ABSTRACT

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STUDY OF ANTIOXIDANT ACTIVITY AND STABILITY OF EXTRACT FROM THE PEEL AND FLESH OF CEMPEDEK FRUIT (ARTOCARPUS INTERGER (THUNB.) MERR)
(xiv + 61 pages: 11 Tables, 13 Figures, 19 Appendixes)

Cempedak fruit (Artocarpus integer (Thunb.) Merr) is one of the tropical fruits that has potential as an antioxidant because of this presence of bioactive compounds such as flavonoid and phenolic, which give medical advantages over several diseases such as hypertension and cardiovascular. This research was aimed to study the activity and stability of cempedak fruit in terms of pH and temperature stabilities. The fruit was separated into peel and flesh, after which they were extracted using maceration method (for 24 hours) with three different solvents i.e. ethanol (polar), acetone (semi-polar), and hexane (non-polar). The extracts were subjected to several analysis i.e. yield, phenolic content, flavonoid content, and antioxidant activity expressed by IC_{50}. The peel extract obtained using ethanol exhibits the highest of antioxidant activity (55.3±3.49 ppm) and phenolic content (161.6±2.97 mg GAE/g extracts), thus it is the best extract and selected for stability studies. The result showed that pH and temperature influenced antioxidant stability of cempedak peel extract. The antioxidant activity of the extract decreases in pH 9 and pH 11, but it exhibits the greatest stability in pH 5.0 and temperature of 50°C with an IC_{50} value of 21.57±0.85 ppm. Increase of pH reduced the antioxidant stability of extract, but increase of temperature increased the antioxidant stability of extract. The extract also exhibited more stability under a low pH (≤5.0) treatment.

Keyword : Cempedak, Artocarpus integer (Thunb.) Merr, pH, temperature, antioxidant activity
References : 56 (1992-2011)