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Survivals and risk factors associated with claw lesions in female pigs

M. Enokida and Y. Koketsu

Meiji University, Kawasaki, Japan

Introduction and Objectives

Lameness in swine raised concerns about animal well-being and increased economic loss (Anil et al., 2007). Claw lesions have been suggested to be a critical underlying cause of lameness in female pigs (females; Dewey et al., 1993). In the recent study, 96.2% of prefarrowing sows had at least one claw lesions (Anil et al., 2007). The objective of the present study was to investigate the relationships of the occurrence of claw lesions in females with parity (PY), backfat thickness, and survival probability on a commercial farm. We also compared the occurrence of claw lesions between prefarrowing females and lactating sows.

Materials and Methods

The present study was conducted on a commercial farm in Eastern Japan that used a recording system (PigCHAMP[®], Inc., Ames, IA, U.S.A.). The farrow-to-finish farm was visited six times from 2007 to 2008 to observe the claw lesions of prefarrowing females (N = 144) and lactating sows (N = 486) fed in farrowing crates with a totally slatted floor in lactation barns. The seven areas within each of the eight claws were classified as wall, heel (including overgrown heel), white line, junction between heel and sole, sole, and toe (Anil et al., 2007). Our study used a simplified 0 to 3 scale-scoring method for each claw area. The total pig-lesion score (TPLS) for each female was obtained by summing the scores for the seven areas of the eight claws within the pig, which was adapted from a dairy study (Vokey et al., 2001). Two TPLS groups were formed on the upper 10th percentiles of the TPLS: low (score 0 to 5) and high (score ≥ 6). All statistical analyses were done with SAS (SAS Inst. Inc., Cary, NC, U.S.A.).

Results and Discussion

Of 630 females, the mean TPLS was 2.6 ± 0.15 .

Prefarrowing females had 2.0 higher TPLS than lactating sows (4.1 ± 0.42 vs. 2.1 ± 0.14 ; $P < 0.05$).

Prefarrowing females in PY 2 and ≥ 3 had higher TPLS than PY 0 and 1 ($P < 0.05$; Table). Lactating sows in PY ≥ 4 had higher TPLS than PY 1 ($P < 0.05$). There was no association between TPLS and backfat measurements in prefarrowing females and lactating sows ($P > 0.05$). In survival analysis, the hazard of culling was not related with TPLS ($P > 0.05$; Figure).

In conclusion, females in high- or mid-PY were at higher risk of the occurrence of claw lesions than those in low PY. However, the claw lesions were not associated with survival probability.

Table. A comparison between the PY groups for the TPLS (Mean \pm SEM)

| Prefarrowing females | | | Lactating sows | | |
|----------------------|----|------------------|----------------|-----|---------------------|
| PY | n | TPLS | PY | n | TPLS |
| 0 | 37 | 2.1 ± 0.46^b | 1 | 154 | 1.4 ± 0.13^b |
| 1 | 29 | 3.3 ± 0.79^b | 2 | 97 | 2.0 ± 0.38^{ab} |
| 2 | 22 | 4.2 ± 0.93^a | 3 | 81 | 2.0 ± 0.33^{ab} |
| ≥ 3 | 56 | 5.8 ± 0.82^a | ≥ 4 | 154 | 3.0 ± 0.29^a |

^{a-b}Values (within a column) followed by different superscript letters differ ($P < 0.05$).

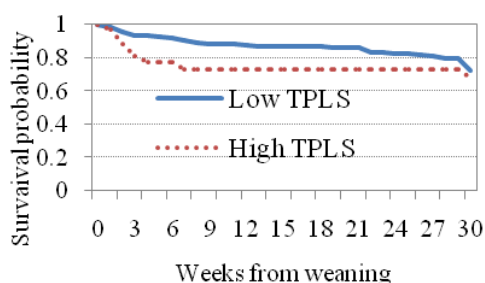


Figure. Survival curves for 377 lactating sows

References

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