

Association of sow fear, parity and season with piglet mortality in loose farrowing systems

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A study was conducted to investigate the association of sow fear, parity, and season with piglet mortality in a group-farrowing system. Multiparous sows (n=63) from 4 breeding groups, 2 groups farrowing in summer (June and August, 2009) and 2 groups in winter (November, 2009 and January, 2010) were used. Number of sows for each parity (P) were: P2=7, P3=14, P4=13, and P5 to P9=19. Sows were subjected to the human approach and the novel object fear tests during wk 12 after breeding. A fear score for each sow was calculated from the fear tests using a Principal Component Analysis, which showed a single-dimension composed of the measurements of the fear tests (latency to approach within 0.5 m, latency to first physical contact, duration spent within 0.5m, and number and duration of physical interactions). Fear scores ranged from 0 to 7.88, with lower scores indicating less fearful. Sows were classified as less fearful (n=32, scores=4.36±1.83) or fearful (n=31, scores=7.32±0.42). The farrowing facility housed 8 sows (4 classified as fearful and 4 less fearful) in each room (2 rooms/group), where sows shared a communal area and farrowed in individual pens. Total born, born alive, and still born piglets in each litter, and litter weight were recorded for each sow within 24 h after farrowing. Piglet deaths were recorded daily. Stillborn piglets were determined using the lung float test. Piglets were weaned at 27 to 38 d of age. Data were analyzed by the Poisson, Gaussian, and Logistic regression models using the Glimmix Procedure of SAS. There was no significant association of sow fear with piglet mortality. The risk of piglet mortality in P2 sows was less than half the risk of P5 to P9 sows (14.93% vs. 30.30%, SE=3.58, Odds Ratio (OR)=0.41, 95% Confidence Interval (CI)=0.25 to 0.66). Piglet mortality was higher in summer compared to winter (31.88% vs. 18.71%, SE=3.58). It appears that both sow parity and season are important factors that contribute to piglet mortality in the loose farrowing system studied. However, fearfulness of sows as measured in this study did not influence preweaning piglet mortality.

Key Words: Sow, fear, piglet mortality