

Turkey meat quality traits as affected by gender and muscle type

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Turkey meat is the second most consumed poultry meat worldwide and represents an economic source of high-quality proteins for human consumption. Also in Mediterranean area its production and consumption have been increased during the last decade. Few studies have been conducted in order to characterize meat quality traits in turkeys and most of them only considered meat obtained from P. major muscle. For this purpose, ten females (101 d-old and 9.9 kg at slaughter) and ten males (142 d-old and 21.0 kg at slaughter) Big 6 turkeys were selected and ten muscles representing the main cut-ups were dissected from each carcass: breast (Pectoralis major and Pectoralis minor), wing (triceps humeralis muscle), thigh (sartorius, semimembranosus, ileotibialis and biceps femoris muscles), drumstick (peroneus longus, flexor perforans et perforatus digiti III, gastrocnemius pars interna muscles). Each muscle was used to assess ultimate pH following the iodoacetate method and colour using a Minolta Chromameter CR-400 with illuminant source C and readings expressed using CIE values for lightness (L*), redness (a*) and yellowness (b*). Two-ways ANOVA was performed using a model including gender, muscle type and their interaction term. As expected, both gender and type of muscle affected the most important parameters selected for meat quality assessment. As for gender, male turkeys exhibited lower ($P<0.01$) ultimate pH and higher ($P<0.01$) L* values in the most of muscles considered in the present study. These differences can be likely exacerbated by the large divergence in the slaughter age (14 vs. 20 wks-old) adopted under commercial conditions. Otherwise, redness and yellowness were not modified according to the gender of birds. Concerning the effect of the type of muscle, as expected, significant ($P<0.01$) differences were found in both pH and colour coordinates. Indeed, overall breast and wing muscles showed significantly lower values of ultimate pH, redness and yellowness when compared with thigh and drumstick muscles, which did not differ from each other. These outcomes can be ascribed to the different in vivo metabolism of the examined muscles (glycolytic vs. oxidative). Considering the current different use of turkey meats under commercial conditions, these results can be useful to define the threshold values suitable for establishing quality categories of meat according to gender and muscle of origin.

Keywords: turkeys; gender; muscle; meat quality; pH; colour