

**DEVELOPMENT OF A NEW ANTIOXIDANT DRINK  
FROM COFFEE SILVERSKIN**

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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

### DEVELOPMENT OF A NEW ANTIOXIDANT DRINK FROM COFFEE SILVERSKIN

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This study aimed to transform coffee silverkin, the main waste product of coffee roasting that had a substantial amount of antioxidant, into a new antioxidant drink. The study started by observing the basic of the ground coffee silverskin, followed by various extraction ratio trials to find the suitable ratio. The resulting extract was analyzed and showed an adequate level of phenolic and antioxidant, yet bitter in taste. The formulation was started by determining the ingredients and their constraints needed to improve the overall taste and antioxidant stability, followed by a screening stage to find the correlation between the factors and responses. The optimization was done by the help of Design Expert Software, which generated two optimum formulas that matched the target and later decided based on affective test. The final formula consisted of 4.36% silverskin, 5.83% sugar, 0.22% chocolate flavor and 1.00% cyclodextrin (w/v). The analysis result showed that the new coffee silverskin drink had 1219.08 mg/L of phenolic and 54.00% of DPPH• inhibition with a better stability compared to the pure extract. Based on sensory analysis, the overall taste of the new drink had also gone through a significant improvement that led to a high acceptance level.

*Keywords: Coffee Silverskin, Phenolic, Antioxidant, Formulation,  $\beta$ -cyclodextrin.*



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## DEDICATION

I dedicate this work to my daily coffee.



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