

ABSTRACT

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THE EFFECT OF PREPARATION AND COOKING LEVEL TO THE ANTIOXIDANT ACTIVITY OF GOURDS

(xiv + 90 pages: 8 tables, 16 figures, and 25 appendices)

Gourds, as a member of Cucurbitaceae family are known to have high phenolic content and antioxidant activities. Different types of gourd may give different antioxidant activity. Indeed, the preparation and cooking level may affect the antioxidant activity of gourd. This research was aimed to evaluate the antioxidant activities of several Indonesia local gourds from Cucurbitaceae family (bottle gourd, chayote, angled luffa). The gourds were extracted successively with three types of solvent having different polarity (hexane, ethyl acetate, ethanol) to find the fraction of each gourd having highest antioxidant activity. One of the gourd having highest antioxidant activity were used for the subsequent treatments in studying the effect of preparation (unpeeled, peeled) and cooking level (uncooked, half cooked, fully cooked) to its antioxidant activity, total phenolic and flavonoid content. The result showed that the ethyl acetate fraction of bottle gourd has the highest antioxidant activity and total phenolic content compared to the other gourds, with IC_{50} value of 375.54 ppm, phenolic content of 63.65 mg GAE/g dry extract, and flavonoid content of 0.52 mg quercetin/g dry extract. Preparation and cooking level affected the antioxidant activity, total phenolic and flavonoid content of bottle gourd, in which unpeeled and fully cooked bottle gourd have the highest result, with 384.19 ppm of IC_{50} value, total phenolic 63.38 mg GAE/g dry extract, total flavonoid 0.44 mg quercetin/g dry extract. It can be concluded that bottle gourd peel contains antioxidant compounds that contribute to the antioxidant activity, and highly possibly it is phenolic compounds. Moreover, cooked bottle gourds have higher antioxidant activity, total phenolic and flavonoid content, but higher cooking level gave no significant increase to its antioxidant activity, total phenolic and flavonoid content.

Keywords: *Cucurbitaceae*, bottle gourd, chayote, angled luffa, antioxidant, peel, cooking

References: 41 (1977 - 2012)