Chemical and fatty acid characteristics of meat of Podolian bulls slaughtered at different ages

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ABSTRACT

Podolian cattle represents one of the most important native Italian breed. This breed was once reared in many different Italian regions, whereas in recent years a dramatic reduction of the number of head has relegated this breed to some marginal areas of southern Italy. For meat production, calves are dam-reared on pasture for about 8-10 months and, subsequently they are fed a finishing diet in loose house conditions with external paddock. They usually are slaughtered from 14 to 18 months of age. The aim of this study was to evaluate the chemical and the fatty acid composition of sample cuts of Podolian bulls slaughtered at different ages; even if breed, age and sex related to differences in the fatty acid composition of beef cattle have been widely demonstrated (Einchhorn *et al*., 1986; Huerta-Leidenz *et al*., 1996; Malau-Aduli *et al*., 2000), few data are available on Podolian cattle. This trial was carried out on 12 Podolian steers, from the same farm in the Basilicata region. The subjects, at the age of about 10 months, were moved to a stall for fattening and divided into 2 homogeneous groups of 6 animals each. During the trial period, the animal were fed *ad libitum* with hard wheat straw and a complete pellet feed, containing barley, oats, field beans, and a vitamin-mineral integrator. The steers were slaughtered at the age of 14 months (A group) and 18 months (B group), according to veterinary police rules. The chemical composition of raw *Longissimus lumborum* (Ll) of the B group presented a more higher incidence of protein (22.25% *vs.* 21.34%; P<0.01) and a lower value of moisture (72.29% *vs.* 73.92%; P<0.01), data also found in the works of Cifuni *et al*. (2004) and Marino *et al*. (2006). No significant differences emerged in fat percentage between the two ages. The fatty acid composition of the fat extracted from the raw Ll was not very different into the two groups. The only significant difference was showed in the ω6/ω3 ratio, the older animals presented a higher value (7.472 *vs.* 5.270; P<0.05), due to the higher percentage of ω6 (2.48% *vs.* 2.25%) and the lower percentage of ω3 (0.35% *vs.* 0.47%), into their fat (Carnovale and Nicoli, 2000; Lengyel *et al*., 2003). The same results were found in the trials carried out by Enser *et al*. (1999), Elmore *et al*. (2004) and Descalzo *et al*. (2005), where the increase of percentage of ω6 and of the value ω6/ω3 are due to the cereal-based diet used to feed animals. The group B showed no increase in the percentage of intramuscular fat during the fattening period from 14 to 18 month and to maintain the fatty acid composition very similar to the group A.