

Effect of Lameness in Fresh Cows on Milk Production and Somatic Cell Counts on a Large Commercial Dairy

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Introduction

Lameness in dairy cattle is a both an economic and welfare issue for most dairies. Lameness is defined as the departure from the normal stance or gait of an animal. This is the result of a structural or functional disorder of one or more limbs. Lameness can affect the cows feed intake, body weight, milk production and place them at a greater risk of culling. This study was designed to follow cows right after calving and evaluate the effect of being lame on early and peak milk production and level of milk somatic cell counts at freshening. The hypothesis proposed is that clinical lameness causes losses in milk production and high somatic cell counts.

Materials and Methods

A baseline measurement of lameness was collected in the first seven days of calving, at 21-28 days and at 85-92 days. Locomotion Scores were applied in accordance to a five score system where LS-1, normal stance and normal gait; LS-2, arched stance and normal gait; LS-3, arched stance and abnormal gait; LS-4, obvious lameness in one or more legs; LS-5, reluctant or unable to bear weight on one or more legs. The farms Dairy Comp 305 records were utilized to compare production and somatic cell counts at 14 and 90 days into lactation. In addition, days to first breeding and conception rates will be evaluated. A baseline measurement of lameness was collected in the first seven days of calving. Locomotion Scores were applied in accordance to a five score system where LS-1, normal stance and normal gait; LS-2, arched stance and normal gait; LS-3, arched stance and abnormal gait; LS-4, obvious lameness in one or more legs; LS-5, reluctant or unable to bear weight on one or more legs. The farms Dairy Comp 305 records were utilized to compare production as an 24 hour average at 14 days in milk and 42 days in milk and somatic cell counts prior to 30 days after freshen.

Results

The records of 486 cows were followed from calving through the first 60 days after calving. Of the 486 cows, 213 cows were in their first lactation and 273 cows were second or greater lactations. Analysis was performed comparing each of the five locomotion scores separately and combining normal and mild lameness to the observed lameness (LS-1 and LS-2 vs. LS-3 and LS-4), normal to abnormal (LS-1 vs. LS-3) and normal to clinical lame (LS-1 vs. LS-4), since there were no cattle with a LS-5. When lameness of all cows was compared at 14 days, there were no differences in milk production or milk somatic cell counts. However, when the combination of LS-1 and LS-2 was compared to LS-3 and LS-4, the mean milk production was lower (36 kg vs 34 kg), respectively in the higher score cows. No differences were measured in milk production for separate or combined locomotion scores in the first lactation cows ($P=.49$), but a difference in milk production approaching significance ($P=.14$) for older animals was found. This difference was greater between the cows with LS-3 and LS-4, respectively ($P=.27$). No differences were observed for milk somatic cell counts in the first 14 days of lactation. These differences in production are likely to become more significant in peak milk production and may also affect the breeding status of the two groups.

Significance

In large dairies, first lactation cows are often separated from older cows so the staff can better manage the feeding requirements. However, lameness is not considered in grouping cows that may have a subsequent effect on production and reproduction status. Separation or special consideration for first lactation cows with lameness may not be as important as separation or special consideration for older animals with ambulatory problems.