



SESSION 8: EPIDEMIOLOGY AND BACTERIOLOGY

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Impact on udder health of dairy cows by intramammary infections with different coagulase-negative staphylococci species.

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Subclinical mastitis (SCM) in dairy cows causes an increase in milk somatic cell count (SCC), and can lead to reduced milk production and early culling. In many countries, coagulase-negative staphylococci (CoNS) are the most common bacterial finding at SCM. New methodology (MALDI-TOF) makes it possible to identify different CoNS species, but the knowledge on the epidemiology of these species is limited. The objective of this project was to improve advisory services on how to control mastitis caused by different CoNS species, by evaluating effects on SCC, milk production, number of cases of clinical mastitis (CM) and culling. Farmers that had sent milk samples to the National Veterinary Institute (SVA) with growth of CoNS were asked to participate. Participating farmers took new udder quarter milk samples from the cow of interest within one month after the initial sampling, and at dry-off or after calving. In total, 201 herds were included in the study resulting in enrollment of 665 cows (1-21 cows /herd). So a first follow-up-sample has been received from 537 cows and a second sample from 296 of these cows. In the initial udder quarter samples received 19 different CoNS species were identified. *Staphylococcus epidermidis* (*S epidermidis*), *S simulans*, *S chromogenes* and *S haemolyticus* were the most common findings and were isolated in 26%, 22%, 19% and 13% of the milk samples, respectively. Moreover, these CoNS species were found in about 40% of the participating herds. All isolates were investigated for  $\beta$ -lactamase production and the results varied between species e.g. 60% of the *S haemolyticus* isolates produced  $\beta$ -lactamase, while none of the *S simulans* isolated did. Differences in daily milk yield and cow composite SCC between the 4 most common CoNS species were evaluated using data from the test milking closest in time after the first follow-up-sampling. The preliminary results show that cows with reoccurring findings of *S epidermidis* or *S simulans* in the same udder quarter as at the initial sampling had a significantly higher SCC than cows with no growth. Cows with reoccurring findings of *S epidermidis* also had significantly higher SCC than cows with reoccurring findings of *S chromogenes*. Significant differences in milk yield were not found between cows with reoccurring findings and those with no growth. It was significantly more likely that cows with an initial finding of *S haemolyticus* had no growth at first follow-up-sampling compared to cows with an initial finding of *S epidermidis*, *S simulans* or *S chromogenes*. So far, significant species differences in culling have not been found, however, the follow up period will last until April 2016. The final results will hopefully give better insight into how the most common CoNS species affect the cow, and will improve the advisory services on how to control mastitis caused by different CoNS species.



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