

EFFECT OF WEATHER CONDITIONS AND VARIATIONS OF METHYL p-HYDROXYBENZOATE CONCENTRATION TO CHEMICAL PROPERTIES AND ANTIOXIDANT ACTIVITY OF COCONUT SAP

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ABSTRACT

Coconut sap is the sweet translucent substance that is derived by tapping coconut flowers for 8-12 hours. The chemical properties of coconut sap are considerably affected by weather conditions during the tapping process. Coconut sap contains a number of nutrients which is good for growth of some microorganisms. To maintain the quality of the sap during tapping process, coconut farmers usually add preservative substances, either natural preservative, such as mangosteen peel and jackfruit wood, or synthetic preservative, such as sodium metabisulphite. Methyl p-hydroxybenzoate is one of the common synthetic preservatives utilized to inhibit the growing of yeasts, bacteria and fungi. This research aims to determine the effect of weather condition during tapping process and variations of methyl p-hydroxybenzoate concentration to the chemical properties of the coconut sap. The results showed that the optimum preservative concentration of methyl p-hydroxybenzoate was 160 ppm from coconut sap which was tapped in sunny weather condition. This treatment yielded sap with chemical properties as follows: pH value 6.15, reducing sugar 0.16 g/100ml, sucrose content 18.62 g/100ml, total phenolic 211.70 GAE/100 ml. On the other hand, the antioxidant activity of this treatment was similar to that of addition of 120 ppm methyl p-hydroxybenzoate i.e. 44.33 % RSA evaluated by DPPH method.

Keywords: coconut sap, methyl p-hydroxybenzoate, antioxidant activity