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Meat quality traits of Marchigiana beef cattle

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ABSTRACT

Variation in quality of meat - within the same breed and among different ones - is due both to different biological factor (genotype, productivity, sex and age) and environmental and technological factors (composition and nutritional level of diet, rearing, transport and slaughter) acting on animals reared. All these factors interact in a complex way and lead to a high variability of muscular structure that characterizes the qualitative characteristic of meat. For this reason, in a study that expected the control at slaughter of 1000 Marchigiana cattle, on a random, 114 sample's steaks were taken from LD at 5th rib, right side of carcasses grading U or more in SEU-ROP grid. On meat samples, we tested colour parameters ($L^*a^*b^*$) using Minolta Chromameter CR 200 and light D65 and Drip Loss as reported by ASPA Commission (1996). Then meat samples were weighted, frozen, lyophilized; their chemical composition (moisture, protein and fat) was determined. Variability of analysis' results was studied according to JMP package (SAS). The colour means (L^* , a^* , b^*) were obtained considering at least 3 readings on every sample. Luminosity value ($L^* = 40.1 \pm 3.6$) is similar to the one reported on subjects transported for 1-4 hours, similarly to the Marchigiana cattle object of this study, while is higher than the mean reported by other researchers on Valdostana cattle, English crossbreds and on Charolaise x Maremmana crossbreds. The red parameter ($a^* = 25.0 \pm 3.2$) is better than means reported by the same researchers. The yellow parameter ($b^* = 6.9 \pm 2.5$) is similar to results obtained on Valdostana cattle, but lower than means obtained by other researchers. The Hue values are lower than those reported for Charolaise x Maremmana (15.1 vs 26.1), while Chroma (26.1 ± 3.7) is similar to the values obtained by the same researchers. The moisture (72.8 ± 1.2) is similar to the mean obtained on Chianina calves, but lower than the one indicated on Marchigiana bulls. The protein (19.8 ± 1.6) is lower than that obtained on Marchigiana cattle. The intramuscular fat (3.9 ± 1.5) is higher than results obtained on Marchigiana calves. The Drip Loss (1.4 ± 0.5) is 1 point % lower than those reported by other researchers. This low Drip Loss can be considered a parameter that indicates a good muscular maturity of slaughtered cattle. All parameters have a low variability except for fat (33.1%) and Drip Loss (35.7%). The Marchigiana cattle confirms the good qualitative characteristics of its meat, and strengthen the opportunity to increase the number of Marchigiana heads to be bred and raised.