Performance, carcass and meat quality of forage-fed steers as an alternative to concentrate-based be

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The performance and carcass quality under different management systems were studied to search alternatives to indoors intensive beef production. During the winter housing period, 8 bulls were *ad libitum* fed concentrate+straw (C) while 16 steers were fed a total mixed ration. From April, steers grazed on mountain meadows+1.8 kg DM corn/d. Half the steers grazed until slaughter at 500 kg (G-supp) while the remaining steers were finished indoors (54 d) on a total mixed ration (TMR). In the housing period, C bulls had greater weight gains than the steers (1.772 vs1.221 kg/d, P<0.001). In the finishing period, TMR steers had greater weight gains than G-supp steers (1.371 vs 0.942 kg/d, P<0.01). At slaughter (499±9.2 LW; P>0.05), C bulls were younger than G-supp and TMR steers (442, 569, 539 d; P<0.001). TMR steers had worse conformed carcasses, greater fat and lower edible meat proportions than G-supp steers and C bulls (P<0.01). The management strategy did not affect meat pH but C bulls had lower shear force than G-supp and TMR steers (66, 83 and 79 N/cm2, respectively; P<0.05). Meat from C bulls had lower yellowness (b*; P<0.001) and Chroma (C*; P<0.01) than that from both groups of steers. Steaks of TMR steers had greater intramuscular fat content than those of G-supp steers (P<0.05) whereas that of C bulls was intermediate. Steaks of G-supp steers had greater PUFA n-3 than those of C bulls and TMR steers (P<0.001), and greater PUFA n-6 than TMR steers (P<0.001). Thus, G-supp and TMR steers had lower n-6:n-3 ratio than C bulls (5.23, 6.13 and 20.07, respectively; P<0.001). Consumers scored higher the taste, tenderness and overall impression of the steaks from C bulls than those from both groups of steers (P<0.05). Consequently, forage-feeding can be an alternative to concentrate-fed cattle, but the proportion of corn in diets of forage-fed cattle should be increased to improve meat tenderness and guarantee the consumers acceptability.