

## Swine Species: Sow Productivity

**W447 Effect of proportion of nonproductive sow days on lifetime production traits in swine under Thai tropical conditions.** U. Noppibool<sup>1</sup>, S. Koonawootrittriron<sup>1</sup>, M. A. Elzo\*<sup>2</sup>, and T. Suwanasopee<sup>1</sup>, <sup>1</sup>Kasetsart University, Bangkok, Thailand, <sup>2</sup>University of Florida, Gainesville.

The proportion of nonproductive days (PNPD, %) over the lifetime of a sow is an indicator for her production efficiency. Sows with lower PNPD would have higher production efficiency. The objective of this study was to investigate the effect of PNPD on lifetime number of piglets born alive (LBA), lifetime number of piglets weaned (LPW), lifetime piglets' birth weight (LBW), lifetime piglets' weaning weight (LWW), lifetime nonproductive sow days (LNPD), and length of productive life (LPL). The data set included 1,222 lifetime production records from 882 Landrace (L) and 340 Yorkshire (Y) sows that had their first farrowing from 2001 to 2008. Sows received similar management and health care under an open-house system in Thailand. The fixed linear model considered the fixed effects of first-farrowing year-season, breed of sow (L and Y), age at first farrowing and PNPD, and the random effect of residual. First-farrowing year-season had a significant effect ( $P < 0.0001$ ) on LBW and LWW. Age at first farrowing had no effect on any trait. Breed of sow only affected LPW ( $P = 0.0109$ ) and LPL ( $P = 0.0358$ ). Yorkshire sows had larger LPW ( $52.50 \pm 1.31$  piglets vs.  $48.67 \pm 0.86$  piglets) and longer LPL ( $772.55 \pm 19.82$  d vs.  $727.68 \pm 12.44$  d) than L sows. Sows with higher PNPD had significantly ( $P < 0.0001$ ) smaller LBA ( $-3.79 \pm 0.42$  piglets/%), LPW ( $-3.27 \pm 0.37$  piglets/%), LBW ( $-6.05 \pm 0.70$  kg/%), LWW ( $-25.63 \pm 3.06$  kg/%) and LPL ( $-48.99 \pm 5.39$  d/%), but larger LNPD ( $3.77 \pm 0.26$  d/%). These results indicated that reducing PNPD would increase the lifetime production efficiency of sows in this population.

**Key Words:** lifetime performance, nonproductive sow day, tropics

**W448 Characteristics of lifetime preweaning production traits in Landrace and Yorkshire sows under tropical conditions.** T.

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Sow lifetime preweaning production is economically important for commercial swine operations. Knowledge of the characteristics of preweaning production (PWP) traits from the first to the last parity of sows would help improve production efficiency. Thus, the aim of this study was to investigate the characteristics of lifetime PWP traits in Landrace (L) and Yorkshire (Y) sows raised in an open-house system in Thailand. The PWP traits were number piglets born alive (NBA), number of piglets weaned (NPW), average weight of piglets at birth (ABW), and average weight of piglets at weaning (AWW). The data set contained 11,081 records of NBA, NPW, ABW, and AWW from 1,377 sows (1,059 L and 318 Y) farrowed from 2001 to 2012 in a commercial swine population. The characteristics of each PWP trait were first-parity production (FPP), peak-parity production (PPP), number of parities from first to peak production (NFP), and persistency of production (regression coefficient) from third to last parity (P3L). The FPP, PPP, NFP, and P3L for NBA, NPW, ABW, and AWW were analyzed using a linear model that had year-season at first farrowing, genetic group (L and Y), and age at first farrowing as fixed effects and residual as a random effect. Year-season at first farrowing affected ( $P < 0.05$ ) the 4 PWP characteristics for all traits, except for FPP for AWW, PPP for NPW, and P3L for NBA and AWW. Sows that farrowed at older ages in the first parity had higher PWP values for all traits ( $P < 0.05$ ), but had lower peak-parity production values for AWW ( $P = 0.047$ ) and lower number of parities from first to peak production for NBA ( $P = 0.009$ ) and NPW ( $P = 0.01$ ) than sows that farrowed at younger ages in their first parity. Genetic group only influenced ( $P < 0.01$ ) FPP and PPP for NBA and P3L for AWW. Landrace sows had higher numbers of piglets at birth in their first and peak parities, and higher persistency of production from third to last parity than Y sows.

**Key Words:** pig, preweaning trait, tropics