

1ST EDITION

E-EXTENDED
ABSTRACT

**INTERNATIONAL
AGROTECHNOLOGY
INNOVATION
SYMPOSIUM (i-AIS)**



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INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS)

19 June 2023

Faculty of Plantation and Agrotechnology UiTM Cawangan Melaka Kampus Jasin

Published 2023
Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA Cawangan Melaka Kampus Jasin
77300 Merlimau Melaka.

E-EXTENDED ABSTRACT of the INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS) (1st EDITION)

Mode of access Internet

<https://sites.google.com/view/ais2023/publication>

Perpustakaan Negara Malaysia Cataloguing -in – Publication Data

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ABOUT FACULTY OF PLANTATION AND AGROTECHNOLOGY

The Faculty of Plantation and Agrotechnology was established in 2010 at Universiti Teknologi MARA (UiTM). The mission of the faculty is to play the vital role of producing well-trained professionals in all areas of plantation and agriculture-related industries at national and international levels.

Bachelor of Science (Hons) Plantation Technology and Management is a three-year program that strongly emphasizes the various aspects of Production Technology, Management, and Information Technology highly sought after by the agricultural and plantation sectors. Students in this program will be fully trained to serve as professionals in the plantation sector and related industries. They will have ample opportunities to fulfill important positions in the plantation industry such as plantation executives. This program provides a strong balance of technology and management courses essential for the plantation industry such as management of plantation crops, soil fertility, plantation management operation, plantation crop mechanization, and agricultural precision. As an integral part of the program, students will be required to undergo industrial attachment to gain managerial skills in the plantation industry.

The faculty is highly committed to disseminating, imparting, and fostering intellectual development and research to meet the changing needs of the plantation and agriculture sectors. With this regard, numerous undergraduate and postgraduate programs have been offered by the government's intention to produce professionals and entrepreneurs who are knowledgeable and highly skilled in the plantation, agriculture, and agrotechnology sectors.

PREFACE

International Agrotechnology Innovation Symposium (i-AIS) is a platform to be formed for students/lecturers/staff to share creativity in applying the knowledge that is related to the world of Agrotechnology in the form of posters. This virtual poster competition takes place on the 1st of December 2022 and ends on the 8th of January 2023. This competition is an assessment of students in determining the level of understanding, creativity, and group work for the subject related to agrotechnology and being able to apply it to the field of Agrotechnology. The i-AIS 2022 program takes place from December 1, 2022, to January 8, 2023. The program was officiated by the Dean of the Faculty of Plantation and Agrotechnology, namely Prof. Madya Ts. Dr. Azma Yusuf. The program involves students from faculties of the Faculty of Plantation and Agrotechnology (FPA) and HEP participating in i-AIS 2022, namely, the Faculty of Education and Pre-Higher Education. This program involves the UiTM student and some of the non-UiTM students which come from the international university and the local university. Two categories are contested, namely UiTM and non-UiTM. To date, students from these programs have shown remarkable achievements in academic performance and participation in national as well as international competitions.

This competition is an open door for the students and lecturers to exhibit creative minds stemming from curiosity. Several e-content projects have been evaluated by esteemed judges and that has led to the birth of this E-Poster Book. Ideas and novelties are celebrated, and participants are applauded for displaying ingenious minds in their ideas.

It is hoped that such an effort continues to breed so that there is always an outlet for these creative minds to grow.

Thank you.

Dean
On behalf of the Organizing Committee
Conference Chair
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<http://fpa.uitm.edu.my>

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Abelmoschus esculentus FACIAL MASK

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ABSTRACT - *Abelmoschus esculentus* pod contains polyphenolic compounds, carotene, folic acid, thiamine, riboflavin, niacin, vitamin C, oxalic acid, and amino acids. *Abelmoschus esculentus* seed contain polyphenolic compounds, mainly oligomeric catechins and flavanols derivatives, protein (i.e., high lysine levels), and oil fraction (in particular, its derived oil is rich in palmitic, oleic, and linoleic acids). This study aimed to formulate a sheet mask of Lady Finger extract, and examined its moisturizing effect on volunteers' skin. This was the new innovation, which build the new beauty treatment product using *Abelmoschus esculentus*. *Abelmoschus esculentus* was combined with the cold powder using the method that was stated by the author. There have many benefits of *Abelmoschus esculentus* in the beauty treatment product as stated by the author in the journal below. *Abelmoschus esculentus* are suitable to be the main ingredient due to the benefit that has been stated by the author in the journal.



Keywords: *Abelmoschus esculentus*, skin care, carotenoids, polyphenols, phenolic acids, flavonoids, tannins.

