AUTOMATED DAILY LIVEWEIGHT MEASUREMENTS IN DAIRY CATTLE AT PASTURE AND ITS ASSOCIATION WITH LAMENESS IN EARLY LACTATION

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LAMENESS of dairy cattle is recognised as one of the most costly disease conditions affecting dairy herds fed predominantly on pasture. We conducted a prospective observational study conducted on a seasonally calving, pasture fed dairy herd in the lower North Island of New Zealand. Our objectives were to determine the effect of LAMENESS on liveweight change in the early lactation period. This was a research dairy herd in which staff were accustomed to keeping complete and detailed records of all disease and treatments events experienced by individual animals. Liveweights of all lactating cows were recorded twice daily using walkover scales positioned within the exit race of the milking parlour.

The data was comprised of 27,058 liveweight records from 463 cows over the first 100 days of lactation. A total of 43 LAMENESS events were recorded in 38 cows over a total of 40304 cow-days at risk. The incidence rate of LAMENESS was 38.8 cases per 100 cow-years at risk (95% CI 27.3 to 52.7 cases per 100 cow-years at risk). A linear mixed model, taking into account the effect of repeated measures from each cow and adjusting for the effect of parity, days in milk and the presence of a LAMENESS event was fitted to the data. Our analyses show that cows experienced a liveweight change of -4.98 kg (95% CI -8.8 kg to -1.2 kg) in the 9 days before a LAMENESS event was recorded. On the day on which LAMENESS was recorded liveweight change was -13.6 kg (95% CI -19.1 to -8.0 kg); thereafter cows continued to lose weight for a period of up to 20 days.

This study has provided a starting point for more precisely quantifying the relationships between LAMENESS and liveweight loss and the knock-on negative effects on production, reproduction and survival. Quantifying the effect of LAMENESS in terms of its effect on liveweight and milk yield is of great use for estimating the impact of disease on herd profitability, making it easier for herd managers to justify costly herd-level interventions (such as widening and/or resurfacing farm raceways). As additional data is gathered over the remainder of the current milking season we will evaluate the effect of specific LAMENESS diagnoses (e.g. bruising versus white line disease) on liveweight loss. This will be useful in terms of providing farm staff with guidelines around how quickly and aggressively therapy needs to be applied for specific LAMENESS conditions.