



± 1760 liters, respectively). Based on a t-test analysis, it was found that although the mean amount of total milking days, total milk production, and corrected 305-day milk production of the non-lame group were greater than the lame group, the difference was not significant ($P > 0.05$). According to the t-test analysis, the results for the second plan were similar as well. Even though this study was conducted in a herd with full hoof and welfare care, the results showed a decrease in milk production of lame cows and an increase in lactation period of non-lame cows, which should be considered in lameness control programs.

Key words: lameness, dairy cow, milk production

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Evaluation of The Effect of High Locomotion Score on Culling Rate in Cows

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Lameness is defined as clinical manifestation of painful disorders, mainly related to the locomotor system, resulting in impaired move-



ment or deviation from normal gait or posture. The severity of lameness vary from stiffness or decreased symmetry of limb movement to an inability to bear weight on a limb, or even total recumbency. Locomotion scoring (LS) is one of the early diagnosis tools for lameness, which aims to prevent, identify and effectively manage the cases that lead to lameness. This study was performed to investigate the effect of high LS of dairy cows in different days in milk (DIM) on culling of the same cows. A farm with 900 dairy cows, free stall barns and average annual milk production of 39 lit/cow in two years were selected. Retrospective cohort analysis of data on primiparous cows were used in this study. Cows in two groups of exposure (lame cows with scores 4 and 5 in at least one record) and non-exposed (score 1, 2 or 3 in the whole interval) in three different DIM (0-120 days, 121-250 days and 250 days and more) were enrolled in this study. LS on a monthly basis was performed using 5-point Sprecher method. SPSS statistics 26 software was used to evaluate the data by using chi square and fisher's exact tests, the difference between culling in the exposed and non-exposed groups was evaluated, p value set as 0.05. Relative risk of culling in the exposed and non-exposed groups was calculated with a 95% confidence interval. According to the results, high LS in cows with 0–120 DIM significantly resulted in more culling than non-lame group ($P = 0.022$) the relative risk of culling in lame group recorded as 3.4 times more than non-lame group (1.4-8.5 95% confidence interval). The risk of culling for above 120 DIM was not significantly different between the exposure and non-exposure groups ($p > 0.05$). The results of this study show the importance of preventing lameness on 0-120 DIM. Result of this study can be used as a base in economic studies on risk of lameness in the herds.

Keywords: dairy cow, culling, lameness, locomotion scoring

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