ABSTRACT

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ANTIOXIDANT ACTIVITY OF PROCESSED NONI FRUIT (*Morinda citrifolia* L.) AT DIFFERENT RIPENING STAGES

(xiii + 113 pages: 10 tables, 14 figures, 10 appendices)

*Noni* (*Morinda citrifolia* L.) fruit is one of the fruits that contains antioxidant compounds. This fruit usually consumed as juice, powder, and extract. This study was conducted to determine the antioxidant activity and total phenolic between noni juice and noni powder, to examine the effect of ascorbic acid to antioxidant activity of noni juice, and to determine yield, antioxidant activity and total phenolic extract noni fruit with different methods and solvents. The best sample with the highest antioxidant activity and total phenolic between juice and powder in different ripening stages was chosen for extraction. Unripe, half-ripe, and ripe were ripening stages of noni fruit that used to compare between juice and powder; ethanol, ethyl acetate, and hexane were used as solvent for extraction; and maceration and soxhlet were used as method of extraction. The result exhibited that ripe noni powder has the highest antioxidant activity ($IC_{50}=2620.57 \pm 72.177 \text{ mg/L}$) and total phenolic ($7.76 \pm 0.2188 \text{ mg GAE/g sample}$). Ascorbic acid in noni juice also contributed to the antioxidant activity which in unripe noni juice (41.2%), half-ripe noni juice (91.34%), and ripe noni juice (85.2%). Soxhlet with ethanol solvent was the best extraction method that produced the highest yield ($39.85 \pm 0.65 \text{ %}$) and soxhlet with ethyl acetate solvent has the highest antioxidant activity ($IC_{50}=543.7108 \pm 6.8285 \text{ mg/L}$) and total phenolic ($82.6434 \pm 3.2521 \text{ mg GAE/g sample}$).

Keywords: antioxidant, ascorbic acid, *Morinda citrifolia* L., phenolic.
References: 54 (1977-2014)