

**FUNCTIONAL AND PHYSICOCHEMICAL PROPERTIES AND SENSORY  
ACCEPTABILITY OF FUNCTIONAL WHEAT NOODLES ADDED WITH  
POMEGRANATE (*PUNICAGRANATUM* L.) PEEL EXTRACTS**

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Pomegranate (*Punicagranatum* L.) peel is known to contain abundant amounts of natural antioxidants; hence incorporating the extract of the peel into noodle formulation improves and enhances the functional value of the product. Therefore, this paper discusses the effects of adding different proportion of pulsed ultrasound-assisted extract of *Punicagranatum* L. peel (0%, 0.75%, 1.50%) on the physicochemical and functional properties of white and alkaline (yellow) noodles. The results indicated that the optimum cooking time was shorter in herbal white noodles than in alkaline noodles in comparison with the control. Cooking losses of noodles were all within the acceptable range (4.44% to 6.01%). The noodles' pH decreased with the increased in pomegranate peel extract concentration. The total phenolic contents varied from 159-719 mg GAE/100g, while DPPH free radical scavenging activities (10 mg/mL) showed the highest inhibition when 1.50% of extract were added to the noodles. Even though significant differences were observed in the colour of the fortified white and alkaline noodles, based on Hedonic test, no significant difference ( $p > 0.05$ ) was observed between the overall acceptability of these products with average scores ranging from 5.84 to 6.60; indicating slightly like to moderately like. In term of taste, the fortified white noodle containing 0.75% extract was significantly ( $p < 0.05$ ) more acceptable by the panellists compared to alkaline noodle at the same concentration and the white noodle demonstrated a higher antioxidant potential as well. It can be concluded that the addition of *Punicagranatum* L. peel extract affected the physicochemical and functional properties and sensory acceptability of fortified wheat noodles.

Keywords: Herbal noodles, *Punicagranatum* L., pulsed ultrasound, functional properties, antioxidant potential, DPPH assay

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