REPRODUCTION

REP-003

DYNAMIC CHANGE OF FUNCTIONAL MAMMARY GLANDS IN DIFFERENT PARITIES IN A HERD OF HIGHLY PROLIFIC SOWS

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Introduction

The number of functioning mammary glands (FMGs) is vital in highly prolific sow herds.

Materials and methods

A total of 2468 farrowings of 588 sows with at least two farrowings in the test period were evaluated. The distribution of farrowings was as follows (parity/number of sows): 1/588; 2/588; 3/470; 4/347; 5/232; 6/140; 7/68; 8/23; 9/10. The functionality of mammary glands was evaluated by hand milking during or just after farrowing. Blind, inverted, short and pin teats as well as MGs with any mastitis or oedema were regarded as non-functioning. Regression analyses were performed by GraphPad Prism 7.03 (GraphPad Software Inc.) using a second-order polynomial (quadratic) equation (Y=B0 + B1*X + B2*X2).

Results and discussion

Regression analyses revealed that the number of FMGs slightly decreased up to the fifth parity (about 14 FMGs/sow) and after that it increased again (R^2=0.84). The number of live-born piglets increased from 13 to 14 up to the fourth parity and decreased to about 12 by the 8th–9th parity (R^2=0.80). Thus, in the early and late life of sows there is a surplus of FMGs. Despite the equalisation of litters to 14 the number of weaned piglets follows the curve of live-born piglets (R^2=0.71) but it is about two less. At each farrowing we counted the sows whose FMGs decreased (parity/% of sows: 2/12.6; 3/14.9; 4/11.5; 5/11.2; 6/14.3; 7/10.3; 8/13.0; 9/20) or increased (parity/% of sows: 2/9.9; 3/11.1; 4/10.9; 5/12.5; 6/11.4; 7/7.4; 8/8.7; 9/10.0). Our data show that altogether about 20 percent of the sows showed an increase or a decrease in the number of FMGs.

Conclusion

On herd level the increases and decreases in the number of FMGs were almost equalised. The underlying mechanisms and especially the pattern of weaned piglets' number need further investigations.