FACTORS INFLUENCING DYSTOCIA IN THE PHENOTYPICALLY DOUBLE MUSCLED BELGIAN BLUE BREED

Iris Kolkman¹, Geert Hoflack¹, Dirk Lips², Geert Opsomer³

¹Fac Veterinary Medicine, Merelbeke, ²Kaho Sint Lieven, Sint Niklaas, Belgium

The Belgian Blue (BB) breed is a double muscled (DM) beef breed in which dystocia occurs frequently resulting in the elective application of Caesarean Section (CS). In the present paper, an evaluation was made of the fetal-dam disparity within DM-BB cattle (on average and based on individual cow-calf combinations), and of the influence of parturition (both by CS and calving per vaginam) on the pelvic width (PW), pelvic height (PH) and pelvic area (PA) in DM-BB cows. Measurements in 507 DM-BB animals of which 56 animals calved per vaginam showed a mean PH of 18.8 ± 1.9 cm with a minimum and maximum of 11.0 and 23.0 cm respectively, compared to a mean shoulder width (SW) and hip width (HW) of 147 newborn DM-BB calves of 22.4 ± 2.2 cm and 22.9 ± 2.1 cm respectively. Thus purely mathematically spoken, the average DM-BB calf is too large to pass the birth canal of the average DM-BB dam. However, the largest cows (with a PH of 23.0 cm) are still able to deliver the average DM-BB calf. Comparison of individual cow-calf combinations originating from a herd with a high frequency of calving per vaginam, showed that more animals (multiparous animals as well as heifers) calved per vaginam than mathematically considered (to be) possible. The latter is both very intriguing and hopeful for selection against dystocia in the future, but also suggests other factors contributing to calving ability, including the influence of parturition itself on the pelvic dimensions. Results of measurements performed to test this hypothesis demonstrate that animals which calved by CS had a significantly larger PH within 24 hours after parturition compared to their PH one month before parturition (0.45 cm, \( P < 0.05 \)). No significant influence was however seen on PW and PA. All three pelvic measures of animals that delivered their calf per vaginam increased around calving in comparison with measurements one month before parturition (PH: 1.42 cm \( [P < 0.001] \), PW: 0.53 cm \( [P < 0.05] \) and PA: 35.64 cm\(^2\) \( [P < 0.001] \)). These findings indicate that besides the pelvic dimensions of the dam and the body sizes of THE CALF, parturition itself significantly influences the size of the pelvic canal and thus contributes to the calving ability in the DM-BB breed.