

# The Effect of Lameness on Milk Production in Dairy Cattle

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Decisions regarding the economic value of preventing and treating lameness in dairy cattle require accurate estimates of costs of lameness. Potential losses due to lameness include decreased milk production, but results of studies of this effect have been inconsistent. The objective of this study was to estimate the effect of lameness on milk production using data collected prospectively from a commercial dairy herd with daily milk weight measurements. Milk production and lameness data were collected from June 1997 to March 1998. Farm personnel identified and treated lame cows, assigned a severity score (mild, moderate or severe) and recorded the most significant cause of lameness. Lameness information was written on paper forms at the time of treatment and collected weekly for entry into a computer database. Milk weights were recorded electronically at each milking, transferred to a dairy records program (DairyComp 305®) and downloaded weekly for storage. Repeated measures analysis of variance was used to estimate the effect of the first lameness event observed for each lactation during the observation period on weekly average milk production (lbs/day). The analysis was done while controlling for the effect of lactation (1, 2, ≥3) and stage of lactation (30, 10-day intervals). The

unit of observation was a cow-lactation (n=2158) with 1224 cows contributing data from one lactation and 467 cows from two lactations. An index variable was created to code for the time of lameness relative to the date of milk production measurement. The categories for this variable were ≥3 weeks before, 2 weeks before, 1 week before, week of milk weight, 1 week after, 2 weeks after and ≥3 weeks after, and never lame. Thirty-five percent (766/2158) of lactations had at least one lameness event. The effect of lameness on milk production was highly significant ( $p < 0.0001$ ). Cows that were diagnosed lame at least once started out with 2.7 lbs per day higher production than herdmates that were never diagnosed as lame during the study period. Compared with the period three or more weeks before lameness was diagnosed, the estimated effects on milk production 2 weeks before, 1 week before, same week, 1 week after, 2 weeks after, and ≥3 weeks after were -0.3, -1.0, -2.6, -4.2, -4.6, and -4.8 lbs./day, respectively. This analysis showed a gradual decline in milk production beginning before lameness was first recognized. By three or more weeks after the first lameness event, milk production had decreased an average of 4.8 lbs./day.