

Effects of Selected Plant-Derived Nutraceuticals on the Quality and Shelf-Life Stability of Frankfurter Type Sausages during Storage

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Abstract : The application of natural plant extracts which are rich in promising antioxidants and antimicrobial ingredients in the production of frankfurter-type sausages addresses consumer demands for healthier, more functional meat products. The effects of olive leaves, green tea and *Urtica dioica* L. extracts on physicochemical, microbiological and sensory characteristic of frankfurter-type sausage were investigated during 45 days of storage at 4 °C. The results revealed that pH and phenolic compounds decreased significantly ($P < 0.05$) in all samples during storage. Sausages containing 500 ppm green tea extract (1.78 mg/kg) showed the lowest TBARS values compared to olive leaves (2.01 mg/kg), *Urtica dioica* L. (2.26 mg/kg) extracts and control (2.74 mg/kg). Plant extracts significantly ($P < 0.05$) reduced the count of total mesophilic bacteria, yeast and mold by at least 2 log cycles (CFU/g) than those of control samples. Sensory characteristics of texture showed no difference ($P > 0.05$) between sausage samples, but sausage containing *Urtica dioica* L. extract had the highest score regarding flavor, freshness odor, and overall acceptability. Based on the results, sausage containing plant extracts could have a significant impact on antimicrobial activity, antioxidant capacity, sensory score, and shelf life stability of frankfurter-type sausage.

Keywords : antimicrobial, antioxidant, frankfurter-type sausage, green tea, olive oil, shelf life, *Urtica dioica* L.

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