

The association between subclinical acidosis and subclinical ketosis with biomarkers from an automatic milking system in fresh dairy cows

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Abstract

We hypothesised that some biomarkers from AMS as rumination time, milk yield, bodyweight, milk temperature, the milk fat-to-protein ratio, and the electrical conductivity of milk at the udder quarters-level all have associations with subclinical acidosis (SARA) and subclinical ketosis (SCK). The objective of this study was to determine the association between subclinical acidosis (SARA) and subclinical ketosis (SCK) with biomarkers from automatic milking system (AMS)(rumination time (RT), milk yield (MY), bodyweight (BW), milk temperature, the milk fat-to-protein ratio, and the electrical conductivity of milk at the udder quarters-level) which can be read in fresh dairy cows. During the course of the study, all of the fresh dairy cows (n=711) were examined according to the general clinical investigation plan. The cows were selected for 1-30 days of milk (DIM) and were milked with Lely Astronaut® A3 milking robots with free traffic. Rumination time shows a statistically significant positive correlation with milk yield (milk temperature) and is negatively correlated with the fat and protein ratio. Healthy cows demonstrated the highest level of rumination time and the lowest milk temperature. The average BW for these cows was 1.6% lower than for the SARA group and the kg was 2.1% higher than SCK cows. MY was 14.0% lower in comparison with SARA and 6.4% higher in comparison with SCK. According to these results, some biomarkers from the AMS level have an association with SARA and SCK. However, further research is needed to confirm this conclusion with a higher number of cows.