

7 Summary

Study of the epidemiology of *Staphylococcus aureus* as cause for mastitis in dairy cows and heifers

The objective of this study was to evaluate whether the variability of strains of *S. aureus* that cause intramammary infections differs between dairy cows and heifers. Further it was to evaluate whether *S. aureus* strains with attributes of environmental pathogens exist. Finally the evaluation of possible risk factors for *S. aureus* infections was included in this study.

Sterile quarter milk samples were taken from 359 German Schwarzbunte dairy cows at time of dry off, at time of calving and in the first week post partum. Further quarter milk samples were taken from 332 heifers at time of calving and in the first and fourth week post partum.

140 of the 234 *S. aureus* isolates we found were genotyped via PFGE.

It turned out that three different clonal groups (A, B, C) were present in the herd. To each group clonal subgroups with closely related strains existed.

There was no obvious connection between the occurrence of a certain strain and the parity of the animal (dairy cow or heifer).

The spreading pattern of environmental pathogens could not be proved by the *S. aureus* strains found in this study. At most, it could be assumed.

In this study the shape of the udder, teat and teat end were not significantly associated with *S. aureus* infections. In contrast, the frequency of *S. aureus* infections was significantly higher in teats with moderate hyperkeratosis.

On both quarter and animal level the mean somatic cell count was significantly higher in cases with *S. aureus* infection.

An intramammary infection did not affect the mean milk yield and mean fraction of fat and protein content in this study.