

Report of "Automatic disinfecting foot spray in milking robot with environmental-friendly hypochlorous acid as alternative to traditional foot bath with polluting copper sulphate or antibiotics" in four dairy herds

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For the study Anolytech Klövspray™ was installed in six commercial dairy herds with at least two milking robots (AMS), each serving about 70 cows. So far, preliminary results from three herds with 2 AMS and one with 8 AMS can be presented. In herd 1 there were two equal groups of cows, each of them belonging to one AMS. Only cows in AMS A were sprayed and those in AMS B were used as control group. In herd 2 and 3 all cows were in one group and were able to choose themselves in which of the two AMS they would be milked in. Therefore only the right foot was sprayed and the left foot was used as a control foot. Herd 4 milked 550 cows divided in 4 groups, each with 2 AMS and both rear feet were sprayed in one of these groups while the other 3 groups acted as controls.

The preliminary results showed that in herd 1, mild dermatitis was the most common claw disorder and approximately 60% of the cows were affected. For the more severe injuries the prevalence was between 5-10%. Interdigital hyperplasia declined significantly ( $P < 0,05$ ) in the group treated with hypochlorous acid while the disease increased in the control group between the two investigations. Dermatitis and heel horn erosion decreased somewhat in both groups but no statistically significant differences were found. In herd 2 the prevalence of severe dermatitis, heel horn erosion and interdigital hyperplasia were lower for claws sprayed with hypochlorous acid compared to controls. It was a trend ( $P = 0.07$ ) to a statistical difference for dermatitis. In herd 3 there were numerically fewer cows with mild dermatitis, heel horn erosion and interdigital hyperplasia on the sprayed claws but the prevalence was too low to show significant differences. Also in herd 4 the prevalence of severe dermatitis and heel horn erosion were very low why these diagnoses were merged. However, no significant differences were found between the groups for any of these claw diseases. Further calculations will be made in order to compare the results between fall and spring, as well as with correction for the estimated treatment time.

### Summary

The results showed some positive effect against the studied claw diseases but not high enough to be statistically significant except for interdigital hyperplasia in herd 1. In herd 2 the prevalence was estimated to be 15-20% lower on the treated feet. In herd 3 the prevalence of claw disease was relatively low and even if there were differences of about 50%, these differences were not statistically reliable due to the variation. In herd 4 the prevalence of interdigital hyperplasia was 3 times lower in the sprayed group, and it was a tendency to statistical significance. The supervision and technical function of the spray apparatus was not satisfactory, why the spraying was probably not optimal.