A COMPARISON OF THE PERFORMANCE OF SELF REGULATING HEATING MATS WITH INFRARED BAR HEATERS IN FARROWING PENS

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The effect of self-regulating heating mats measuring 450 x 1000 mm (Pigmats, MM Cables) and infrared bar heaters on growth rate and mortality of piglets in farrowing pens, was compared in an enclosed piggery near Gatton, during May to September 1989. The farrowing pens had slatted floors except for a solid section 500 mm x 1010 mm in the creep area. The temperatures at floor level fluctuated between 12–30°C.

Two similiar farrowing rooms were used. During the first 8 weeks, the pens in one room were heated by the mats and those in the other room by bar heaters, set 600 mm above the floor. In this time 26 sows farrowed and weaned their piglets at four weeks of age. The heat sources *were* then changed over until a similar number farrowed and weaned their piglets. The mats were left on continuously, whereas the bar heaters were used continuously only for the first 3 days. The *bar* heaters were subsequently turned off between 730 h and 1630 h.

The mortality rates were expressed as a percentage of the number born and adjusted for variation in the litter by means of analysis of covariance. The weight gains to weaning at four weeks were similarly adjusted for variation in the number of piglets weaned. Analysis of variance of power consumption values was carried out to provide information on the usage of electricity, The results are shown in Table 1.

Table 1 Mean (±s.e.) weight gain, percentage mortality and *power* consumption by radiant bar heaters and heating mats

Method of heating	Piglet weight gain# to weaning (kg)	Percentage## mortality	Power consumption (kW-h)
Bar heaters	6.4 (0.4)	17.6 (3.2)	546 (31)
Mats	6.3 (0.4)	28.2 (3.1)	58 (31)
Significance of difference	n.s.	P < 0.05	P < 0.001

adjusted for number weaned ## adjusted for number born alive

The mean litter size was 10.8 piglets per sow but the overall mortality rate was higher than usual due to an unexpectedly severe winter. The higher mortality rate with the mats was largely attributable to the failure of piglets to reach the creep area. This occurred during cold periods when the temperature was below 15°C. The method of heating to weaning made no difference to the growth rate. However, even though the *bar* heaters were turned off for 9 hours a day after the first three days, they used almost ten times as much electricity as the mats which were run continuously.

The saving in running cost must be balanced against the increased risk of mortality during the first three days of life. Providing this risk can be reduced by supplementary heating or other means, the mats offer an economical form of heating for piglets prior to weaning.

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