

Gilts with small litters tend to always have small litters

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Recent data from a large Chilean database indicated that gilts with small litters (9 or fewer born alive) tend to have a small subsequent litter size. We explored this finding further in a retrospective analysis of 33,000 sow lifetime histories, from PigChamp data of three large production systems, two in Canada and one in the US. Sows were divided into five groups according to their gilt litter size: 1-6, 7-8, 9-10, 11-12, 13-14, and > 14 pigs born. These sows represented 9%, 10%, 21%, 29%, 21%, and 9% of the sows in the herd, respectively.

Lifetime pigs born and born alive increased ($P < 0.001$) progressively as gilt litter size increased from 1-6 pigs to > 14 pigs by 17.4 pigs born and 14.4 pigs born alive. Lifetime pigs weaned only increased by 1.0 pig, but the number of pigs fostered in a sow's lifetime progressively increased as gilt litter size increased from 4.5 pigs fostered off to 5.3 pigs fostered on as gilt litter size increased from 1-6 pigs born to > 14 pigs born, a difference of 9.8 pigs.

Sows with a gilt litter size of 9-12 pigs were retained in the herd longer (4.1 parities; $P < 0.001$) than sows with smaller (3.7 parities) or larger (3.7 to 4.0 parities) gilt litters. The number of sow herd days associated with each pig born, born alive, and weaned decreased ($P < 0.001$) as gilt litter size increased, such that pigs produced from sows with gilt litters of > 14 pigs were associated with 9 to 10 fewer sow herd days than pigs from sows with the smallest gilt litters. However, there was only a 1.4 sow herd day per weaned pig difference between pigs weaned from sows with gilt litters of 1-6 and 11+ pigs. Assuming a cost of \$2 to \$3 per day to feed, care for, and house a dry sow, then the costs associated with a pig weaned from a sow with a 1-6 pig gilt litter would be **\$2.80 to \$4.20 more** than a pig weaned from a sow with an 11+ pig gilt litter.

Implications: There is a cost to retaining sows with very small gilt litter sizes. However, because such sows are used to foster pigs from larger litters caution should be used when culling these sows solely based a small litter size.