

La teneur en cortisol du sang mixte ombilical n'est pas un bon indicateur de la vitalité des porcelets à la naissance

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Mixed blood cord cortisol is not a good indicator of piglet vitality

For hyperprolific sows, piglet vitality at birth is influenced by the quality of the farrowing process: the longer the process, the greater the risk piglets will be deprived of oxygen (hypoxia). Cortisol is usually associated with stress and used as an indicator of vitality. In a typical French herd (400 sows) with hyperprolific sows (LWxL)x(PxL), 195 piglets from 70 sows were sampled for umbilical cord mixed blood within the first minute after birth. Serum cortisol was analyzed using two classical techniques: radioimmunoassay (RIA) and luminoimmunoassay (LIA). The relationships with piglet status at birth (live weight, presence or absence of meconium, cord status, position at birth, birth rank) were established using analysis of variance and Pearson's correlation. The most notable finding concerned the wide range of cortisol values detected, regardless of technique (RIA or LIA) used; RIA and LIA techniques proved well correlated ($r=0.747$). Some weak correlations ($r<0.3$, $P<0.05$) were found with a higher cortisol level for the lightest piglets and for those born in the largest litters. Live piglets displayed higher ($P<0.05$) cortisol levels, determined by both RIA and LIA methods, than the stillborn piglets. The presence of blood together with the meconium on the piglets at birth was associated with higher ($P<0.05$) cortisol LIA but no effect of birth rank or position at birth (head vs. tail) on cortisol level was found. The absence of a link between cortisol level and piglet status at birth does not support the hypothesis that cortisol cord level is an indicator of piglet vitality.