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EVALUATION OF THE EFFICACY OF NATURAL SPICES AS PRESERVATIVES IN CHICKEN SAUSAGES: NUTRITIONAL, MICROBIAL, AND SENSORY IMPLICATIONS OF GARLIC, CLOVE, AND CARDAMOM

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Abstract. The study evaluated the impact of garlic, clove, and cardamom on the nutritional and antimicrobial properties of chicken sausages as alternatives to curing salt due to carcinogenic concerns. Sausages were prepared with garlic (T1 - 20g/Kg), clove (T2 - 20g/Kg), and cardamom (T3 - 20g/Kg), while the control used curing salt (T4 - 0.5g/Kg). Sensory evaluation, conducted by 30 untrained panelists using a 9-point hedonic scale, showed T1 (garlic) and T3 (cardamom) had superior sensory attributes. T1 had the highest moisture (67.14%) and protein (10.27%) content, while T4 had lower moisture and protein but higher fat. T4 exhibited the highest microbial growth, while T1 had the lowest. pH increased in T1 and T4 but decreased in T2 and T3 over 21 days of storage at -18°C. Coliforms were undetected in all samples. The study concluded that garlic, clove, and cardamom showed significant antimicrobial properties, extending shelf life to 21 days, with garlic offering the highest nutritional benefits and lowest microbial growth, suggesting it as a viable natural alternative to curing salt.

Keywords: Antimicrobial, Curing Salt, Natural Preservatives, Sausages, Spices.