Composantes génétiques de la taille de portée et de la croissance des porcelets en race Tai Zumu

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Genetic components for litter size and piglet growth in the Tai Zumu breed

The genetic components for litter size, piglet growth and heterogeneity of piglet weights within the litter were estimated at birth and 3 weeks of lactation in a Tai Zumu population. Weights from 19718 Tai Zumu piglets born from 1341 litters in three nucleus herds were available for genetic analyses. Heritability values and genetic correlations were estimated using the restricted maximum likelihood methodology applied to an animal model. Litter traits included the number of piglets born alive (NBA), the number of piglets nursed by the sow, the mean piglet weight (MW), the standard deviation of weight (SD) and the weight of the lightest piglet in the litter (MIN). Individual and maternal genetic effects for piglet weight were also estimated at birth (0) and at 3 weeks of age (3). Heritability for litter size at birth and heterogeneity of weights at birth and 3 weeks of age were moderate (h^2=0.18 and 0.16 for the two trait categories). Heritability for mean weights MW was high (h^2=0.43 to 0.50). Piglet genes explained a low proportion of the genetic variance of birth weight (21%) and 42% of that of weight at 3 weeks. A genetic antagonism between maternal and direct effects on piglet weight was observed at birth but not at 3 weeks of age. NBA was unfavourably correlated with MW and MIN, both at birth and at 3 weeks of age. The genetic correlations between SD3 and NBA or MW3 were low and positive (rg=0.18 and 0.12, respectively). The genetic correlations between MIN3 and MW, MW3 and SD3 were all favourable (r=0.79, 0.86 and -0.42 respectively).