

Comparison of Quality Characteristics of Leg Meat Between Sri Lankan Indigenous Chickens and Commercial Broilers at Retail

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With the aim of investigating the differences in the meat quality traits between Sri Lankan village chickens (VC) and commercial broilers (CB) physicochemical and sensory properties of leg (thigh and drumstick) meat from the two chicken types were assessed at their market age. Ten carcasses each from VC and CB were purchased directly from farmers who are rearing VC and from retail market, respectively. Leg meat from left half of each carcass was deboned separately, and then visible skin, fat, and connective tissues were trimmed off. Deboned meat was minced and used for analysis of proximate composition, pH, and cooking loss. The right leg of each carcass was used for analysis of color, water holding capacity, fatty acid composition, and for sensory evaluation. The results revealed that the leg meat of VC had a higher crude protein content and a lower crude fat content than CB ($p < 0.05$). However, there was no significant difference in moisture and crude ash contents between the two breeds ($p > 0.05$). Though VC showed lower pH and cooking loss compared to CB ($p < 0.05$), the water holding capacity was not differed significantly ($p > 0.05$) between the two types. The a^* value was higher while L^* value was lower in VC compared to CB ($p < 0.05$). This may contribute to the darker colour of leg meat from VC. The content of polyunsaturated fatty acids including linoleic acid (C 18:2), eicosapentaenoic acid (C20:5), docosatetraenoic acid (C22:4), docosapentaenoic acid (C22:5), and docosahexaenoic acid (C22:6) was higher in the leg meat of VC than that in CB ($p < 0.05$). Additionally, VC had higher levels of n-3 and n-6 fatty acids ($p < 0.05$). Moreover, higher taste was recorded for VC compared to CB in sensory evaluation ($p < 0.05$). In conclusion, VC showed better taste and physicochemical properties compared to CB. Thus, the consumer preference for VC meat may be partially explained by these distinctive quality characteristics.

Keywords: Commercial broiler, Polyunsaturated fatty acids, Meat quality, Sri Lankan village chicken