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Association of parity, body condition and lactation feed intake with claw integrity in sows
Sukumarrannair S Anil, Leena Anil, and John Deen

Department of Veterinary Population Medicine, University of Minnesota, St Paul, MN

Lameness is both an economic and welfare problem in swine breeding herds. Severe claw lesions can be painful and can cause lameness in sows (Penny *et al.*, 1963; Dewey *et al.*, 1993). Not all types of lesions may be associated with claw lesions in sows. A previous study (Anil *et al.*, 2007) indicated an association between white line lesions and lameness in breeding sows. It is important to identify and analyze the association between claw lesions and various risk factors in order to minimize the incidence of such lesions to reduce removal of sows for lameness. The objective of the present study was to analyze the association of factors such as parity, body condition score (BC) and average lactation feed intake (LFI) with claw lesion scores (< median vs. \geq median) in breeding sows.

The study involved 771 sows in a breeding herd in Minnesota. The claws of the sows were examined for lesions on day 110 of gestation. Lesions included erosions, cracks, and overgrowths. Areas on the claw were classified as side wall (SW), heel (H), sole (S), heel-sole junction (HSJ), white line (WL) and toe (T). Lesions were scored on a scale of 0 (no lesions) to 4 (severe). The final score on each area was obtained by multiplying the number of lesions by the severity of these lesions. Data on the parity of the sow and LFI were collected from the sow cards and BC was scored visually on a 5 point scale. The associations of risk factors with lesions on different claw areas were analyzed using separate logistic regression models (Proc Logistic, SAS V 9.1). For analysis, parity was categorized as parities 1 and 2, 3-5 and \geq 6. The BC scores were categorized as \leq 2 and \geq 3.

Average LFI was included in the model as a continuous variable.

Sows of parity 1 and 2 had a higher likelihood of \geq median scores for WL and HSJ lesions than sows of parity \geq 6 (Odds ratio, OR 4.34 and 1.94 respectively) and lower likelihood of \geq median scores for overgrown heel (OGH) and H lesions (OR 0.58 and 0.56 respectively, $P \leq 0.05$ for all). Sows of parity 3-5 had lower ($P \leq 0.05$) likelihood of \geq median scores for OGH (OR 0.60) and higher ($P \leq 0.05$) likelihood of \geq median scores for WL lesions (OR 2.23) and HSJ lesions (OR 1.57). The odds of having \geq median lesion scores were 58% and 43% higher ($P \leq 0.05$) for sows with BC score of \leq 2 compared to sows with a condition score of \geq 3 on SW and WL respectively. The likelihood of \geq median H lesion scores increased ($P \leq 0.05$) by approximately 50% with every kg increase in average LFI. Results indicated that claw lesions were associated with parity, body condition and lactation feed intake.

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