ABSTRACT

To evaluate effects of different dry period lengths on milk yield, milk composition, and energy balance of dairy cows, 122 multiparous and primiparous Holstein dairy cows were used in a completely randomized experimental design with 56-, 42-, and 35-d dry period lengths. Actual dry period lengths for respective treatments (TRT) were 56 ± 5.1 d, 42 ± 2.1 d, and 35 ± 2.7 d. Overall, cows in the 42- and 56-d TRT gained more body condition than those in 35-d TRT during the dry period; however, postpartum body condition score did not change substantially among the TRT. Although from 3 to 210 DIM, differences were not detected in the milk yield of multiparous cows between the 35- and 56-d TRT, primiparous cows in the 35-d TRT produced less milk than those in 56-d TRT. In primiparous cows, the milk production at wk 9, 10, and 11 of lactation was lower in the 35-d compared with the 56-d TRT. Primiparous cows in the 35-d compared with the 56-d TRT produced less milk protein. In the 35-d TRT, serum triglyceride concentration was greater in primiparous cows than in multiparous cows during the peripartum period. Among primiparous cows, those in the 56-d TRT had greater concentrations of nonesterified fatty acids than those in the 35-d TRT during the peripartum period. No significant differences were observed in concentrations of serum glucose, insulin, and insulin-like growth factor-I during early lactation among TRT. There was also no difference among TRT for incidence of metabolic disorders. Thus, this study indicates that shortening the dry period to 35 d may be beneficial in multiparous and overconditioned cows, but not in primiparous cows.

Key words: dry period, metabolic status, performance