FACULTY OF SCIENCE
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Title : Jun tea prototype product development by lyophilization

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ABSTRACT

Jun tea is a kind of fermented beverage made by fermentation of tea and honey mixture with lactic acid bacteria and yeast. This project aimed to develop Jun tea powder (JTp) by lyophilization technique. To develop Jun tea product, *Lactiplantibacillus plantarum* FM03-1 and *Saccharomyces cerevisiae* var. *sake* V116 were used as starter cultures for Jun tea fermentation at 30°C for 15 days. Subsequently, fermented products were further prepared in three forms including Jun tea (JT), concentrated Jun tea (cJT) and JTp. All preparations were evaluated their biological activities using the DPPH radical scavenging, Folin–Ciocalteu and agar well diffusion assays. It was found that all forms of Jun tea products possessed antioxidant properties. JTp could inhibit growth of test pathogenic bacteria including *Bacillus cereus*, Methicillin-resistant *Staphylococcus aureus* (MRSA) and *Staphylococcus aureus*. When JTp was kept at various temperatures including room temperature, 4, 25, 37 and 45°C for four weeks, it was found that the DPPH scavenging activity and the total phenolic content was decreased by 28.57 - 60.71% and 5.97 - 15.34%, respectively, while the antibacterial activity was reduced to only inhibited growth of *S. aureus* and MRSA. The JTp obtained had pleasant flavor. Hence, with its antioxidant and antibacterial properties, JTp has a high potential to be further developed to value added products and achieve greater acceptance in the future.

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