

Is Lactation More Persistent with Photoperiod Management?

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Previous studies have shown that providing long day photoperiod (16-18 h/d of light, 6-8 h/d of darkness) is an approach to improve lactation persistency in dairy cows. The main objective of this project was to evaluate relationships between actual photoperiod that animals are exposed to and the persistency of lactation during summer or winter months. Twenty dairy farms near Edmonton (AB, Canada) with DHI data were selected. Based on assessment of light intensity in barns, farms were categorized in two groups: farms with photoperiod management (LP farms; 16-18 h/d of light \geq 150 lx, 6-8h/d darkness) and farms without photoperiod management (SP farms). The SP farms were further categorized in two groups; SP 1 farms were herds with 8 - 16 h/d of light \geq 50 lx and SP 2 farms with \geq 16h/d of light 0-50 lx. DHI data, such as peak yield, milk yield and composition, were collected between 90 to 230 DIM during short days (September 2012 to Feb 2013) for cows that calved in summer and during long days (March 2013 to Aug 2013) for cows that calved in winter. Among the twenty farms, only 2 farms were categorized as LP farms whereas 15 farms were categorized as SP 1 farms and the other 3 farms as SP 2. For both LP and SP farms, categories of photoperiod that animals were exposed to did not change between summer and winter months. Comparing milk yield data (90 -230 DIM) between short vs. long days, there were not significant effects on yields of milk (36.0 vs 36.7 kg/d), protein (1.15 vs 1.14 kg/d), fat (1.32 vs 1.27 kg/d) or peak milk yield (42.6 vs 43.9 kg/d) and persistency of lactation (95.9 vs 97.0 %), respectively, but milk fat (3.69 vs 3.47%) and protein (3.22 vs 3.11%) content tended to be greater during the winter months compared with the summer months. For both winter and summer months, LP farms had greater milk yield compared to SP farms (39.3 vs 34.8 kg/d), but the milk yield difference cannot be exclusively attributed to photoperiod management due to differences in other management practices. Further, persistency of lactation was similar between LP and SP farms (97.3 vs 95.9%, respectively).

Implications: The results of this experiment showed that cows within farms were exposed to similar photoperiod regardless of the season. Although LP farms had greater milk yield than cows in SP farms, lactation persistency was not different.