Application of post-cervical artificial insemination in gilts

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Post-cervical artificial insemination (post-CAI) has been successfully developed for application in multiparous sows. However, the same technique has proved problematic in young females such as gilts. The purpose of this study, therefore, was to analyze the implementation of post-CAI in gilts by developing the following experiment. A total of 99 gilts were used in this experiment with an average weight of 173.12±17.27 kg. A first attempt to inseminate the females was performed using multiparous post-CAI catheter (MPCAI) [multi-ring tip (Ø 22 mm in diameter) and inner cannula (Ø 3.5 mm in diameter)] (Figure 1). Gilts were classified as either “inseminated” (the inner cannula was introduced easily or with little difficulty and no backflow observed inside cervical catheter at the moment of dose application) or “non-inseminated” (the inner cannula was impossible to introduce or could be inserted but some backflow was observed inside the cervical catheter just at the moment of dose application). When the classification was as “non-inseminated”, cervical deposition of warm commercial extender (44.94±2.15 ºC and 20.15±3.32 ml) was applied before the second attempt in order to provoke the cervix relaxation. Data concerning reproductive parameters [farrowing rate (%), total and live piglets born] were collected when the insemination had been properly applied (complete penetration of inner cannula) in the experimental groups (MPCAI and warm extender groups) and compared with those for conventionally inseminated in gilts (CAI) as a control. Only gilts with two successful inseminations during oestrus were included in the reproductive performance data.

The results show that only 23.23% of the gilts were inseminated at the first attempt using the MPCAI catheter. When warm extender was used in non-inseminated (after the first attempt), the application of post-CAI increased to 23.81%. No differences were found in any reproductive parameters studied among groups. The farrowing rate ranged from 84.62 to 94.74%, total number of piglets born from 12.66 to 13.30 and piglets born alive from 11.44 to 12.11. Despite the advances made, the success of post-CAI applications in gilts is still far from that possible in multiparous sows. However, developing new insemination methods to reduce the number of sperm used is of great interest in porcine industry. Supported by AGL2015-66341-R.