Ethanolic Noni (Morinda citrifolia L.) leaf extract dechlorophyllised using sedimentation process: Antioxidant, antibacterial properties and efficacy in extending the shelf-life of striped catfish slices

ABSTRACT

Antioxidant and antimicrobial activities of ethanolic noni leaf extract (ENLE) without and with chlorophyll removal by sedimentation method were comparatively investigated. Total chlorophyll content was reduced by 82% in the top fraction (CR-ENLE) collected after 24 h at 4 °C as compared to that of ENLE. Antioxidant and antimicrobial activities were lower in the bottom fraction rich in chlorophyll (Chlo-ENLE) than others ($P < 0.05$). Based on the microbiological limit, the shelf-life of striped catfish slices pre-treated with 400 mg kg^{-1} C-R-ENLE was extended to 9 days as compared to the 3 days recorded for the control (without pre-treatment). Slices treated with CR-ENLE had lower lipid oxidation than those treated with ENLE during refrigerated storage ($P < 0.05$). The sedimentation process was therefore a potential green method for producing ENLE having improved antioxidant and antimicrobial activities without green colour. It can be used as a natural additive for shelf-life extension of fish slices.