Evaluation of Lameness in Michigan Dairy Herds

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Introduction

Lameness in dairy cattle is a well-recognized health concern and is associated with significant economic loss. Numerous studies have investigated lameness with a focus on lesions found in lame cows, rather than a comparison of lesions found in lame and non-lame cows. Moreover, lameness scoring has had but a minor role in lameness research. Objectives of this study were to categorize lesions in lame and non-lame cattle, and correlate them with lameness scores (LS), body condition scores (BCS) and milk production in select dairy cows in Michigan.

Materials and Methods

Dairy producers in mid-Michigan milking at least 50 but not greater than 300 cows, and subscribing to Dairy Herd Improvement Association (n=610), were contacted via mail. Producers interested in participating in a lameness study (n=200) were randomly selected for farm visits. On each farm, lactating cows that had permanent, visible identification were assigned BCS and LS. A standard 1 to 5 system for BCS was used. For LS, a 1-to-5 classification used 1-no lameness: 2-1 mild lameness (arched back while standing and walking; normal gait): 3- moderate lameness (abnormal stance and gait): 4 and 5-obvious lameness in one or more limbs. Selected farms were re-visited, during which a maximum of 20 cows per herd were re-evaluated for BCS and LS. Individual claws from lame and non-lame cows were examined and lesions were categorized. The data was analyzed using a spreadsheet (Excel) and a statistical program (Statistical Analysis System for Personal Computers, SAS-PC). Statistical analysis included comparison of lesions to BCS, LS and milk production.

Results and Conclusions

Initial visits were conducted on 95 farms, 30 of which were selected for a second visit. Most frequent LS from the first and second farm visits was 2. Claws from 452 cows, both lame and non-lame, were examined for abnormalities. In the following list, an (*) indicates lesions found most frequently: abscess, corn, digital dermatitis, foot rot, hemorrhage*, heel horn erosion*, interdigital dermatitis, overgrown hoof, sole ulcer, undermined sole and white line disease*. Hemorrhage, heel horn erosion and white line disease were frequently found on cows with LS of 1, as well as cows with LS of 2 or greater.

As LS increased, BCS ($p<0.001$) and milk production ($p<0.05$) significantly decreased. In addition, incidences of abscess, heel erosions, hemorrhage, sole ulcer, and white line disease were more likely. Hemorrhage, sole ulcers and white line disease have been associated with laminitis. This condition has numerous predisposing factors, including nutritional imbalances and such environmental problems, as lack of exercise, prolonged standing and inadequate bunk and stall space. Herd lameness scoring and assessment of claw lesions may be useful for monitoring herd production and health. An evaluation of certain management practices may be prompted if lameness scores increase and/or lesions associated with laminitis are found.