

**COMPARARIVE STUDY ON QUALITY CHARACTERISTICS OF  
DIFFERENT PALM TREACLE AND ITS ANTIOXIDANT  
ACTIVITY**

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by  
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## ABSTRACT

Treacle is any uncrystalised syrup made during the production of sugar. The most common forms of treacle are golden syrup, a pale variety, and a darker variety known as black treacle. Black treacle or molasses has a typically strong, slightly bitter flavour, and a richer colour than golden syrup. Black treacle is obtained from palm such as palmyrah, coconut and kithul, which are available from Jaffna market used as the main sweetening agents for cake, curd, tea and coffee. There is a competition for the selection of nutritionally best treacle for the customers. Therefore this research was design to evaluate the best treacle this contained good physico- chemical and nutritional characteristics. Triplicate treacle samples were obtained from one batch of respective production centers and used for the analysis. All the treacle was obeys SLS specifications while there were significant different among the tested parameters between the treacle. Significantly highest( $p < 0.05$ ) total sugar (63.90%) and ash content [0.075( $\pm 0.002$ )] was obtained for palmyrah treacle, while protein content was significantly highest for coconut [0.410 ( $\pm 0.0040$ )] than kithul [0.570( $\pm 0.0120$ )] and palmyrah [0.028 ( $\pm 0.0070$ )]%. Total phenolic content was significantly highest for coconut [0.807 ( $\pm 0.004$ )] while there were no significant different between palmyrah [0.547 ( $\pm 0.001$ )] and kithul [0.545 ( $\pm 0.002$ )] mg/100g. DPPH scavenging ability with the  $IC_{50}$  values of palmyrah, coconut and kithul were 0.0169 ( $\pm 0.003$ ), 0.029 ( $\pm 0.004$ ) and 0.021( $\pm 0.004$ ) respectively. Total phenolic contents exhibited significantly positive correlation (0.79,  $p = 0.011$ ) with the  $IC_{50}$  values of different treacle. The results of this study showed that palmyrah treacle showed highest amount of minerals and antioxidant activity when compared with other palm treacle.

*Key words:* Antioxidant activity,  $IC_{50}$  Value, Total phenolic content,