

## Effect of Dietary *Melissa officinalis* Leaves Supplementation on Lipid Oxidation of Broiler Breast Fillets During Refrigerated Storage

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**Abstract :** To improve the oxidative stability of meat products, the use of dietary form of antioxidants can extend the shelf life and acceptability of muscle food during exposition or storage condition. As shown, this method is more effective than adding direct preservatives due to uniform incorporation of dietary additives into sub cellular membrane and therefore, they can properly inhibit the oxidative reaction at their localized sites. Furthermore, postmortem addition of antioxidants to meat cannot directly inhibit the oxidation in membrane phospholipids. Therefore, this study was designed to evaluate the effects of feed supplementation with *Melissa officinalis* leaves on lipid peroxidation of chicken breast fillets during refrigerated storage. In this study, 72 one-day old Ross 308 broilers distributed in four groups with six replicates (3 chickens each) were fed a basal diet (CONT) or basal diet supplemented with 5, 10, and 15 gr/Kg *M.officinalis*, for 6 weeks. Following slaughter, fillets from breast were stored at 4 °C in the dark for 12 days, and lipid oxidation was assessed on the basis of thiobarbituric acid reactive substances (TBARS) formed. Results showed that incorporation of *M.officinalis* in broiler diets delayed lipid oxidation in raw breast meat during refrigerated storage comparative with CONT( $p<0.05$ ). In this regard, TBARS levels of breast samples containing higher concentrations (10 and 15 gr/Kg) of *M. officinalis* (625.43 and 504.32  $\mu\text{g}/\text{kg}$  MDA equivalents, respectively) were significantly lower than those of control and 5g/kg samples (872.75 and 841.32  $\mu\text{g}/\text{kg}$  MDA equivalents, respectively) ( $p<0.05$ ). Therefore, *M. officinalis* might be utilized in novel applications as a nutritional supplement or a functional food component.

**Keywords :** breast fillet, lipid oxidation, *Melissa officinalis*, TBARS assay

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