EFFECT OF DIETARY SUPPLEMENTATION OF CHELATED SELENIUM ON THE POULTRY MEAT QUALITY


The glutathione peroxidase (GSH-Px) is selenium-containing enzyme, which catalyses the reduction of hydrogen peroxides and lipid hydroperoxides preventing the oxidative damages. The selenium (Se) deficiency increases the need for vitamin E. The aim of this study was to investigate the effect of dietary supplementation of chelated Se on the poultry meat quality. Cobb chicks were divided into two treatments: C-Control group (n=7) and S-Supplemented group (with 0.2mg of chelated Se/kg of feed) (n=7). Boneless skinless chicken thighs were stored at -26°C for 30 days and analyzed for the cooking loss (CL), lipid oxidation by Thiobarbituric-Acid-Reactive Substances (TBARS) and GSH-Px activity by a coupled assay procedure recording the NADPH oxidation by decreasing in absorbance at 340nm. The Student t-test was used to determine significant difference between two treatments. Samples of S group presented CL values (16.34%) significantly lower (p≤0.05) than samples of C group (24.70%). Lipid oxidation of C group was 31% higher (p≤0.10) than samples of S group. Samples of S group presented GSH-Px activity (0.26 U/g of meat) significantly lower (p≤0.10) than samples of C group (0.47 U/g of meat). Dietary supplementation of Se decreased CL and lipid oxidation, however the GSH-Px activity decreased, probably because the Se may have been used for the synthesis of other selenium-proteins. Furthermore, supplementation of Se could be promoted more vitamin E deposition in the muscle. Finally, dietary supplementation of chelated Se improved the meat quality by reduced of lipid oxidation and cooking loss.