

Effect of individualized feeding strategy on milk production of Holstein cows

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Earlier studies indicated a positive effect on peak yield and lactation milk yield of an individualized feeding strategy, applied in early lactation, when ration energy concentration was reduced when cows entered deposition phase. The objective of the present study was to determine the effect of a high energy diet from calving until live weight nadir followed by standard diet as compared to a standard diet throughout the period. It was hypothesized that the high energy diet would lead to an increased milk yield until diet shift, and that a higher milk yield would be maintained also after diet shift. Sixty-two Holstein cows (30% 1st parity), managed for 16 months lactations in a robot milking system, were allocated to normal (NOR) or experimental (EXP) feeding strategies at calving. Diets were based on the same feeds, partially mixed rations ad libitum with supplementary concentrate fed restrictively in the milking robot. Cows on NOR were fed 60:40 forage:concentrate ratio throughout the period. Cows on EXP were fed a higher energy density by 50:50 forage:concentrate ratio until they reached ≥ 42 DIM and a live weight gain ≥ 0 kg/d, and were then shifted to the NOR diet. Data were evaluated using a linear mixed-model. From days 0 to 42, the multiparous EXP tended to produce more milk per day (lsmean \pm SEM) than the multiparous NOR cows (40.0 vs. 36.2 kg, ± 1.4 ; $p=0.063$). For the primiparous cows, milk production was not influenced by treatment ($p=0.17$). From days 79 to 98, after the shift in diet, EXP had similar milk production as NOR cows for both parities. In conclusion, the energy-enriched EXP diet tended to increase milk production for the multiparous cows during the first period but this effect was not carried over to the following period with NOR feeding.

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