OXIDATIVE STABILITY OF CHICKEN MEAT EMULSION SYSTEMS: THE EFFECTS OF GELLED EMULSION AND USE OF ASCORBIC ACID AND ROSEMARY EXTRACT IN DIFFERENT PHASES

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ABSTRACT

In order to examine the effects of using ascorbic acid, rosemary extract, or ascorbic acid-rosemary extract combination in different phases of flaxseed oil gelled emulsion (GE) formulation on oxidative stability, model chicken meat emulsions (CMEs) formulated with as follows; beef fat-no antioxidant (C), gelled emulsion-no antioxidant (GE-No), GE containing 100 ppm ascorbic acid in the water phase (GE-A), GE containing 100 ppm rosemary extract in the oil phase (GE-R) and GE containing 100 ppm ascorbic acid in water phase and 100 ppm rosemary extract in oil phase (GE-A/R). Protein content of samples increased from 12.99% to 14.58% with the addition of GE (P<0.05). Water holding capacity of reformulated CMEs increased up to 66.01%. At the end of the storage using ascorbic acid and rosemary extract individually or combined in GE formulation was effective to delay the primary lipid oxidation of samples, while ascorbic acid and ascorbic acid+ rosemary extracts retarded the formation of malonaldehyde. Initial free fatty acid values ranged between 0.34%- 1.07% and the initial trend was proportional to TBARS values. Reformulated samples were lighter than the control group. a* value of control was higher while b* values were lower than reformulated CMEs throughout the storage.