

**ANTIOXIDANT ACTIVITY OF *KALAKAI (Stenochlaena Palustris)* EXTRACT
IN ICE CREAM AS LOW TEMPERATURE FOOD MODEL**

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July 2017

Revision after the Thesis Defense on 17th July 2017

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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Kalakai (*Stenochlaena. palustris*) extract was used to develop the ice cream. The antioxidant activity of the extracts and its stability over process and storage were evaluated through various antioxidant assay including DPPH assay, Folin-Ciocalteu assay and aluminum chloride colorimetric method. In general, the leaves of *S. palustris* had a significantly higher antioxidant activity ($p < 0.05$) than the branches and approximately, 0.10 mg/ml *S. palustris* leaves extract was able to develop antioxidant activity (IC_{50}) with suitable iron content (< 0.3 mg/l) that could be used to produce ice cream without affecting the sensory properties of the ice cream. In addition, the high phenolic and flavonoid content also suggest the more compounds that were capable to act as an antioxidant. The result of the stability test also suggested the ability low temperature storage and processing in maintaining the stability of the antioxidant activity of the extract ($p > 0.05$) over processing and storage. Thus, this strengthen the feasibility of *S. palustris* to be used as a potential functional food ingredient that is low cost and easily accessible with an antioxidant activity that is beneficial to increase the quality of food produced including in low temperature food like ice cream.

Keywords: antioxidant, Stenochlaena palustris, DPPH assay, phenolic, flavonoid, Folin-Ciocalteu assay,, aluminum chloride colorimetric method, iron.



DEDICATION

I dedicate this works for God and my family for their unfading love and support, for my future and my fellow friends.



ACKNOWLEDGEMENTS

First and foremost, I would like to express my outmost gratitude to God, my Almighty King and Father for His faithful support, blessing and guidance throughout my life especially during the thesis work. I would also like to thank all of my family member and friends who are one of my main support team, for their emotional and financial support during the completion of this work.

Moreover I would like to express my sincere gratitude to my Advisor, Ms. Della Rahmawati, S.Si, M.Si and Co-Advisor, Ms Maria D.P.T. Gunawan Puteri, S.T.P, M.Sc, Ph.D for their patience, help, and advices during the last four months of my thesis work. Thank you for believing in me in finishing this thesis work up to the very end. Finally I would also thank all the other lecturers and laboratory assistants namely Mr. Irvan Kartawiria, Mr. Ir. Abdullah Muzi Marpaung, Mr. Tabligh Permana, Ms. Stefani Djunaidi, and all other lecturers that I could not name one by one, for being a great lecturers and supporter.

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