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Exploration of two *Cucurbitaceae* fruit (muskmelon and watermelon) seeds for presence of phytochemicals, and antioxidant and antimicrobial activities

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Abstract

Cucurbitaceae family fruits, especially melons, offers significant quantities of minerals carotenoids and phenolic compounds, contributing to their antioxidant activity. However, seeds of these fruits are usually discarded as waste by products. In current study seeds of watermelon (*Citrullus lanatus*) and muskmelon (*Cucumis melo*) were separated, dried, grounded and extracted with 70% ethanol, to investigate total phenolic content (TPC), flavonoid content (TFC), carotenoid content (TC) contents and total antioxidant activity (TAA). Further antimicrobial activities of these extracts were tested against selected bacterial and fungus strains. Results showed that extracts of both cucurbits presented significant amounts of phytochemicals, with higher quantities presented by watermelon seeds. In watermelon seeds, TPC were found 156.50 mg/GAE 100 g, TFC 56.78 mg CE/100 g, TC 36.65 mg/100 g and TAA 71%, and these amounts were significantly lower than those found in muskmelon seeds. Antimicrobial study results showed that extracts of both seeds exhibited significant zone of inhibitions against two bacterial and two fungal species, and these values were very comparable to the reference antimicrobial drug used Ciprofloxacin. Findings of current research work provided significant grounds for presence of phytochemical bioactives in two melon fruits seeds, providing the basis for extraction and utilization of these bioactives, through processing and fortification different pharma foods.

Keywords: *Watermelon; Muskmelon; Seeds; Phytochemistry; Antimicrobial*