

Lameness Treatment Rates in Wisconsin Dairy Herds

N.B. Cook, MRCVS

University of Wisconsin-Madison, School of Veterinary Medicine, 2015 Linden Drive, Madison, WI 53706

Introduction

Few studies have documented lameness treatment rates in North American dairy herds. Case definition, ability to detect lame individuals and frequency of delivery of the hoof trimming program significantly impact the incidence of new and recurrent cases.

Materials and Methods

Treatment records for lame cows were kept on 10 Wisconsin dairy herds for 12 months using records obtained from the farmer and hoof-trimmer. Six herds were free-stall housed and four herds were tie-stall housed. Half used sand bedded stalls and half used a rubber mat or mattress. Stall base types were equally distributed by housing type. Each herd was visited twice during the recording period and lameness prevalence assessed using a four-point locomotion scoring system. A new lameness treatment was defined as a limb-case treated within one 28 day period. A recurrent treatment occurred in the same limb, greater than 28 days after the first treatment for the same condition.

Results

Mean (SE) herd size was 145 (28.2) cows. Mean (SE) herd lameness prevalence, determined by averaging the results of locomotion scoring at two visits during the recording period, was 22.2% (2.8). A total of 1155 lameness treatment events were recorded in the 10 herds. Lameness affected 39.2% (7.3) of the herd on average. Herd mean (SE) lameness treatment rate was 69.1 (15.6) limb-cases per 100 cows per year, with a mean recurrence rate of 12.2%. Mean annual lameness treatment rate was higher in free stall herds at 91.1 limb-cases per 100 cows than in tie stall herds at 40.2 limb-cases per 100 cows. The mean ratio of incidence to prevalence for all herds was 3.2:1, with a range from 0.7:1 to 5.4:1. The lowest ratios were from herds where

the farmer was the sole lameness recorder, and the highest ratios were found in herds with the most frequent hoof-trimming visits.

Papillomatous digital dermatitis (PDD) was the most common lesion found, accounting for 56.8% of all treatments. Other infectious lesions, such as foot rot, were uncommon. Sole ulcer (18.4%), white line disease (10.43%) and sole hemorrhage (6.4%) were the most common claw horn lesions identified.

Mean (SE) treatment rate for claw horn lesions was 37.4% (14.7) in mat and mattress stall herds and 16.8% (3.7) in sand stall herds ($P = 0.16$). Mean (SE) treatment rate for infectious lesions was 58.5% (19.3) in sand stall herds and 23.3% (17.2) in mat and mattress stall herds ($P=0.7$). The highest rates of lameness treatment by month occurred in September and during the period January - February. The proportion of limb treatments due to claw horn lesions compared to infectious lesions peaked in September at 59.4% of all treatments. For all other months, infectious lesions exceeded 50% of all treatments

Significance

PDD is by far the most common cause of lameness in North American dairy herds in both free-stall and tie-stall housing. Cold weather during the late winter may lead to manure handling problems in the alleys and reduced frequency of foot-bathing, triggering an elevation in the rate of new PDD infections. Sole ulcer was the most common claw horn lesion identified, with white line disease also common. Claw horn lesion treatment rate was 55% less in sand stall herds than in mattress herds, suggesting some benefit to using sand bedding in the prevention of these lesions. This benefit did not extend to the control of PDD. Changes in cow behavior combined with an increased risk of sub-acute ruminal acidosis during the period of summer heat stress may be responsible for an increase in the rate of claw horn lesions observed around two months later.