Abstract
An experiment was carried out in spring over 68 days, in order to study the effect of milk yield level on food intake and feeding behaviour of dairy cows under a rotational grazing system. Twelve August calving Friesian dairy cows yielding in average 32.0 kg./day, were used. The data were analyzed in a cross-over design, with 4 latin squares, representing the initial daily milk yields level of the cows (37.5; 34.3; 31.3 y 30.0 kg.); 3 diets (D1; only grazing, D2; grazing plus 6 kg/day of a sugar-beet pulp based concentrate, D3; grazing plus 6 kg/day of a cereal-based concentrate); and 3 periods (rotations). The milk yield levels were studied during three rotations of approximately 23 days with two daily movements. In the last week of each period individual measurement of feeding behaviour was carried out, recording the grazing, ruminating, laying, standing, walking, milking and rate of biting activities every ten minutes during 24 hours. Results showed that herbage intake and total dry matter intake were significantly affected by the milk yield level, and that for each kg of increment in milk yield (range 37.5 - 30.0 kg/day) cows ate extra 0.51 kg dry matter per day. Grazing time was greater in highest yielding cows compared with lowest yielding cows (489 min/day v/s 434 min/day, respectively), but no differences were found during the nocturnal period. Ruminating time was greater in the highest yielding cows than in the lowest yielding cows, but only during the nocturnal period (271 min/day v/s 233 min/day, respectively). High yielding cows increased grazing time significantly by decreasing resting time.

Keywords
Feeding behaviour, milk production, dairy cows, grazing.