

BACTERIOLOGICAL STUDIES FOR CHARACTERIZING INFECTIOUS SITUATIONS AT THE CLAWS OF DAIRY CATTLE

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Polybacterial skin infections of the bovine foot are the most common causes of lameness on dairy farms worldwide. Primary and complicated secondary infections at the distal limb like *Dermatitis digitalis*, interdigital phlegmons, septic arthritis, and claw horn disruption lesions are the important lameness causing foot lesions. Their etiology is multifactorial, but infectious processes are implicated in disease pathogenesis. It may be that mostly they are opportunistic pathogens infecting pre-existing lesions and are not solely responsible for lesion initiation. The cultivation methods are imperfect and show often random results only, similar to an ice peak phenomenon.

But at least, a correct recognition is an important requirement for a treatment decision including antimicrobial resistance testing. In addition to the Spirochetes associated with Digital dermatitis, *Fusobacterium necrophorum* and several other bacteria such as *Bacteroides* spp., *Dichelobacter nodosus*, *Porphyromonas levii* and *Trueperella pyogenes* have been suggested to play a role in the pathogenesis. Nevertheless, most of that research was done long ago and, for example, the taxonomical changes since then make interpretation of the results challenging.

We have carried out microbiological studies on the pathogen involvement in sole ulcers as well as phlegmonous inflammations as a model case for other local infections. Especially the use of MALDI-TOF MS facilitates the differentiation considerably, but also shows the wide variety of the microbiome, especially in superficial infections. In comparison to earlier studies, species such as *Helcococcus kunzii*, which is thought to have pathogenic potential, could also be identified.

For the future, comparative investigations between bacteriological investigation and molecular biological diagnostics are to be considered.

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