Introduction

✓ There is a large difference across parities between sows for prolific performance capabilities on commercial farms.

Objectives

✓ To compare high and low prolific sow performance on high- and low-performing farms, specifically

1) reproductive performance in consecutive parities
2) lifetime performance

Materials and methods

Farms

☐ Data collected from 98 Spanish farms cooperating with the consultancy firm PigCHAMP pro Europa S. L. (Segovia, Spain).

Performance data

☐ We analyzed 437,554 service records in first-service of gilts to removal of 85,096 sows in 98 Spanish farms, served between 2008 and 2013.

☐ Three sow groups based on upper and lower 10th percentiles of pigs born alive (PBA) at parity 1, as follows: 15 pigs or more (high prolific: H-PLF), 8-14 pigs, and 7 pigs or fewer (low prolific: L-PLF).

☐ Three farm groups based on the upper and lower 25th percentiles of the farm means of annualized lifetime pigs weaned per sow: high- (HP), intermediate- (IP) and low-performing (LP) farms.

Statistical analysis (SAS)

➤ Applied linear regression models to examine two types of factorial arrangement data:

1st type: 3 farm groups x 3 sow groups x 6 parity groups with repeated measures for by-parity reproductive performance of sows.

2nd type: 3 farm groups x 3 sow groups for lifetime performance.

Results

➤ In parity 1, HP farms had 18.9% H-PLF sows and 8.9% L-PLF sows, whereas LP farms had 6.4% H-PLF sows and 16.5% L-PLF sows. Also, in parity 6, there were 20.9% H-PLF sows and 6.5% L-PLF sows on HP farms, compared with 5.9% and 15.4% in respective counterpart groups on LP farms.

➤ From parities 2 to 6, HP farms had 0.8-1.1 more PBA in H-PLF sows and 1.4-1.7 more PBA in L-PLF sows than LP farms (P < 0.05).

➤ HP farms had 7.7% higher farrowing rates than LP farms, whereas H-PLF sows had only 0.7% higher than L-PLF sows (P < 0.05).

➤ With regard to lifetime performance, there was no difference in the number of parities at removal between the 3 farm groups (P = 0.43).

➤ HP farms had 9.2 and 6.6 more lifetime pigs weaned in H-PLF and L-PLF sows, respectively, than LP farms (P < 0.05).

➤ HP farms had 29.7 and 30.7 fewer lifetime non-productive days in H-PLF and L-PLF sows, respectively, than LP farms (P < 0.05).

Conclusions

HP farms achieved more lifetime pigs weaned for both H-PLF and L-PLF sows, by having higher PBA and higher farrowing rate, fewer non-productive days, and culling more L-PLF sows than LP farms.

Table 1. By parity relative frequencies (%) of farm groups in three sow groups categorized by pigs born alive in parity 1.

<table>
<thead>
<tr>
<th>Farm groups</th>
<th>15 pigs or more</th>
<th>8 to 14 pigs</th>
<th>7 pigs or fewer</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP farms</td>
<td>18.9</td>
<td>72.2</td>
<td>8.9</td>
</tr>
<tr>
<td>IP farms</td>
<td>10.2</td>
<td>78.1</td>
<td>11.7</td>
</tr>
<tr>
<td>LP farms</td>
<td>6.4</td>
<td>77.1</td>
<td>16.5</td>
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<tr>
<td>Parity 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HP farms</td>
<td>20.9</td>
<td>72.6</td>
<td>6.5</td>
</tr>
<tr>
<td>IP farms</td>
<td>10.2</td>
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<td>9.9</td>
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<tr>
<td>LP farms</td>
<td>5.9</td>
<td>78.7</td>
<td>15.4</td>
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</tbody>
</table>

References