

Development, Stability and Sensory Evaluation of a Ready-to-Serve Beverage Incorporating Co-Encapsulated Anthocyanins from *Clitoria ternatea* Flowers

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This study focuses on the incorporation of anthocyanin from *Clitoria ternatea* flower as a natural colorant in the production of a healthy Ready-To-Serve (RTS) beverage. The research explores the impact of incorporating encapsulated and non-encapsulated anthocyanin into RTS beverages and evaluates their shelf life, stability, and final product characteristics. Sensory evaluation tests were conducted on a nine-point hedonic scale with 30 semi-trained panelists. Coconut water based ginger flavored beverage was selected as the most preferred sample. Shelf-life studies revealed that the non-encapsulated anthocyanin drink lasted for only two weeks while encapsulated anthocyanin drink exhibited a shelf life exceeding two weeks. Both RTS beverages stored in brown color glass bottles at refrigerated conditions showed minimal changes in color, brix value, pH value, and anthocyanin content. Encapsulated anthocyanin beverage had a lower pH (3.25) compared to the non-encapsulated one (4.51), indicating greater acidity. Non-encapsulated drink displayed a lower total solid content (10.6) compared to the encapsulated drink (12.6). Encapsulated drink exhibited a higher value for titratable acidity (95 mg/L) than the non-encapsulated one (65 mg/L). According to the findings, the encapsulated soft drink demonstrated better stability, longer shelf life, and distinct characteristics in terms of pH, sweetness, and titratable acidity compared to the non-encapsulated counterpart.

Keywords: *Ready to serve beverages; Blue pea; Anthocyanins; Natural pigments; Coconut water; Encapsulation*

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