Effect of processing method on vitamin profile, antioxidant properties and total phenolic content of coconut (Cocos nucifera L.) sugar syrup

ABSTRACT

Coconut (Cocos nucifera L.) sugar is a more nutritious alternative sugar source as compared to sugar palm (Borassus flabellifer) and sugarcane (Saccharum officinarum L.). This work was aimed to investigate the browning index (BI), vitamin profile and antioxidant properties of coconut sap sugar syrups, which were produced by different processing methods: rotary evaporation (RE), microwave evaporation (ME) and open-heat evaporation (OHE). The results obtained showed that coconut sugar syrup produced by RE-60 contained high antioxidant activities [DPPH (36.71%) and ABTS (34.84%), TPC (299.87 mg per 100 g sample) and FRAP (3.74 mm)]. These values were slightly lower than those of ME and OHE. Coconut sugar syrup (RE-60) also contained higher amounts of vitamin C (1587.27 mg L−1), vitamin B1 (97.44 mg L−1) and vitamin B3 (19.84 mg L−1) compared with those of ME and OHE coconut sugar syrups. RE-60 was the best method to produce coconut sugar syrup in a shorter time with lower browning index and higher vitamin contents.