

Physico-chemical properties and toxicity of cocoa powder-like product from roasted seeds of fermented rambutan (*Nephelium lappaceum* L.) fruit

ABSTRACT

A novel way to fully utilize rambutan fruit and seed is to ferment peeled fruits followed by drying and roasting, and use the seeds to produce seed powder similar to that of cocoa powder. Hence, the objective of this study was to optimize the roasting time and temperature of rambutan fruit post-fermentation and drying, and to produce a cocoa-like powder product from the seeds. Parameters monitored during roasting were colour and total phenolic content, while seed powder obtained using optimized roasting conditions was analyzed for its physicochemical properties and toxicity. The latter was examined using the brine shrimp lethality assay. Results showed that the roasted seed powder possessed colour and key volatile compounds similar to that of cocoa powder. Besides, the brine shrimp lethality assay indicated that the roasted seed powder was non-toxic. Thus, the fruit, including its seed could be fully utilized and subsequently, wastage could be reduced.

Keyword: Rambutan fruit; Solid-state fermentation; Seed roasting; Seed powder; Physicochemical properties; Toxicity