

Recording grazing time of dairy cows in AMS farms with the Lifecorder+® sensor

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Abstract

The Lifecorder+® is a uniaxial neck mounted activitymeter. It was first tested to assess grazing time in two French experimental AMS farms (20 cows equipped in Derval farm, 14 cows equipped in Trévarez farm) in 2014. The Lifecorder+ raw signal (from 0 to 9) was converted into a grazing yes/no information over a certain threshold. The results show a high correlation of grazing time between the visual observations of activity and the information from the sensor ($R^2 = 0.93$ in Derval and 0.82 in Trévarez) with a mean prediction error of 18 min (9%) in Derval and of 29 min (20%) in Trévarez. Lifecorder+® appears to be a possible cheap, easy and precise tool to record grazing time at pasture. Then, experiments were conducted during spring 2015 on those two experimental AMS farms to assess grazing behaviours in two different grazing systems. In a system with feed supplementation (Derval), daily intake time decreases together with the decline of grass quantity and quality and an increase in the amount of supplementation. Grazing time is about 43% of the access time to pasture (319/775 minutes respectively). In a 100% grazing system (Trévarez), where daily pasture allowance is constant, daily grazing time is about 9 hours. It is longer when grass quality improves. The cows' hierarchy of access to the AMS is a predominant feeding behaviour factor. "Dominant" animals have longer grazing time and higher animal performances (milk production, milking frequency) compared to "dominated" animals. The use of grazing time data could be of interest in addition to other decision support tools already used by farmers (pasture probe, grazing calendars) to better combine AMS and grazing.

Keywords: grazing time, accelerometer, lifecorder +