ANTIOXIDANT STABILITY TESTING ON LIQUID AND POWDER *Eichhornia Crassipes* EXTRACT

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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Water hyacinth or *Eicchornia crassipes* is a free-floating aquatic plant and is easily found in swamps or rivers, especially in Indonesia. The rapid growth of water hyacinth can disrupt the aquatic environment, thus water hyacinth is categorized as one of the worst weed. The challenge is not on how to eliminate the number of this weed, but on how to take advantage by the presence of this water plant. Water hyacinth is known to contain high phenolic content and antioxidant activity. Water hyacinth was extracted using 96% ethanol/water with mass to solvent ratio of 1:30 at 3 different temperatures (30℃, 40℃, 50℃). Spray drying was conducted to produce extract powder with the addition of encapsulating agents. The stability of liquid and powder extract was compared based on the TPC and antioxidant activity. The highest TPC was obtained from extraction at 30℃ whereas the highest antioxidant activity was obtained from extraction at 50℃. In powder extract, the highest TPC and antioxidant activity was obtained from powder with ratio 2:1 of TSS to encapsulating agents. The stability was performed under different storage conditions; room and refrigerator temperature. The degradation of TPC was faster in room temperature compared to refrigerator temperature.

Keywords: Water hyacinth, Eichhornia crassipes, Total Phenolic Content, Total Antioxidant Activity, Stability Testing

DEDICATION

I dedicate this works for my beloved parents for always being the driving force for my study and future career.

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