

ABSTRACT

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THE EFFECT OF pH AND LIGHT TO THE ANTIOXIDANT STABILITY OF RED BEET (*Beta vulgaris*L.) EXTRACT WHICH HAS BEEN UNDERGONE OPTIMIZATION PROCESS

(xvi+128 pages : 13 Tables, 15 Figures and 19 Appendix)

The red color of red beet has been popular for its benefit because it is usually related to its antioxidant content. The purpose of this experiment is to obtain the best red beet extract based on its antioxidant activity. There are three stages of this experiment. The first stage is to determine the most suitable solvent to obtain the red beet extract with highest antioxidant activity. The solvent that is used in this experiment is combination of ethanol and ethyl acetate. The ratio which is used is 100:0, 80 : 20, 60 : 40, 40 : 60, 20 : 80, and 0 : 100. The second stage is to determine the best extraction temperature and extraction period to obtain the extract with highest antioxidant activity using Response Surface Method. The third stage is to know the effect of pH and light to its stability. There are six pH that are used in this experiment, which are natural, 4, 5, 6, 7, and 8. The first result shows that the most suitable solvent for red beet extraction process is ethanol. The second stage result shows 40°C for 6 hours is the best extraction temperature and extraction period. The last result shows that pH and light has an ability to influence the stability of antioxidant activity of red beet extract. the best pH to maintain the stability of red beet extract is pH 4. The LED light is the most suitable light because it only gives a little decline in antioxidant activity.

Keywords : antioxidant activity, light, pH, red beet, RSM

References : 31 (1989 – 2010)