

I. - HOUSING AND ENVIRONMENT

Colostrum consumption, thermoregulation and heat production in newborn piglets in relation with the climatic environment

J. LE DIVIDICH et J. NOBLET

*I.N.R.A., Station de Recherches sur l'Élevage des Porcs,
Centre de Rennes-Saint-Gilles, F 35590 L'Hermitage*

Colostrum consumption, rectal temperature, heat production and respiratory quotient were measured in piglets kept either at 18-20 °C (cold) or at 30-32 °C (warm) during the first 24 hours of life.

At 30-32 °C piglets consumed 36.8 p. 100 more colostrum than at 18-20 °C (290 and 212 g/day, respectively). Similarly, rectal temperature was significantly higher at 30-32 °C (39.3 vs 38.5).

A 58 p. 100 increase in heat production (209 vs 132 Kcal/kg body-weight/day) was observed when the ambient temperature decreased from 30-32 °C to 18-20 °C. Moreover, the fact that the respiratory quotient was higher in piglets kept at 18-20 °C (0.87 vs 0.83) suggests that the newborn pig kept in cold conditions enhances its utilization of carbohydrates (glycogen) in order to increase its heat production.

Our results emphasize the nutritional importance of colostrum for piglets during the first day of life, especially when they are kept in adverse climatic conditions. The negative effects of cold are more marked in piglets with a low birthweight.

Comparison of four air conditioning systems in fattening pig-houses

C. TEXIER, R. GRANIER et B. DE LA FARGE

*Institut Technique du Porc
Service Bâtiment et Environnement
M.N.E., 149, rue de Bercy, F 75595 Paris Cedex 12*

Between August 1978 and October 1980, five trials were made at the « Station Expérimentale de l'Institut Technique du Porc » to compare in summer (3 trials) and in winter (2 trials) the four following air conditioning systems : statical system by ventilating shaft, overpressure by ventilating shaft and dynamic removal by ascending or descending flow.

During each trial 40 castrated male pigs and 40 females were tested with each air conditioning system.

The animals were housed by groups of ten on a surface of 0.8 m² each and a useful volume of 3.2 m³.

The ventilation rates ranged between 18 and 75 m³/h/pig of 25 to 100 kg live weight.