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# ORIGIN OF GILT SUPPLY HAS LITTLE EFFECT ON NUMBER OF PIGS WEANED ON JAPANESE SWINE FARMS

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### Introduction

Numbers of pigs born alive and pigs weaned are two important measures of sow performance, and have increased in the last decade on swine breeding farms. Japanese producers purchase replacement gilts from either international or domestic gilt suppliers, but there is no information on possible differences in performance of sows from these gilt supplier groups (GSG). The objective of the present study was to compare sow performance on Japanese farms purchasing gilts from different GSGs.

### Materials and Methods

A questionnaire form was sent to each of 115 commercial swine farms in 2009, which participated in the PigCHAMP data-share program (Ishikawa et al., 2011). Returned questionnaires from 96 farms (83.5%) were co-ordinated with the relevant PigCHAMP reproductive data. Two-level mixed-effects models were applied to 167,149 parity records from 2007 to 2008 by using a farm at the two-level and an individual record at the one-level. Farms were classified into three groups, namely GSG 1, 2 or 3, based on the origin of the supplied gilts. GSG 1 (JPN origin) comprised farms purchasing gilts from Japanese suppliers producing traditional crossbred females between Landrace and Large White pigs. GSG 2 (U.S. origin) and GSG 3 (EC origin) comprised farms purchasing gilts from international breeding companies that imported their breeding stocks from the U.S.A and the EC, respectively. Least square means were used for data presentation in all comparisons.

### Results and Discussion

Proportions of the GSG 1, 2 and 3 sows in all the parity records were 69.1, 18.5 and 12.4 %, respectively. There was no difference between the GSGs for parity at culling (Table 1). Sows in GSG 1 had 4.2 days longer lactation length than those on GSG 2 ( $P < 0.05$ ). Sows in GSG 1 had 0.6 to 1.1 more pigs born alive than those in GSG 3 in parity 3 or higher ( $P < 0.05$ ), but there

were no such differences between the GSGs for pigs born alive in parities 1 and 2. In addition, there was no difference between the GSGs for pigs weaned in any parity group except for parity 1. Also, no differences were found between the GSGs for weaning-to-first-mating interval or farrowing percentage in any parity group. In conclusion, there were no differences between the GSGs for longevity and post-weaning performance. The differences between the GSGs for pigs born alive disappeared after the sows were weaned.

Table 1. Comparisons between gilt supplier groups for reproductive performance and longevity (Least square means)

Parity groups	Gilt supplier groups			Pooled SE
	1: JPN	2: U.S.	3: EC	
Parity at culling				
	5.5	6.0	5.8	0.13
Lactation length				
	22.7 <sup>a</sup>	18.5 <sup>b</sup>	21.7 <sup>ab</sup>	0.14
Number of pigs born alive, pigs				
1	10.1	10.8	9.9	0.20
2	10.7 <sup>ab</sup>	11.2 <sup>a</sup>	10.3 <sup>b</sup>	0.23
3	11.4 <sup>a</sup>	11.4 <sup>ab</sup>	10.8 <sup>b</sup>	0.23
4	11.4 <sup>a</sup>	11.2 <sup>ab</sup>	10.7 <sup>b</sup>	0.25
5	11.3 <sup>a</sup>	10.7 <sup>ab</sup>	10.4 <sup>b</sup>	0.26
≥ 6	10.9 <sup>a</sup>	10.1 <sup>ab</sup>	9.7 <sup>b</sup>	0.17
Number of pigs weaned, pigs				
1	8.9 <sup>b</sup>	11.5 <sup>a</sup>	8.5 <sup>b</sup>	0.20
2	9.6	10.3	9.1	0.16
3	9.4	10.2	9.0	0.16
4	9.2	10.1	8.7	0.16
5	8.8	9.7	8.5	0.15
≥ 6	8.2	9.3	8.0	0.10

<sup>a-b</sup>Values (within a row) followed by different superscript letters differ ( $P < 0.05$ ).

### Reference

Ishikawa et al. 2011. Proc AD Lemman Conf. 291.