

3rd EDITION

E-EXTENDED

ABSTRACT

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



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INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS)

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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
Universiti Teknologi MARA
Faculty of Plantation and Agrotechnology
<http://fpa.uitm.edu.my>

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NATURAL LIQUID SOAP

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ABSTRACT- The purpose of the study is to develop a novel safe and effective natural liquid soap by incorporating *Andrographis paniculata* extract powder as a mixing material into the liquid soap. Green chiretta, *A. paniculata*, is well known for its medicinal characteristics that can treat diseases, and its cultivation has been marketed by being turned into a food for health, beauty, and daily use. Several journal publications were reviewed, experiments were conducted in the laboratory, and the texture and foam features of the natural liquid soap that we developed were observed. According to research, Andrographolide (AG), the major active component of the herb *Andrographis paniculata*, has been utilised for many years for anti-inflammatory and antibacterial infections, according to research. As a result, we developed a new natural liquid soap that includes *A. paniculate* extract powder as one of its ingredients.

Keywords: Hempedu bumi (*Andrographis paniculata*), Natural Liquid Soap

INTRODUCTION

This experiment was conducted in the laboratory because we aim to develop a new natural liquid soap containing *A. paniculata*. Furthermore, the goal of this research is to develop a safe and effective natural liquid soap that combines *A. paniculata* as one of its ingredients. *Andrographis paniculata* is famous among practitioners of traditional Chinese, Ayurvedic and Greek medicine where the type of *A. paniculata* is widely used in the medicine. The goodness of the *A. paniculata* must be utilized in the best possible way. Ordoyo and Sepe (2019) investigated the antibacterial activity of liquid hand soap with *Piper aduncum* leaf extract. The physicochemical properties of the liquid soap were examined to determine its quality, efficiency, and cleansing properties. The study, however, discovered that *P. aduncum* crude extract is ineffective as an antibacterial component in the production of liquid hand soap.

MATERIALS AND METHODS

1. Palm oil
2. Potassium hydroxide (KOH)
3. Distilled water
4. Essential oil

To make the liquid soap paste.

1. 200 g of distilled water placed in a 2000 ml measuring jug. 66 g of potassium hydroxide (KOH) was added to the jug.
2. 300 g of palm oil added to the jug and stirred using a mixer hand blender continuously until it became lumpy.
3. The paste was left for 24 hours and kept in an airtight bottle.

To dilute the liquid soap paste to become liquid soap.

1. 100 g of liquid soap paste placed in 1000 ml beaker. The 300 g of distilled water added to the beaker.
2. The 1000 ml beaker was placed on the hot plate, and a PTFE magnetic stirrer was put into the beaker for stirring continuously and well-mixing of the two materials for 1 hour.
3. The mixture was left overnight.
4. 1 gram of *Andrographis paniculata* powder extract and 10 ml of essential oil added to the mixture that was left overnight.
5. The mixture mixed by using a hot plate and PSTE magnetic stirrer for 20 minutes.
6. The liquid soap was put into a 500 ml bottle.

RESULTS AND DISCUSSION



Figure 1: Liquid Soap Paste

The liquid soap paste is composed of palm oil, water, potassium hydroxide (KOH), and 100% natural components. This liquid soap paste has a yellowish orange in color, a slightly oily, lumpy texture, and a palm oil aroma.



Figure 2: The Volume of Form Produced from the Liquid Soap

As in the diagram above, it is shown that the volume of foam formed is foamy. Besides, soft in texture after washing hands with water.

This liquid soap is a soft and healthful homemade natural soap. Formulated in such a way that it does not dry out the hands even when used regularly. Moreover, free from hazardous chemicals. However, incorrect storage and the absence of preservatives cause natural soap to lose its scent more quickly and to be less durable. This liquid soap without preservatives is only usable for two years.



Figure 3: The mixture mixed using a hot plate and a PSTE magnetic stirrer

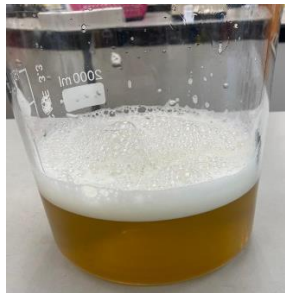


Figure 4: The Final Look of the Natural Liquid Soap

3. CONCLUSION

This experiment was performed successfully, and the objective was achieved. The significance of this work is that we were able to produce natural liquid soap and innovate the liquid soap by combining *Andrographis panicula* extract powder, which is herbaceous with numerous benefits but is not widely known as one of the liquid soap materials.

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