

Occurrence of Broiler Chicken Breast White Striping Meat in Brazilian Commercial Plant

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Abstract : White Striping (WS) is becoming a concern for the poultry industry, as it affects the look of breast broiler chicken meat leading it to rejection by the consumers. It is characterized by the appearance of varying degrees of white striations on the Pectoralis major muscle surface following the direction of the muscle fiber. The etiology of this myopathy is still unknown, however it is suggested to be associated with increased weight gain rate and age of the bird, attributing the phenomenon to the genetically bird's selection for efficiently higher meat production. The aim of this study was to evaluate the occurrence of Pectoralis major WS in a commercial plant in southern Brazil and its chemical characterization. The breast meat samples (n=660) from birds of 47 days of age, were classified as: Normal NG (no apparent white striations), Moderate MG (when the fillets present thin lines <1 mm) and Severe SG (white striations present >1 mm thick covering a large part of the fillet surface). Thirty samples (n = 10 for each level of severity) were analyzed for pH, color (L*, a*, b*), proximate chemical composition (moisture, protein, ash and lipids contents) and hydroxyproline in order to determine the collagen content. The results revealed the occurrence for NG group was 16.97%, 51.67% for MG group and 31.36% for SG group. Although the total protein content did not differ significantly, the collagen index was 42% higher in favor to SG in relation to NG. Also the lipid fraction was 27% higher for SG group. The NG presented the lowest values of the parameters L* and a* ($P \leq 0.05$), as there was no white striations on its surface and highest b* value in SG, because of the maximum lipid contents. These results indicate there was a contribution of the SG muscle cells to oversynthesize connective tissue components on the muscle fascia. In conclusion, this study revealed a high incidence of White Striping on broiler commercial line in Brazil thus, there is a need to identify the causes of this abnormality in order to diminish or to eliminate it.

Keywords : collagen content, commercial line, pectoralis major muscle, proximate composition

Conference Title : ICASFE 2016 : International Conference on Agricultural Science and Food Engineering

Conference Location : Tokyo, Japan

Conference Dates : May 26-27, 2016