

**ANTHOCYANIN EXTRACTION IN PURPLE HEART (*TRADESCANTIA
PALLIDA*) LEAVES; THE IMPACT OF DRYING AND EXTRACTION
CONDITIONS TO ANTHOCYANIN STABILITY**

By

Fiona Destine
11905011

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SWISS GERMAN UNIVERSITY
The Prominence Tower
Jalan Jalur Sutera Barat No. 15, Alam Sutera
Tangerang, Banten 15143 - Indonesia

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STATEMENT BY THE AUTHOR

Name of Student : Fiona Destine
Student ID : 1-190-5011
Faculty : Life Sciences and Technology
Study Program : Food Technology
Date of Defense : 14 January 2025
Thesis Title : ANTHOCYANIN EXTRACTION IN PURPLE HEART
(*TRADESCANTIA PALLIDA*) LEAVES; THE IMPACT OF
DRYING AND EXTRACTION CONDITION TO
ANTHOCYANIN STABILITY

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Fiona Destine
(Name of Student)

Approved by:
Date: 28 December 2024

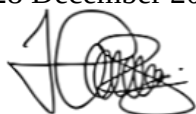


Dr. Ir. Abdullah Muzi Marpaung, MP.
(Thesis Advisor)



Maria Gunawan Puteri, M. Sc, Ph.D.
(Thesis Co-Advisor)

Acknowledged by:
Date: 28 December 2024



Dr. Hery Sutanto, S.Si., M. Si.
(Dean of Faculty of Life Sciences and Technology)

ABSTRACT

ANTHOCYANIN EXTRACTION IN PURPLE HEART (*Tradescantia pallida*) LEAVES; THE IMPACT OF DRYING AND EXTRACTION CONDITIONS TO ANTHOCYANIN STABILITY

By

Fiona Destine

Dr. Ir. Abdullah Muzi Marpaung, MP, Advisor
Maria Gunawan Puteri, M. Sc, Ph.D, Co-Advisor

SWISS GERMAN UNIVERSITY

This study looked at the colourful anthocyanin pigments from the extracts of the purple heart (*Tradescantia pallida*) leaves. Based on the research of Shi (1992) and Baublis (1994), anthocyanin of *Tradescantia pallida* underwent complete deacylation faster within 40 minutes at room temperature, resulting in a significantly higher yield of the pure pigment. The anthocyanin structure of the deacylated major pigment was similar to *Zebrina pendula* which was identified as cyanidin-3,7,31-triglucoside. The pigments of *Tradescantia pallida* extract remained stable under light exposure and showed greater stability compared to other anthocyanin, due to the anthocyanin structure that has B-ring substitution at pH 4 and above. One of the challenges in anthocyanin extraction was affected by the choice of extraction method. For example, the maceration method with water bath shaker at 75°C for 35 minutes will result in a non-dense concentration and sheer colour, and due to this, the anthocyanin extracts cannot be used for stability tests. While using another maceration method at room temperature resulting in a concentrated or thick colour. This research was separated into three parts. Firstly, the dried leaves of *Tradescantia pallida* were obtained using the air-drying method at three temperature variations (60°C, 70°C, 80°C). Secondly,

extracting the anthocyanin from the dried leaves of *Tradescantia pallida* with two different method using four ratios of solvents (1:1, 1:3, 3:1, and 1:0) with two solvents (0.0001 M HCl in water and 96% Ethanol Food Grade) and three extraction time (24h, 48h, 72h). Thirdly, the stability of the anthocyanin extract of *Tradescantia pallida* was tested using four different pH levels (pH 4, pH 5, pH 6, and pH 7). Overall, the study highlighted that drying temperature affected the properties of the dried leaves, including the moisture content. The selected temperature to obtain the dried leaves of the purple heart was 80°C, which resulted in a moisture content below 5%. Extracting the dried leaves at room temperature identified the best solvent of 1:1 and produced the highest anthocyanin yield. The stability of the extracted anthocyanins of *Tradescantia pallida* remained stable at pH 4, 5, and 6. However, the anthocyanin at pH 7 produce an inconsistence intensity. The research results conclude that *Tradescantia pallida* has the potential as a natural colorant, offering a red color that can be applied in the development of food and beverages in the food industry.

Keywords: Tradescantia pallida, Anthocyanin, Color Intensity, Browning Index, Violet Index

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DEDICATION

I dedicate this work to God, my family, my friends, and Dylan, who support and accompany me throughout this journey.

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