PROVIDING FRESH PASTURE IN THE EVENING FOR FULLTIME GRAZING DAIRY COWS INCREASED ENERGY CORRECTED MILK YIELD

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Abstract. The combination of a more favourable nutritional value of the pasture in the evening and cows increased motivation to graze later during the day, could improve grazing efficiency and increase milk yield in pasture-based dairy productions. In May 2022, we provided 60 fulltime grazing cows in Sweden with fresh pasture either after morning (AM) or evening (PM) milking and investigated the treatment effect on milk yield, body weight, and behaviour. Each treatment was offered as strip grazing with *ad libitum* herbage allowance (>35 kg DM/cow/d). Pasture consisted of (in increasing order) white clover (*Trifolium repens L.*), timothy (*Phleum pratense*), meadow fescue (*Festuca pratensis*), ryegrass (*Lolium perenne L.*), chicory (*Cichorium intybus*), and plantago (*Plantago lanceolata*). Twice-day milking was employed, during which cows received 2 kg grain-mix, in total 4 kg/d. Treatment adaptation was employed for three weeks, followed by one sampling week. Data was analysed in a GLM with treatment, parity, DIM, and treatment×parity as fixed effects. The chemical composition of the pasture was CP 15(2.4), WSC 13(2.5), and aNDF 32(3.3). The CP:WSC ratio was 1.22(0.53) for AM, and 1.19(0.44) for PM. Average temperature and THI for the sampling week at night (1800-0600 h) were 9(2.6)˚C and 49(4.6), and at daytime (0700-1700 h) 13(2.0)˚C and 55(3.3)(mean(SD)).

Cows in the PM treatment had fewer (19±0.8; P=0.016) but longer grazing bouts (30±1.2 min; P=0.007), and grazed more intensively (77±2.7 min/2h; P<0.001) the first 2h after pasture access compared to AM cows (22±0.8 bouts/d; 25±1.2 min/bout and 37±2.8 min/2h, respectively). Total grazing time tended to be longer for PM cows (556±19.2 min) compared to AM cows (520±19.2 min; P=0.068). Furthermore, PM cows spent less time ruminating (404±11.8 min/d) compared to cows in the AM group (467±11.8 min/d; P<0.001). Cows receiving new pasture after evening milking (PM) had a higher ECM yield (29±1.0 kg/d) compared to AM cows (26 ±1.0 kg/d; P=0.009). Fat (P=0.08) and protein (P=0.02) yield kg/d were 1.15±0.047 and 0.89±0.087 vs 1.23±0.047 and 0.96±0.087 for AM and PM respectively. There was no difference in body weight change between the two treatments (PM -0.6±0.2 kg/d and AM -0.7±0.2 kg/d; P=0.56).

Even though both groups were on fulltime grazing, a simple change in grazing management by providing access to fresh pasture later in the day, resulted in a more intense grazing and increased ECM yield, without losing body weight. Taking cows' own grazing motivation into account for timing of fresh pasture access, may be beneficial to increase efficiency on fulltime pasture.

Keywords. Grazing behavior, access time, rumination, ECM, body weight.