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Poultry meat quality in antibiotic free production has improved by natural extract supplement

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Farm sustainability is a key factor in animal production. In recent years, the consumers demand for products of animal origin coming from production chains certified for animal welfare has increased. Moreover, the institutions, have restricted antibiotic use in order to prevent the antibiotic resistance. For these reasons, antibiotic free production chains are emerging. The search for innovative nutritional strategies able to support animal health and enhance product quality is required. Natural extracts containing polyphenols and seaweed are rich in bioactive compounds able to enhance animal health and product quality. The study was designed to investigate the effect of dietary supplementation with polyphenols and seaweed extract on meat quality parameters in Hubbard slow growth female chicken in antibiotic free production. The animals were fed a control diet (C) and a diet integrated with 0.3% of polyphenols and seaweed extract (T1) and were slaughtered at 56 days of age at an average weight of 2.1 kg. Ten carcasses per treatment were randomly selected for the determination of meat quality parameters. Chemical parameters, pH, colour parameters and oxidative stability were determined at 0, 3, 7 days of refrigerated storage on the right breast and thigh. Data on chemical parameters were analysed by one-way ANOVA and the other parameters were submitted to a repeated measure ANOVA. In breast, protein and ash content resulted higher in T1 group than in control ($p < .01$). The pH was affected ($p < .001$) by storage time in thigh. The redness values were unaffected ($p > .05$) by dietary treatments and storage time in both muscles. As expected, the lightness and yellowness values in thigh and breast were negatively affected by storage time ($p < .001$). The oxidative stability resulted higher in thigh of chicken fed polyphenols and seaweed extract ($p < .01$) than in control. As expected, storage time negatively affected ($p < .001$) oxidative stability in both muscles. Overall these results suggest that in chicken antibiotic free production, dietary supplementation with polyphenols and seaweed extract, positively affects protein content in breast and protect muscle from oxidative processes, enhancing poultry meat quality parameters.

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