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Application of Cosmos caudatus Kunth. (ulam raja) extract as antibacterial agent in beef and shrimp meats, and its sensory evaluation

Yusoff N.A.H.[a]; Rukayadi Y.[b]; Abas F.[b]; Khatib A.[c]; Hassan M.[a]

Save all to author list

[a] Higher Institute Centre of Excellence (HICoE), Institute of Tropical Aquaculture and Fisheries (AKUATROP), Universiti Malaysia Terengganu, Terengganu, Kuala Nerus, 21030, Malaysia

[b] Institute of Bioscience, Universiti Putra Malaysia, Selangor, Serdang, 43400, Malaysia

[c] Kulliyyah of Pharmacy, International Islamic University Malaysia, Pahang, Kuantan,Bandar Indera Mahkota, 25200, Malaysia

Abstract

The use of chemical preservatives in food products to inhibit the growth of microorganisms is widely used nowadays. However, their use has become a concern due to several negative side effects, and when consumers question the safety of the foods they eat. Therefore, the present work was conducted to investigate the potential of plant natural sanitiser from Cosmos caudatus Kunth extract to reduce the natural microflora present in raw beef and shrimp meat samples. The present work aimed to investigate the reduction of natural microflora (B. cereus, E. coli, Pseudomonas spp., S. aureus, and L. monocytogenes) in raw beef and shrimp meat samples following sanitisation with different concentrations of C. caudatus extract (0.05, 0.50, and 5.00%) at different soaking times (5, 10, and 15 min). The sanitised samples were further evaluated with sensory acceptability (colour, odour, texture, and overall acceptability) to determine their acceptance level after treatment. Based on the results, the microflora in beef and shrimp meat samples were reduced significantly ($p < 0.05$) started from 0.05% at varied soaking times. The decrease in bacterial populations was proportional to the increase in extract concentrations and soaking times. In sensory acceptability, all cooked samples achieved acceptance level by the panellists at 0.05% after 10 min of soaking time. Food samples treated with 0.05% of C. caudatus extract and 10 min of soaking time showed the best combination in terms of bacterial reduction and the level of acceptance by the panellists. Hence, it can be concluded that C. caudatus extract has a high potential as a natural-based food sanitiser that can prevent bacterial contamination while maintaining the sensory acceptability of the foods.

Author keywords

Bacterial reduction; Cosmos caudatus; Food sanitiser; Raw food materials; Sensory

SciVal Topics

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Hassan, M.; Higher Institute Centre of Excellence (HICoE), Institute of Tropical Aquaculture and Fisheries (AKUATROP), Universiti Malaysia Terengganu, Terengganu, Kuala Nerus, Malaysia; email:marina@umt.edu.my

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