMs/head while the rate for sows with litters is 500 CFMs/head during hot weather.
- Evaluate air movement and distribution and remove or reduce impediments.
- Improve air temperature with cool cells. If these systems are activated when temperatures eclipse 75 degrees, then they will help keep the facility from heating up too quickly.
- Ensure a plentiful water supply. Adequate water supplies are critical for animals in hot weather.
- Ensure sprinkling systems are correctly placed and operational before heat stress is a threat. Sprinklers are effective for cooling sows in all places of production if used correctly.
- Proper heat lamp management is key during summer months to keep farrowing house temperatures comfortable.
 - Utilize 100-watt incandescent bulbs rather than heat lamp bulbs.
 - Keep heat lamps away from sows' heads during lactation.
 - Consider setting heat lamps to a thermostat or environmental control system to reduce unnecessary usage.
 - Turn heat lamps off on hot days (when temperatures exceed 85 degrees Fahrenheit).
 - Provide mats for pigs to compensate for cooling.
 - Turn heat lamps off after pigs are older than one week.
- Tune up your system prior to the summer season (generally April). Ventilation inspections include:
 - Ensure all parts of the system are operational, ie. fans, baffles, cool cells, drips, etc.
 - Ensure fan blades and fan shutters are clean to run efficiently.
- Avoid moving females during hot temperatures.
- Feed a consistent level of nutrition following breeding. Nutritional status before breeding also affects embryo numbers and survival.
- Maintain correct sow body condition. Correct sow body condition can help sows cope with heat stress. Over conditioned sows are more prone to heat stress. Nutritional programs and feeding practices should be reviewed during periods of heat stress.
- Closely monitor sows during early or late season temperature spikes. These temperature spikes may be more stressful to sows because the sows are not acclimatized to these temperatures.

Depending on geographical location, heat stress can be a serious problem for two to six months of the year. Proper precautions and management adjustments can greatly minimize the impact that heat stress can have on production levels, and enhance the overall comfort of sows.

NOTICE: Actual results may vary based on production factors over which Newsham Choice Genetics has no control including, but not limited to, management, animal handling, nutrition, environment, and disease. While the information contained herein is presented in good faith and believed to be correct, Newsham Choice Genetics does not guarantee results from reliance on such information and disclaims all liability for any loss or damage arising from use of this information or to any products said information refers. Any warranties and remedies available are set forth in written contracts with Newsham Choice Genetics.

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