ABSTRACT

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"***OPTIMIZATION OF ANTIOXIDANT ACTIVITY FROM RED SKIN MELINJO (Gnetum gnemon* L.*) EXTRACT AGAINST COMBINATION BETWEEN PH AND TEMPERATURE***"
(xiiii + 196 *pages*; 34 *figures*; 22 *tables* ; 32 *appendix*)

Melinjo skin is usually used for making some vegetables, but skin melinjo has not been used optimally. The purpose of this experiment was to determine antioxidant activity in red melinjo skin extract using solvent combination of ethanol and ethyl acetate by ratio 100 : 0, 80 : 20, 60 : 40, 40 : 60, 20 : 80, and 0 : 100, differences in extraction temperature which are room temperature (±26°C), 40°C, and 60°C, and differences in extraction time which are 3, 6, and 9 hour. Antioxidant activity was determined by IC_{50}, phenolic in total, content of vitamin C, color spectrum, and chromatography. The result obtained showed that solvent combination of ehanol and ethyl acetate by ratio 20 : 80 has the highest phenolic in total (11,70 mg GAE/g extract) and low IC_{50} (591,24 mg/g extract). The treatment combination between pH and temperature are used to optimize the antioxidant compound in the best extract which has been selected based on best solvent ratio, the best temperature, and the best time during the process of extraction. This treatment using RSM method which is useful to determine the best treatment that can provide the optimization antioxidant activity from red skin melinjo extract. Combination of pH being used in this experiment were pH 4, 4.75, 5, 6, 7, and 8. Combination of temperature being used in this experiment were 65°C, 75°C, 85°C, and 95°C. The best treatment to optimize antioxidant activity compound was found in extract with pH 4.75 (pH natural extract) and 43.79°C.

Keywords : *antioxidant activity, pH, red skin melinjo, RSM, temperature*

References : 50 (1986-2010)