INTRODUCTION

It's crucial to have healthy skin because poor presentation could make you feel less confident. Moisturizers are frequently used to smooth out wrinkles, eliminate fine lines, and moisturize the skin, all of which can enhance a patient's social life and psychological pleasure. [1] Dry skin symptoms are an impression of skin dryness, including visual and tactile alterations to the skin and sensory component changes. These signs include a feeling of dryness and discomfort, including tightness, soreness, itching, and tingling. Dermatoses that cause dry skin can be efficiently treated with moisturizers, which stop the cycle of dry skin while keeping the skin smooth. Vitamins C, E, and A as well as carotenoids, polyphenols, phenolic acids, flavonoids, and tannins are among the substances found in plants that exhibit antioxidant action. [1] One of these plants is the *Abelmoschus esculentus*. Because phenolic compounds can lower free radicals in the human body and prevent degenerative diseases, they are safer than synthetic antioxidants and are present in *Abelmoschus esculentus*. With an IC₅₀ value of 24.50 ppm for the ABTS method and a value of 27.15 ppm for the DPPH method, *Abelmoschus esculentus* exhibits significant antioxidant activity. The purpose of this study was to create a new product with *Abelmoschus esculentus* as its primary ingredient that would be as successful as possible for skin care. In this study, a cold powder known as Bedak sejuk made from *Abelmoschus esculentus* will be introduced.

MATERIAL AND METHOD

Material

Ingredient	Description
Okra 	1 Using healthy and quality okra
Cold powder 	2 Obtained from a local cold powder manufacturer in Watson

Method

1. Choose *Abelmoschus esculentus* which is healthy and of high quality.
2. *Abelmoschus esculentus* that has been chosen will be cleaned and finely sliced.
3. Then dried at a temperature of 40 to 50 °C in a vacuum dryer.
4. When the *Abelmoschus esculentus* is completely dried, it is crushed and ground into a fine dust.
5. To separate coarse from fine particles, the filtering process uses a 180 m size.
6. *Abelmoschus esculentus* powder is created once everything is done.
7. After that, 25 g of *Abelmoschus esculentus* powder will be combined with cold powder (15 g)
8. Finally, *Abelmoschus esculentus* cold powder is produced.

RESULTS AND DISCUSSION

Results

Table 1: Nutrition Contents in Okra Extract

Amount Per	95g
Vitamin C	36%
Iron	3%
Vitamin B6	10%
Vitamin D	0%
Calcium	7%
Cobalamin	0%
Magnesium	13%

Skin Look Younger

Abelmoschus esculent contains antioxidants that can fight skin damage caused by free radicals. The main antioxidant content of okra is polyphenols. Vitamin A, vitamin C, iso-queretin, and flavonoids in okra can also act as antioxidants. The *Abelmoschus esculentus* cold powder consists of vitamins A and C, which help to prevent the aging appearance of wrinkles on the skin, make the skin look firmer, and increase its elasticity of the skin.

Makes Skin Glowing

Abelmoschus esculentus cold powder contains nutrients such as vitamin C, vitamin A, folate, potassium, and protein, which can help you repair skin damage. Healthy cells can make the skin look more radiant and glowing.

DISCUSSION

Water-soluble vitamins are more easily absorbed by the body and are ideal for balancing dehydrated skin. Therefore, the *Abelmoschus esculentus* cold powder needs to dissolve with a little water, then be applied to the face. The study shows that *Abelmoschus esculentus* cold powder helps reduce freckles and acne and makes skin moister.

FIGURES



Figure 1: *Abelmoschus esculentus* Cold Powder



Figure 2: *Abelmoschus esculentus* Cold Powder Treatment

CONCLUSION

Abelmoschus esculentus can be used as the ingredient of skincare such as cold powder with a combination of rice. [3] It is a very effective treatment for skin treatment because of the content of Vitamins C, E, and A as well as carotenoids, polyphenols, phenolic acids, flavonoids, and tannins. *Abelmoschus esculentus* also can be an ingredient for other skin care because of the content that had been stated before this. It is a new opportunity to make a new product by using the *Abelmoschus esculentus* as the main ingredient. Future research should be carried out to find out the new uses of *Abelmoschus esculentus* not only in beauty treatment but there are many uses of *Abelmoschus esculentus* such as diabetes treatment.

REFERENCES

- [1] Marbun, N., Fhitriana, S., Leny, L., & Daeli, Y. (2022). Preparation and evaluation of moisturizing sheet mask of Lady Finger (*Abelmoschus esculentus* (L.) Moench) extract. *Journal of Drug Delivery and Therapeutics*, 12(3), 14-19.
- [2] Adreshina, P. (2018). Pengaruh proporsi pati bengkung (*pachyrhizus erosus*) dan ekstrak okra (*abelmoschus esculentus*) terhadap hasil jadi masker untuk perawatan kulit wajah berminyak dan berjerawat. *Jurnal Tata Rias*, 7(2).
- [3] Syfullah, K. (2017). Character Association and Diversity Analysis of Okra (*Abelmoschus esculentus* L. Moench) (Doctoral dissertation, Department of Genetics and Plant Breeding, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh).



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