EVALUATION OF PROPERTIES OF SUGAR-FREE YOGHURT WITH MUNG BEAN AND EDAMAME AS PROTEIN SOURCES

By

Daniel Agustian

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SWISS GERMAN UNIVERSITY
EduTown BSD City
Tangerang 15339
Indonesia

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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.

Daniel Agustian

Student ` Date

Approved by:

Dr. rer. nat. Filiana Santoso

Thesis Advisor Date

Dr. Dipl.-Ing. Samuel P. Kusumocahyo

Dean Date

ABSTRACT

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By

Daniel Agustian
Dr. rer. nat. Filiana Santoso, Advisor

SWISS GERMAN UNIVERSITY

Plant-based legumes are known to have health-enhancing nutrients due to their high protein content. Therefore, they are potential to be used as protein sources in yoghurt production replacing cow's milk. However, the different proteins in legumes and cow's milk are expected to affect the yoghurt properties. This study was aimed to investigate the effect of utilization of legumes in yoghurt fermentation. Two legumes (edamame and mung bean) were chosen for the study. Moreover, in order to develop a sugar-free yoghurt product, three artificial sweeteners were applied in this study as sucrose replacer. It was found that the yoghurt appearance was significantly influenced by the type of protein source, particularly the texture and appearance of cow's milk yoghurt were better than those made from legumes. From analysis of pH value, acid value and viscosity, yoghurts with combination of fructose and xylitol were the best samples. All properties of cow's milk and legumes yoghurt samples lied within the standard range, with the exception of viscosity. The viscosity of all yoghurt samples were far below the standard, with the viscosity of cow's milk yoghurt slightly higher. This might be caused by insufficient fermentation time. The sensory analysis showed that mung bean yoghurt was highly desirable in terms of taste and odour. Cow's milk yoghurt scored better in appearance & texture and colour. Interestingly, the overall acceptance for cow's milk and mung bean yoghurts was similar. This offered the potential usage of mung bean to replace cow's milk in yoghurt.

Keywords: Yoghurt, Mung Bean, Edamame, Artificial Sweeteners

DEDICATION

I dedicate this thesis works for my beloved parents.

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In the end, I hope that the result of my research will be useful of everyone who read this book. Your comment, recommendations and criticism are welcomed.

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