



# SKOV International

**PIG EDITION**

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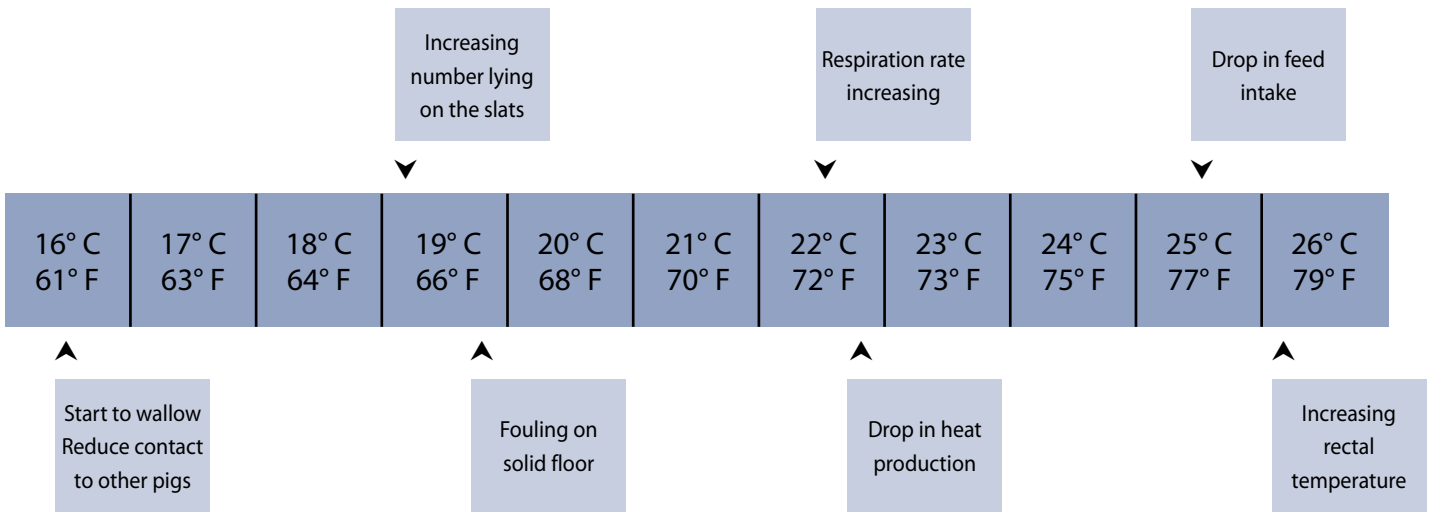
## Pigs' reaction to increasing temperature

Compared with other animals, pigs are relatively sensitive to high temperatures. The reason is the fact that pigs cannot sweat and they are not very good at increasing the heat release through panting.

In a Dutch test by Huynh et al (2005), the physiological and behavioural reactions among 60kg (132lb) finishers were examined at increasing temperatures (16 to 32° C/ 61 to 90° F). The pigs were stocked in a pen with 40% slats and 60% solid floor.

Wallowing (defined as the pig rolling in faeces and urine), was the first change of behaviour. It appeared at relatively low temperatures (16 – 17° C/ 61 - 63° F). Around 19° C (66° F), the number of pigs lying on the slatted floor (dunging area) was increased and around 20° C (68° F) the pigs began fouling on the solid floor. The first physiological reaction to the increased temperature was an increase of breathing frequency, which happened around 22-23° C (72-74° F). A drop in feed intake appeared around 25-26° C (77-79° F), whereas an increase of body temperature could be detected around 26° C (79° F).





Adaptation to increasing house temperature for a 60kg (132lb) finisher

The reason why the pigs moved to the area with slats at increasing temperature was the fact that the slats are cooler than the solid floor; often they are damp (increases the evaporative heat loss) and the air velocity is higher than in the resting area. When the house temperature rises, the pigs can thus increase their heat loss by moving to the dunging area. It appears from figure 1 that the number of pigs lying on the slatted floor was increasing at a slightly lower temperature than the particular temperature, when the pigs begin fouling on the solid floor. When approximately 30% of the slatted floor (dunging area) was covered with pigs, the pigs found an alternative place to dung and fouling increased on the solid floor (Aarnink et al, 2006). An increase of number of pigs lying in the dunging area therefore indicates that the environment is too warm and if nothing is done, the pigs will turn the areas around in the pen.

The test supports the recommendations of SKOV concerning the house temperature; it is recommended that 60kg (132lb) finishers have a temperature of 19° C (66° F) in houses with air jet ventilation.

In the Dutch test, they also checked the effect of spraying and water bath. They found out that the pigs having access to spraying had a significantly higher feed intake and higher daily gain compared to the pigs in the control group and the pigs with access to water bath. The spraying was ON for two minutes every 30 minutes between 10.00 am and 04.00 pm. The effect of the spraying on the number of pigs lying in the dunging area/ fouling on the solid floor was not checked.

However, results from a Danish test has shown that spraying has a positive effect on the hygiene in the pen (The Danish Applied Pig Research Scheme,1997).



Sources:

Aarnink, A.J.A., J.W. Schrama, M.J.W. Heetkamp, J. Stefanowska & T.T.T Huynh, 2006. Temperature and body weight affect fouling of pig pens. *J. Anim.Sci.* 84:2224-2231  
 The Danish Applied Pig Research Scheme, 1997. Cooling of finishers by using spraying systems. Report no.: 355.  
 Huynh, T.T.T., A.J.A. Aarnink & M.W.A.Verstegen, 2005. Reaction of Pigs to a Hot Environment. *Livestock Environment VII. Proceedings of the Seventh International Symposium, Beijing, China.*