

## INACCURATE ASSESSMENT OF REPRODUCTIVE STATUS LEADS TO UNNECESSARY REMOVAL OF CYCLING SOWS

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**Introduction** It is estimated that as many as 40 to 50% of reproducing females are culled each year in modern pig production; astonishingly, almost half of these culls are associated with sows before their third and fourth parity (ENGLEBON et al., 2016). Decreased sow longevity is not only an economic problem for the pig industry but also results in poor animal welfare. To maximize profitability, sows should be retained in the breeding herd up to parity six, since higher parity dams wean numerically more and heavier piglets per year when compared to first and second parity sows (GRUHOT et al., 2017); nevertheless, in commercial pig operations 30% of sows are culled by parity three, being reproductive failure one of the major reasons for involuntary culling of low parity sows (TANI et al., 2018). On this path, disappointing litter size, anestrus and return to estrus following insemination are regarded as major causes for removal of reproducing females (KOKETSU et al., 2017). However, aside of been caused by intrinsic unbalances, these failures can also suffer the influence of external factors, e.g. deficient estrous detection, incorrect moment of insemination, poor semen quality and reproductive diseases, therefore some sows might be culled for wrong reasons. The present study aimed to evaluate the culling decision accuracy of sows with reproductive failure from commercial breeding herds through examination of reproductive and urinary tracts *post mortem*.

**Materials and methods** The records of 312 sows culled for several reasons, parity ranging from 1 to 12 and originated from different commercial farms located in Santa Catarina State, Brazil, were evaluated. Data were collected from April to November 2016 and was part of a larger study. Following slaughter, in addition to overall *ante mortem* inspection, all 312 sows had their reproductive tract examined for the number of ovarian follicles, number of corpus luteum and corpora albicantia as well as for the presence of ovarian cysts. Uteri and bladder were examined to determine the occurrence of endometritis and cystitis, respectively. Based on the data obtained from the evaluation of all reproductive and urinary tracts, females were considered to be cyclic or presenting endometritis and/or cystitis. After thorough record scrutiny of 312 sows, only the data concerning to removal for reproductive reasons were extracted and evaluated. The data collected *post mortem* were compared with the on-farm culling record and descriptive statistics were used to evaluate the decision accuracy of culling sows for reproductive problems.

**Results and discussion** Of 312 sows culled, 115 (36.8%) were removed from the production herd due to reproductive problems, i.e., low productivity (37%); return to service following insemination (25.2%); abortion (16.5%); anestrus (13.9%); negative pregnancy check (4.3%) and vulvar discharge (2.6%). Sows were culled on average on parity 3.5, which agrees with the observations of Tani et al. 2018. Out of 43 sows removed for low productivity only four (9.3%) had real reproductive problems, namely, ovaries devoid of follicles and corpora lutea or cystic ovaries and endometritis. From 29 females removed for return to service, only 17% of them presented reproductive disorders; presence of cysts being the main ovarian pathology and four of these females had endometritis. Abortion was considered the culling reason of 19 females, of these, 21% presented follicular ovarian cysts as the main reproductive disorder together with endometritis. Anestrus was the culling reason of 16 sows, surprisingly, only three sows (18.7%) was truly in anestrus; two of these females had numerous luteal

cysts and another one ovary hypoplasia. It should be mentioned that ovarian cysts are important risk factors for reproductive disorders, namely, regular and irregular returning to estrous, abortion, anestrus, pseudopregnancy and decreased litter size (CASTANGNA et al., 2004). Five sows were culled for been negative at pregnancy check, of these only one sow presented ovaries devoid of follicles and corpora lutea. Three females were culled for having vulvar discharge, all of them had cystitis. Inaccuracy on culling reason was also reported by Knauer et al. (2007); in their study, out of 923 dams culled for numerous problems, 209 (23%) were removed for wrong reasons.

**Conclusion** Based on the results of the present study, we can infer that there is a lack of proper assessment of the actual reproductive status of breeding sows which, in turn, is leading to unnecessary culling of young females. Farm management should reevaluate its removal policy and investigate other factors that may be affecting reproductive performance before make a decision for culling. Real-time B-mode sonography could be used, for instance, as a diagnostic tool at farms with fertility problems helping in the decision for removal. A general assessment of health condition should also been carried out before making a decision for culling.

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