THE EFFECT OF OXIDATION METHODS ON NATURAL COLORANT FROM AVOCADO SEED EXTRACT AND THE RELATION BETWEEN ITS TOTAL PHENOLIC CONTENT AND ANTIOXIDANT ACTIVITY

By

Andara Destrilia
11505034

BACHELOR'S DEGREE
in

FOOD TECHNOLOGY
FACULTY OF LIFE SCIENCE AND TECHNOLOGY

SWISS GERMAN UNIVERSITY
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July 2019
Revision after Thesis Defense on [July 15th 2019]

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

THE EFFECT OF OXIDATION METHOD ON NATURAL COLORANT FROM AVOCADO SEED ECTRACT AND THE RELATION BETWEEN ITS TOTAL PHENOLIC CONTENT AND ANTIOXIDANT ACTIVITY

By

Andara Destrilia
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The increase of avocado production and application in food industry makes the seed becomes waste. However, avocado seed can be utilized and very potential as a new source for natural colorant due to enzymatic oxidation reaction. The purpose of this research was to evaluate the effect of oxygenated-heat treatment as oxidation methods on natural colorant from avocado seed extract and the relation between its total phenolic content and antioxidant activity. Before oxygenated-heat treatment, the pH of avocado seed extract was adjusted into pH 7, 8, 9 and 10. And then, temperature used during oxygenated-heat treatment was at 50°C, 75°C and 90°C. Increasing pH from 7 to 10 affecting the increase of color intensity. However during oxygenated heat treatment, color formation only effective for sample with pH 7 with heating exposure 90°C. The inconsistency relation between color intensity and total phenolic content, as well as between color intensity and antioxidant activity makes there was no relation between color intensity and total phenolic content as well as between color intensity and antioxidant activity. It indicated the color was also formed by another compound, not only phenolic compound and also not only compound that could act as antioxidant agent. During storage, at pH 7 and 8, the color intensity still increase with the highest increase was sample at heating temperature 50oC. However, the sample became cloudy

and slimy at several days of storage. In pH 9, heating made the color more stable an in pH 10 even without heating, the color was already stable. During storage, the relation between color intensity, total phenolic content and antioxidant activity was the same which is there was also no relation between color intensity and total phenolic content as well as between color intensity and antioxidant activity during storage.

Keywords: Avocado Seed, Color, Oxidation, Oxygenated-Heat Treatment.

DEDICATION

I dedicate this works for my parents,
partner and friends for their love and support
during this research was conducted.

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