

## THE RESPONSE OF THE LACTATING SOW TO AMBIENT TEMPERATURE

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The reduction in the growth rate of piglets suckling sows maintained at high temperatures has been assumed to reflect a reduction in milk yield (Schoenherr et al. 1989). However, it is not known whether this reflects a direct effect of high temperature on milk synthesis and/or whether it is due to a reduction in voluntary food intake (VFI).

Twenty-four first-litter sows were housed at either 20°C or 30°C throughout a 28 day lactation. Six sows at each temperature were offered ad libitum (A) a Control diet (C) containing 14.3 MJ DE and 160 g CP per kg (20AC and 30AC). The remaining 6 sows housed at 20°C (20RC) were offered the same amount of food as was eaten by 30AC sows while the remaining six sows housed at 30°C (30AHS) were offered ad libitum a diet containing 15.2 MJ DE and 210 g CP per kg (HS). The mean liveweight (LW) and depth of backfat (P2) of sows post-farrowing was 146 kg and 23 mm, respectively, and litter size was standardised to eight piglets per litter.

Treatment	20AC	20RC	30AC	30AHS	sed
Sow:					
LW change (kg)	-9.6	-19.0	-16.0	-21.8	6.96
P2 change (mm)	-5.6	-5.5	-4.6	-3.4	1.45
food intake (kg/d)	4.05	3.16	3.16	2.95	0.380
Piglets:					
birth wt. (kg)	1.51	1.30	1.50	1.46	0.112
wean wt. (kg)	8.18	7.63	7.44	7.32	0.780
Milk yield (kg/day)*					
day 0 to 14	8.88	7.86	7.53	7.54	1.020
day 14 to 28	9.54	9.47	7.83	8.30	1.393
day 0 to 28	9.21	8.67	7.68	7.92	1.053

\* calculated according to King et al. (1989)

VFI of sows at 30°C was depressed by approximately 25% compared with those housed at 20°C. Although the difference in milk yield was not significant during either early or late lactation for the pair-fed sows housed at the two temperatures, there was a strong indication that high ambient temperature was having a direct effect on milk yield. The average birth weight of piglets from the sows pair-fed at 20 °C was significantly less than for the piglets held at 30 °C and this may have contributed to the lack of significance in early lactation. Increasing the nutrient content of the diet offered to sows maintained at 30 °C had no significant effect on either feed intake or milk yield. These results indicate that high temperatures have a direct adverse effect on milk production.

KING, R.H., TONER, M.S. and DOVE, H. (1989). *Aust. Pig Sci. Assoc. II*, p98.  
 SCHOENHERR, W.D., STAHLY, T.S. and CROMWELL, G.L. (1989). *J. Anim. Sci.*  
 67: 482.