

## Intensification of phenolic content and antioxidant activity of extract from red pitaya (*hylocereus polyrhzius*) peel

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### ABSTRACT

Red Pitaya (*Hylocereus polyrhizus*) is widely known for number of health benefits including cholesterol-lowering effects, protection against diabetes and cancer. This paper presents the study on extraction of phenolic compound and antioxidant activity from Red Pitaya peel using ultrasonic-assisted extraction (UAE) process with water as a solvent. The amount of phenolic compound and antioxidant activity in the extracts were studied at different sonication temperatures (25-80 °C) and ultrasonic powers (200-600 W) with constant frequency of 50 kHz. The extracts were analysed using High-Performance Liquid Chromatography (HPLC) and 1, 1-Diphenyl-2-picrylhydrazyl (DPPH) assay. The results showed that the extractions yield increases with the increases of extraction temperature and power. These changes are probably due to the cavitation activity that occurred during transmission of ultrasonic waves in the solvent. Temperature of 40 °C and ultrasonic power of 200 W recorded most suitable extraction conditions with total phenolic content (TPC) of 2.5084 mg/ml and high antioxidant activity of 4.5052%. The result from this study maybe useful to identify the suitable gradient condition of ultrasonic-assisted extraction and operating conditions to extract high phenolic compound and antioxidant activity from Red Pitaya's peel.

### KEYWORDS

Red pitaya; *Hylocereus polyrhizus*; Antioxidant activity; Ultrasonic-assisted extraction (UAE)

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