THE EFFECT OF DIETARY SUPPLEMENTATION WITH SELENIUM ON THE ANTIOXIDATIVE POTENTIAL OF SEPARATED CHICKEN LEG MUSCLES

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Chicken meat, with its high nutritional value, is an important dietary issue in human consumption. Animal feeding modifications i.e. supplementation with selenium, as one of the most active natural antioxidants, may influence the total antioxidant capacity of poultry muscles, enhance meat quality and have a health promoting effect. The antioxidative properties of separated poultry muscles contribute to the total antioxidative potential of the meat. The objective of this study was to analyze the effect of different form of selenium added to birds diet on the antioxidative activity of selected chicken leg muscles. Chicken diets were supplemented with organic and non-organic selenium on the maximum level of 0.5 mg/kg. Selected muscles: m. sartorius, biceps femoris, semimembranous, semitendinosus, iliotibialis (thigh muscles), gastrocnemius and peroneus longus (drumstick muscles) were cut from chicken leg and analyzed for selenium content (AAS). Hydrophilic extracts of the muscles were analyzed for antioxidative activity by DPPH, ABTS and FRAP methods.

The collected results showed that, except m. sartorius, all the leg muscles obtained from birds fed with diet containing 0.5 mg/kg non-organic selenium were characterized by the highest DPPH and ABTS•+ radicals scavengening activity. Increased selenium content in chicken leg muscles, stated after supplementation with either non-organic or organic Se (selenium yeast), resulted in higher ability to reduce Fe³⁺ to Fe²⁺. It can be concluded that application of selenium compounds in chicken diet effected in higher antioxidative activity of broiler leg muscles and enhanced the total antioxidative potential of the meat.

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