3rd EDITION

E-EXTENDED

ABSTRACT

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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CHIRETTA CREAM

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ABSTRACT - Green Chiretta or hempedu bumi, which has long been used to treat inflammation and infection, has been demonstrated to have anti-bacterial efficacy against a variety of bacteria in extract form. The purpose of this research is to look into the anti-bacterial characteristics of Green Chiretta against escherichia coli(e.coli) and to manufacture Green Chiretta into cream to determine its anti-bacterial qualities

Keywords: Hempedu Bumi, Green Chiretta, Antibacterial, escherichia coli(e.coli), Skin infection, Cream.

INTRODUCTION

Plants generate a wide range of bioactive chemicals, making them a valuable source of many sorts of medication. Many medicinal plant species are used in traditional medicine across the world to treat skin disorders caused by fungus and bacteria. Andrographic paniculata (*A. paniculata*), locally known as Hempedu Bumi or Green Chiretta, is a plant which can be found in abundance in Malaysia. Plant-based medication has the potential to be a viable alternative to antibiotics if properly investigated and documented. The objective of this study was to see if cream formulations containing A. paniculata have anti-bacterial action against escherichia coli.

MATERIAL AND METHOD

Material:

Raw Shea butter, Virgin coconut oil, Virgin Olive oil, *Andrographis paniculata* (hempedu bumi), bunsen burner, beaker, container, tripod stand, wire gauze, spatula, steel sieve

Method:

The leaf and twig samples of A.paniculata were obtained from Merlimau, Malacca, Malaysia in the month of December 2022. The aerial part of plant samples was thoroughly washed with tap water three times to remove any dirt before being sterilized with distilled water.The cleaned leaves and twigs were then dried in oven set at 40’C.The dried samples were grounded using an electric blender and stored in an airtight container. Then the sample were sifting into a fine powder. After that, melting shea butter using a bunsen burner until the shea butter become liquid. Next, virgin coconut oil, virgin olive oil, *andrographis paniculata* (hempedu bumi) was added into the beaker and stir all the ingredient then, put into the container.

RESULTS AND DISCUSSION

RESULTS

The result that we got from our innovation by using the weeds that can be found at the herbal shop or planted at house which is 'Hempedu bumi' weeds is the Chiretta cream. To produce the Chiretta cream, the ingredients that had been required were extract of 'Hempedu bumi' which was the main ingredient, shea butter, virgin olive oil and virgin coconut oil. The extract of 'Hempedu bumi' was very significant because it was also known as herbs and can treat wounds. Other than that, the shea butter needs to be melted on the hotplate with temperatures between 170°C to 175°C approximately by referring to the melting point or process. The extract of 'Hempedu bumi' that was put in the mixture was about 15 g in each one. Furthermore, this cream also had been experimented using *Escherichia coli* (E.coli) bacteria to test the effectiveness and antibacterial of all the ingredients that were being used. The extract of 'Hempedu bumi' had a bitter odour because this weed was usually being used for herbal products. Our Chiretta cream was obtained from all natural or pure ingredients that give many benefits for our body and health. Besides that, the purpose of this cream was to treat eczema and wounds by using the natural ingredients that were 100% safe for humans.

DISCUSSION

According to this project, the higher the concentration of the extract in the cream, the greater the anti-bacterial activity. This is because Chirata has blood purifying qualities due to its antioxidant, antibacterial, and anti-inflammatory characteristics. It eliminates impurities from the blood and hence helps to control skin ailments due to its Tikta (bitter) taste and Pitta balancing effect. It is also particularly effective in treating skin eruptions, acne, pimples, eczema, boils, and scabies by reducing rashes, inflammation, redness, itching, and burning sensations.

TABLE, IMAGE AND FIGURE

Figrure 1 : Chiretta Cream

Table 1: Andrographis Paniculata Extract

Types Andrographis Paniculata Extract	Liquid	Powder
Texture cream	smooth and light	smooth
colour	light green	dark green
Effectiveness for eczema and wound	Yes	Yes
Antibacterial	Yes	Yes

CONCLUSION

To summarise, eczema is a challenging and complex illness for both the patient and the physician. Simple measures, such as avoiding allergens and irritants and using emollients and topical corticosteroids, are the cornerstone of treatment and are beneficial in the vast majority of patients. Green Chiretta has been clinically shown to cure skin problems such as eczema and acne. Chiretta decoction may aid in the treatment of skin rashes. Chiretta may also help with burning feelings, dry skin, and itchy skin. This product can help many eczema and skin problem patients.

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