



REPRODUCTION

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VARIATION IN BOAR FERTILITY IN A MIXED SEMEN EXPERIMENT

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Introduction

Boars fertility can be a serious problem in pig production. Numerous studies compared the effects of individual boars on a herd or between herd levels. Unsystematic effects, however, like herd, sow, season etc. impede the accuracy of the boars' fertility estimation. Mixed insemination can increase the total number of piglets in litters, because temporary unfavourable conditions of single boars can be absorbed by a second or further boars in the field. It remains unclear, if besides this positive effect, the assertiveness of distinct boars might be reduced in some combinations. Aims of the present study were to estimate the variability of boar fertility and interactions between semen from different boars under the extensive exclusion of environmental effects in a mixed insemination model.

Material & Methods

Twentyseven sows were inseminated with mixed semen of two out of four boars from two distinct boar-lines. Semen was produced, diluted and mixed on a commercial German stud boar station. Mixing was done to guarantee equal numbers of motile spermatozoa from each boar. Sows were heat oriented inseminated with a SafeBlue® Foamtip insemination catheter. Paternity of any born piglets was detected by microsatellite analysis.

Results

The percentage of piglets in a litter originating from individual boars varied between 0 and 100%. Effects for a boar with low assertiveness were lowest in combination with semen of boars with high fertility. Fertility of boars correlated with spermatological parameters of their ejaculates. Differences in assertiveness between the two boar lines showed significant genetic effects.

Discussion & Conclusion

The mixed insemination model with consecutive paternity analysis of the piglets is a well suited method to directly compare effects of boars under exclusion of unsystematic environmental effects. Differences in fertility and assertiveness were outstanding between boars, although the mixing process guaranteed equal numbers of motile spermatozoa for each boar.