

Abstract

Kombucha with *Clitoria Ternatea*: A Functional Beverage with High Antioxidant Potential [†]

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Introduction: Kombucha is a fermented beverage traditionally prepared with green tea and a symbiotic culture of bacteria and yeast (SCOBY), known for its health-promoting properties. Butterfly pea flower (*Clitoria ternatea*), with its vibrant blue pigment, contains bioactive compounds, including anthocyanins and flavonoids, which exhibit antioxidant and calming effects. Its incorporation into kombucha aims to enhance its functional potential, offering a novel formulation with added health benefits and appealing sensory characteristics. **Methodology:** Two kombucha formulations were developed: a conventional version with green tea and a modified version with *C. ternatea* flowers. Fermentation occurred over 3 to 7 days at ambient temperature. Physicochemical parameters analyzed included pH, total soluble solids (°Brix), total acidity, and reducing sugars. Antioxidant capacity was assessed using DPPH and ABTS radical scavenging assays, and total phenolic content was measured using the Folin–Ciocalteu method. **Results:** The *Clitoria*-infused kombucha had a lower pH (3.12) and higher total acidity (174 mEq/L) than the conventional sample (pH 3.74; 71.66 mEq/L). Soluble solids and reducing sugars were similar between samples. Antioxidant activity was notably higher in the *Clitoria*-infused formulation (786.56 µM TEAC DPPH; 1031.47 µM TEAC ABTS) compared to the conventional (522.32 µM DPPH; 1138.17 µM ABTS). Interestingly, the conventional kombucha had a higher total phenolic content (121.33 mg GAE/L) than the *Clitoria* version (12.36 mg GAE/L). **Conclusions:** Adding *Clitoria ternatea* enhanced the antioxidant activity of kombucha, despite lower phenolic content, indicating synergistic effects and potential for functional beverage innovation.



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