

SUMMARY

Vetsuisse Faculty, University of Bern 2018

Iwan Locher

Clinic for Ruminants, daniela.fasel@vetsuisse.unibe.ch

Potential transmission routes of *Dichelobacter nodosus*

Footrot caused by *Dichelobacter nodosus* is a highly contagious bacterial disease affecting the claw of sheep and the main cause of lameness in these animals. It is not only an economic burden but a serious animal welfare issue as well. More information about the transmission of *D. nodosus* is needed for effective control programs of footrot. We therefore determined the prevalence of *D. nodosus* in sheep presented on shows and markets where commingling of animals occurs. Furthermore, possible transmission vectors during foot trimming were investigated and trimming knife decontamination protocols evaluated. Sheep at six markets and four shows were sampled and tested for the presence of *D. nodosus* by real-time PCR. Different vectors such as trimming knives were tested by real-time PCR and for viable *D. nodosus* by culture. The prevalence of virulent *D. nodosus* in sheep presented on shows and markets ranged from 1.7% to 100%. Regions with an ongoing control program showed significantly lower prevalence. After trimming, positive real-time PCR and culture results were obtained for knives, the hands of the claw trimmer as well as removed claw horn material whereas boots were positive only by real-time PCR. In conclusion, markets and shows pose a risk for transmission of *D. nodosus* and risk is high during claw trimming. Measures like wiping the knife with a disinfection towel as well as wearing and changing gloves after every sheep should be taken, and proper disposal of trimmed and infectious horn is highly recommended to prevent transmission of *D. nodosus*.

Keywords: ovine footrot, lameness, claw trimming, real-time PCR, culture.