breast fillets from HBY2 showed poor cohesion with severe degree. In conclusion, from this study emerged that all the modern chicken hybrids here tested are affected by a high incidence of breast muscle defects which are particularly pronounced in high breast-yield birds.

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Effect of white striping on quality traits of raw and marinated chicken breast meat

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The appearance of white striping or striations parallel to muscle fibres on the surface of chicken breast fillets (pectoralis major muscles) is a new emerging poultry meat quality issue. It has been already demonstrated that white striping noticeably decreased consumer acceptance of pre-packaged breast meat, however few information are still available on its impact on technological traits of the meat. The purpose of this study was to characterize raw and marinated meat quality properties of fillets showing different degrees of white striping. To pursue this aim, 153 fillets were selected based on white striping degree (normal, moderate and severe) after the breast-deboning area in a commercial processing plant. Samples were used to evaluate ultimate pH, colour, drip loss, cook loss and AK-shear force on non-marinated meat as well to determine marinade uptake, purge loss, cook loss, total yield and AK-shear force after marination with a solution containing sodium tripolyphosphate and sodium chloride. The ultimate pH of severe white striped breast fillets was significantly higher than in normal and moderate groups (5.95 *vs* 5.86 and 5.88; P<0.01). There were no differences in the lightness (L*) of meat, but moderate and severe samples showed a significant (P<0.01) increase in redness (a*) and yellowness (b*). As for non-marinated meat, cook losses increased as the degree of white striping increased from normal to severe groups (21.27 *vs* 23.20 *vs* 26.74%; P<0.01). Moreover, the severe white striping resulted in significantly (P<0.01) lower shear values if compared with moderate and normal groups. With regard to marinated meat, there was a decrease in the marinade uptake as the degree of white striping increased from normal to severe (12.67 *vs* 10.97 *vs* 7.92%; P<0.01). In addition, severe group had higher (P<0.01) purge loss, cook loss and lower total yield if compared with moderate and normal groups. Finally, severe white striped fillets had lower AK-shear force values. In conclusion, this study evidenced that white striping had a remarkable detrimental effect on breast meat quality attributes by mainly reducing ability of the meat to hold and bind liquids during processing and storage.

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Effect of dietary thymol supplementation on lipid oxidation of chicken legs as related to storage conditions

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The aim of this research was to evaluate the effect of dietary thymol supplementation on lipid oxidation of chicken leg meat during refrigerated shelf-life. Chickens belonging to Ross 308 hybrid were raised under experimental conditions up to 3 kg of live weight, using three dietary treatments: control (without supplementation, C), treatment 1 (C+0.1% w/w thymol supplementation, T1) and treatment 2 (C+0.2% w/w thymol supplementation, T2). After slaughtering, the chicken legs with skin were stored under conventional (CON) and modified atmosphere (MAP) at temperature of 2-4°C for 14 days. Lipid oxidation was monitored by the determination of primary (peroxide value, PV) and secondary (thiobarbituric acid reactive substances, TBARs) products at 3, 7, 10 and 14 days of storage under both CON and MAP conditions and compared with values found on fresh meat. The three different dietary treatments did not significantly affect the lipid oxidation parameters. PV ranged between 0.5-13.0, 0.7-13.0 and 1.0-11.0 meq O2/kg of lipid in poultry meat obtained with C, T1 and T2 diets, respectively. TBARs varied between 0.1-0.7, 0.1-0.6 and 0.2-0.5 mg MDA/kg of meat in poultry meat obtained with C, T1 and T2 diets, respectively. On the other hand, interaction effect of diets and storage conditions were significant (P≤0.05) in PV formation, as it was delayed under MAP (maximum PV level after 2 and 5 days of storage in C and thymol-containing diets, respectively) with respect to conventional storage (PV apex after 2 days of storage). However, not significant differences (P≥0.05) were found on TBARs level as related to storage conditions. In conclusion, this study demonstrated that dietary thymol supplementation coupled to MAP storage conditions delay lipid oxidation of chicken legs with skin, thus improving their shelf-life.