

Trends in the change of biomarkers of the automatic milking system to assess the stress of fresh dairy cows

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Stressful situations which cows may experience have been observed as one of the factors responsible for the reduction in rumination time. Farm animals are faced with many stressors around the feeding environment such as temperature, the feed itself, and the number of animals per unit area. During short-term stress, glucocorticoids improve fitness by means of energy mobilisation, and may influence behaviour such as rumination. However, severe chronic stress (prolonged periods of high cortisol concentrations) may decrease the fitness level of each animal by means of immunosuppression and atrophy in the tissues. In addition, the reproductive success of the animal is decreased. The objectives were to determine the possibility of using rumination time as a form of stress indicator in the first thirty days after calving, and to determine the relationship between rumination time, blood cortisol levels, and lactate concentrations in dairy cows during the first thirty days after calving. Ninety cows which produced milk (DIM) within 1-30 days were selected and categorised into the following groups: the first group (1) fell within 1-7 days after parturition (dpp) (n=30); the second group (2) fell within 8-14dpp (n=30), and the third group (3) fell within 15-30dpp (n=30) after calving. The cows were milked using Lely Astronaut® A3 milking robots with free traffic. The blood samples were tested using the fluorescence enzyme immunoassay method for cortisol analysis. Lactate concentrations were tested with a Lactate Pro2®. In conclusion, RT can be used as a kind of stress indicator for cows in the first thirty days after calving; however, further research is required to ascertain this conclusion.

Biography

Dovile Malasauskienė veterinarian and also, PhD student of LUHS Veterinary academy. Until now she has published 24 articles.