Comparison of Quality Characteristics of Breast 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 breast meat from the two chicken types were assessed at their market age. Ten carcasses of VC were directly purchased from farmers rearing VC at Karuwalagaswewa and ten carcasses of CB were purchased from local market. Breast meat from each carcass was dissected. After trimming off visible skin, fat, and connective tissues, left half of each breast was minced separately and used for analysis of proximate composition, pH, and cooking loss. The remaining half of each breast was used for analysis of colour, water holding capacity, fatty acid composition and for sensory evaluation. Data analysis was done using SAS programme version 9.1. Breast meat of Sri Lankan VC had a higher crude protein content and a lower crude fat content than CB($p<0.05$). However, no significant differences were observed in moisture and crude ash contents between the two types ($p>0.05$). Sri Lankan VC showed lower pH values in breast meat than CB, however the cooking loss and water holding capacity of breast meat were not differ significantly ($p>0.05$) between the two type. The L* values of breast meat from Sri Lankan VC were higher ($p<0.05$) while a* and b* values were lower ($p<0.05$) than those of CB. The content of polyunsaturated fatty acids in the breast meat including linoleic acid (C 18:2), eicosapentaenoic acid (C20:5), docosapentaenoic acid (C22:5), anddocosahexaenoic acid (C22:6) was higher ($p<0.05$) in Sri Lankan VC than that in CB. Additionally, Sri Lankan VC had higher ($p<0.05$) levels of n-3 and n-6 fatty acids. Results of sensory analysis revealed that breast meat of Sri Lankan VC had higher scores for taste, tenderness, and overall acceptability($p<0.05$). In conclusion, Sri Lankan VC showed better physicochemical and sensory attributes than CB. Thus, the consumer preference for Sri Lankan VC may be partially explained by these distinctive quality characteristics.

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