PHYTOCHEMICAL SCREENING, ANTIBACTERIAL AND ANTIOXIDANT ACTIVITIES OF THE CRUDE ETHANOLIC EXTRACT OF CALAMANSI (*Citrus microcarpa*) PEELS

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ABSTRACT

Citrus fruits are well-known sources of vitamin C and like most other whole foods, they also contain an impressive list of other essential nutrients and high amounts of phytochemicals. Calamansi, scientifically known as *Citrus microcarpa*, is a native citrus plant cultivated throughout the Philippines. Calamansi is chiefly utilized for its pulp and juice but the peels and pressed pulp, covering each individual segment of the edible portion and seeds are considered as wastes and thrown away. To further utilize the rind or peels, this study was conducted to investigate the antioxidant and antibacterial properties of the crude ethanolic extract of *C. microcarpa* peels. Presence of select phytochemicals was also tested. The antioxidant and antibacterial activities were investigated using the DPPH (2,2-diphenyl-picrylhydrazyl) free radical scavenging assay and Kirby-Bauer disc diffusion susceptibility method, respectively. Results of the phytochemical screening have confirmed the presence of alkaloids, flavonoids, tannins, terpenoids, steroids and saponins in the extract. Crude ethanolic extract of *C. microcarpa* peels also showed activity against DPPH radicals with a half maximal inhibitory concentration (IC_{50}) of 14.46 µL/mL, a much higher IC_{50} value compared to the positive control, ascorbic acid, with 8.36 µL/mL. The antibacterial activity assay of the extract showed minimal inhibition against *E. coli* and *S. aureus*.