

sedation, as determined from heart rate and cortisol responses, appear questionable. However, the magnitude of the stress responses recorded were much lower than those reported in the literature to follow many other husbandry procedures.

59. Comparison between growing fattening bulls finished at grass or indoors: animal performances and carcass composition

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In some countries, beef meat is traditionally produced with growing fattening bulls kept indoors and fed concentrate. Meat production from pasture may be an alternative. A trial was carried on to compare both systems. Sixteen bulls from Belgian Blue breed double muscle type were divided in two groups. Eight animals grazed during 5 months and were slaughtered directly when they were taken out from the pasture (pasture group, PG). Stocking rate and nitrogen fertilizer were adapted in order to provide high quality grass in sufficient quantity. The animals received also 2 kg of a concentrate composed of 500 g/kg of barley and 500 g/kg of dried beet pulp. Eight control animals were fattened in a free stanchion barn and were fed with concentrate based on sugar-beet pulp, cereals and protein from vegetable origin (control group, CG). The initial live weight was 358 and 363 (s.e.d. 10.26) kg in the CG and PG respectively, the final weight was 577 and 566 (s.e.d. 13.83) kg so that the total live-weight gain was 220 and 203 (s.e.d. 12.62) kg. The length of the fattening period was 156 and 142 days and the average daily gain was thus 1.41 v. 1.43 (s.e.d. 0.09) kg/day ($P > 0.2$). The weight of carcass and the killing-out proportion were significantly lower in the PG (329 v. 355 (s.e.d. 10.33) kg, $P < 0.05$; 600 v. 630 (s.e.d. 7.05) g/kg, $P < 0.01$). The proportion of muscle in the carcass was similar in the two groups although the animals from the PG had higher proportion of bone (136 v. 126 (s.e.d. 4.64) g/kg, $P < 0.1$) and tended to have lower proportion of fat (114 v. 127 (s.e.d. 8.89) g/kg). Consequently, grazed animals yielded significantly lower quantities of lean meat (247 v. 265 (s.e.d. 9.61) kg, $P < 0.1$) and also of adipose tissues (37 v. 45 (s.e.d. 2.84) kg, $P < 0.05$). Although the cost of production at pasture was 0.39 lower, the net profit per animal was 0.74 lower. The lower profit in the PG is associated with a lower carcass price due to insufficient fattening state. It can be concluded that the gain of bulls fattened on pasture was the same as indoors but these bulls had lighter carcasses which were depreciated by the meat market.