OPTIMIZING THE ANTIOXIDANT ACTIVITY OF KELAKAI (*Stenochlaena palustris)* EXTRACT THROUGH MULTIPLESTAGE EXTRACTION PROCESS

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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Kelakai is known as traditional remedy for treating several diseases, such as fever, anemia, and stimulate the production of breast milk for breastfeeding mother. Instead of those benefits, *kelakai* also proved has several kinds of antioxidant properties. Therefore, extracting antioxidant properties from *kelakai* is one way to discover the amount of antioxidant activity contained in *kelakai*. In this research, the multiple-stage extraction process was done in order to optimize the antioxidant activity. Moreover, based on data obtained from single stage extraction process, the most suitable condition was discovered. It turns out that the use of milled sample in water solvent for 12 hours at 44^{o}C produce the highest antioxidant activity, which is 4599.76 ppm to inhibit 50% of DPPH.. Referred to the experiment, the antioxidant activity of the extract which gained from multiple-stage was higher than from single stage. Multiple-stage process has proven the increasing of antioxidant activity up to 72.43%, which is needed 2020 ppm to inhibit 50% of DPPH.

Keywords: kelakai, leaching, multiple-stage extraction process, antioxidant activity, particle size distribution

DEDICATION

I dedicate this works for my beloved families who have support, sacrifice, and always love me unconditionally.

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