



The effect of housing on conformation in calves and young stock

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Lameness causes major financial losses and welfare problems in dairy herds. More than half of the lameness cases are caused by horn related diseases like sole hemorrhage, double sole, sole ulcer and white line lesions. Several studies have shown that abnormal hind leg conformation such as sickle hocks and cow hocks are a major risk factor for development of claw horn lesions (Boettcher et al., 1998, Capión et al., 2008 Perez-Cabal and Charfeddine, 2016). The weight distribution on claws is determined by the position of the hind legs (Toussaint-Raven, 1985). A normal parallel stance provides a more even weight distribution between the medial and lateral claws compared with a cow-hocked stance, where the sole of the lateral claws on the hind legs receives the majority of the load compared with the wall (van der Tol et al., 2002). Cow-hocked conformation may also lead to asymmetrical claws. Alterations in the weight-bearing area of the claw may predispose the affected cow to lesions and lameness. Toussaint-Raven (1985) described the cow-hocked stance as a consequence of overgrown sole, housing, and claw lesions. Several studies have later described cow-hocked posture as a heritable condition (Andersen et al., 1991; Brotherstone and Hill, 1991). However, there are not many studies on conformation in young calves and the association between housing and development of conformation.

The objectives of this longitudinal study were to describe the development and dynamics of hind leg conformation as well as associations between hind leg conformation and flooring in calves and young stock in commercial Danish dairy herds. Hind leg conformation was scored from rear view and from lateral view in two groups of approximately 400 calves with either early exposure to concrete flooring or late exposure to concrete. Calves in the late group were kept on deep-bedded areas until 8 months of age and calves in the early exposure group was moved from deep-bedded areas at 6 weeks of age.

Our results indicate that in the early exposure group there were more calves with straight hocks than in the late exposure group, where we recorded a higher frequency of sickle hocks.

In both groups there were a majority of cow-hocked calves. This was apparent from the first recording of calves 0-2 months of age and the frequency of cow hocked conformation in the young stock increased with age.

The preliminary results from this study shows that calves are born with abnormal hind leg conformation and there is an effect of flooring in the development of normal hock angles and cow-hocked conformation.

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