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Relationships between sow conformation and crushing events in commercial piglet production

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Pig selection maximises length of back and lean tissue growth rate for meat production. The resulting change of sow body shape may increase difficulty with control of posture change and consequently crushing of piglets. The aim of this study was to investigate the relationship between sow conformation, farrowing environment and piglet crushing by the sow.

Piglet births (n=11752) were recorded for 21 weeks in a population of Landrace sows crossed with either White Duroc or Large White sires. All sows (n=874) were scored for front and hind leg conformation and the parity and floor surface of their farrowing crate was recorded (FAR-FLOOR).

Piglet data gathered at first processing (18-24 hours after birth) were weight, gender, IUGR-status determined by head morphology and reason for death. All piglets remained in their birth litters until processing, but were fostered thereafter. Gilts were individually tagged but boars were unidentifiable after processing. In total, 495 piglets were crushed (LTOT) - 349 boars and gilts crushed before processing (LPROC), with a further 146 gilts crushed between processing and weaning.

Non-significant effects (Proc mixed model with sow-week as a random factor) on both LTOT and LPROC included sow parity, piglet sire breed, gender and sow leg conformation scores. Significant effects on LPROC were an interaction between piglet weight and IUGR-status (P=0.014), the interaction between FAR-FLOOR and IUGR-status (P=0.01). When looking at LTOT, the piglet weight/IUGR-status interaction loses significance, although the interaction between FAR-FLOOR and IUGR-status remains significant (P=0.005).

In conclusion, sow limb conformation does not directly influence the risk of piglet crushing, though the interactions of IUGR-status and farrowing floor require more investigation. This research was funded by the EU FP7 Prohealth project (no. 613574).