Effect of limited vs. ad libitum concentrate feeding on the performance and carcass and meat quality of Parda de Montaña bulls finished on pasture

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Supplementation is a common practise to improve performance and meat quality of grazing ruminants. When delivered on ad libitum basis to reduce workforce, concentrate intake might exceed the maximum 40% of the daily diet imposed by organic farming regulations. The aim of this study was to compare the performance of grazing young bulls with restricted vs. ad libitum concentrates. Parda de Montaña autumn-born bull calves (n=16, aged 6.5 mo, 237 kg) were rotationally grazed on natural meadows. Eight bulls received a fattening concentrate (13.7% CP, 18.8% NDF) on ad libitum basis (ADLIB) and the other 8 were fed daily 3 kg per head (3KG). Grass and concentrate intakes were estimated weekly by group, in the case of grass by the herbage regrowth and disappearance method. At the end of the summer (12 mo), bulls were slaughtered and carcass and Longissimus thoracis meat characteristics were assessed, and analyses of variance were performed. Growth rate was higher in ADLIB than in 3KG bulls (1.50 vs. 1.27 kg/d, respectively, P<0.05), due to a greater concentrate intake (6.3 vs. 2.7 kg DM/d, respectively), although grass intake was slightly lower than that of the 3KG group (5.9 vs. 7.2 kg DM/d, respectively). Slaughter weight was not different (480 vs. 448 kg in ADLIB and 3KG, P=0.12) but ADLIB bulls had heavier carcasses (292 vs. 253 kg, P<0.01), and greater dressing percentage (60.8 vs. 56.6%, P<0.001). ADLIB carcasses had slightly better conformation score (11 vs. 10 in a 15-point scale, P=0.06) and backfat thickness (1.31 vs. 0.76 mm, P=0.07), but similar subcutaneous fat colour. Meat shear force and colour were similar for both groups and evolved similarly through the ageing period. Meat chemical composition was similar in both treatments, and there were only slight differences in individual fatty acid contents. In conclusion, the different feeding management resulted in different gains and carcass weights but did not influence meat quality.

Automated activity monitoring as a management tool in dairy production

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The structural development in dairy farming has lead to increased farm size, where each co-worker is responsible for monitoring an increasing number of animals. At the same time there is an increasing focus on animal health and welfare. Thus there is a need for new tools for monitoring and troubleshooting at dairy farms. The first symptom of a disease is very often a change in behavioural patterns. The most well known changes in behaviour in response to disease are reduced activity, decreased feed intake and increased time spend lying. Development of devices for automatic registration of behaviour can contribute considerably to on-farm assessment of animal welfare as well as a tool for consultancy, and can be used as documentation for a given standard of animal welfare. During the last years devices for wireless measurements of three-dimensional acceleration has been used to estimate important aspects of dairy cow activity. There is some documentation that accelerometer technology can be used to estimate lying, standing and walking as well as the number of steps taken when placed on the leg of cows. There are also some preliminary results suggesting that when placed on the neck of cows the technology may be useful to estimate eating behavior indoors as well as on pasture. Commercially available activity loggers and 3-dimensional accelerometers attached to the legs have been used to identify cows in heat and different algorithms have been developed for identification of lame cows. Furthermore, there is some evidence that automated recording of activity may be useful for detection of other diseases. Accuracy in automatic recording of different activities of dairy cows will be discussed as well as the value of the automated recordings of varies activities of dairy cows in relation to prediction of the status of the animal.