

## Determination of authenticity of palmyrah toddy using chemical tests

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Palmyrah toddy is one of the alcoholic drinks traditionally prepared by the fermentation of sweet sap from the young inflorescence of Palmyrah tree (*Borassus flabellifer*). It is a popular drink not only in Northern part of Sri Lanka but also in other parts of the country. It generates a high income for families who make the traditional toddy. There are some adulterated toddy samples available in the local market and can be made by the fermentation of sugar and starch solution. Identification of toddy samples, whether it is pure or artificial is a big challenge as both sweet sap and added sugar contain sucrose, which undergoes fermentation. Hence, this study was focused to identify the authenticity of Palmyrah toddy using qualitative analysis of compounds such as chloral hydrate, paraldehyde and starch and quantitative analysis alcohol content, acidity, Brix, sulfated ash, turbidity, conductivity and yeast count. Genuine toddy samples were obtained from different Palm Development Co-operative Societies. Adulterated toddy samples were collected from the market and artificial toddy samples were prepared in the laboratory using sugar and starch solution. Chloral hydrate and starch were present in the artificial toddy and artificial toddy samples are having significantly higher ( $p < 0.05$ ) alcohol content (5.5 - 6.2 % v/v), turbidity (2025-2511 NTU) and yeast count ( $20.8 \times 10^6 - 25.2 \times 10^6$  cells/mL) than the genuine toddy samples (3.9 - 4.2 % v/v), (798 - 1023 NTU) and ( $15.9 \times 10^6 - 16.5 \times 10^6$  cells/mL) respectively while there is no significant difference between genuine and artificial toddy in Brix, acidity and conductivity. The sulfated ash content of genuine toddy samples was found in the range of 0.45 to 0.52 g/100 mL and this content is significantly lower ( $p < 0.05$ ) in artificial toddy (0.05 to 0.10 g/100 mL). Therefore, chemical analysis could be used to identify the authenticity and the quality of Palmyrah toddy.

**Keywords:** Genuine Toddy, Artificial Toddy, Sulfated Ash, Fermentation

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