

4TH 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  
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## TABLE OF CONTENTS

1.	COPYRIGHT .....	i
2.	ORGANIZING COMMITTEE .....	ii
3.	STUDENT COMMITTEE .....	iii
4.	EDITORIAL BOARD .....	iv
5.	ABOUT FACULTY OF PLANTATION AND AGROTECHNOLOGY .....	v
6.	PREFACE .....	vi
7.	TABLE OF CONTENTS .....	vii
8.	GOLD AWARD.....	1
9.	VACUUM LOOSE FRUIT COLLECTOR.....	2
10.	3 IN 1 COCOA POST-HARVEST MACHINE .....	6
11.	THE UTILIZATION OF GREEN BANANA (MUSA ACUMINATA X MUSA BALBISIANA) FLOUR IN THE DEVELOPMENT OF KEROPOK LEKOR .....	9
12.	THE UTILIZATION OF DATE PALM FRUITS POWDER IN THE DEVELOPMENT OF PASTA.....	18
13.	THE UTILIZATION OF JACKFRUIT SEED FLOUR IN THE DEVELOPMENT OF MALAYSIAN FISH CRACKER.....	25
14.	THE USE OF BAMBOO SHOOTS IN THE DEVELOPMENT OF PLANT- BASED PATTIES.....	38
15.	SMART FERMENTATION SHALLOW BOX .....	44
16.	PHYTOCHEMICAL AND BIOLOGICAL ANALYSIS OF MEDICINAL PLANT, <i>Apium graveolens</i> (CELERY): A REVIEW .....	48
17.	CALCIUM BIOFORTIFIED SCHIZOPHYLLUM COMMUNE AND ITS RELATION TO STUNTED GROWTH AMONG CHILDREN .....	51
18.	REAL-TIME TEMPERATURE AND HUMIDITY MONITORING OF STINGLESS BEE COLONIES USING IOT TECHNOLOGY .....	59
19.	THE ANTIBACTERIAL PROPERTIES OF SCHIZOPHYLLUM COMMUNE AND THEOBROMA CACAO L .....	63
20.	PALM OIL CARTON PACKAGING .....	69
21.	SILVER AWARD .....	73
22.	COCOA SOLAR DRYER.....	74
23.	SUSTAINABLE PLANT WASTE MANAGEMENT (BANANA PEEL POWDERED FERTILIZER) .....	77
24.	ANANAS COMOSUS SMART SENSOR GRADING .....	79
25.	FRUIT SANITIZE POSTHARVEST .....	82
26.	LOOSE FRUITS REMOVER.....	87
27.	PADDY-TECH MACHINES .....	93



28.	OIL PALM CREAMPUFF .....	96
29.	BUD-KIT AS A CLASSROOM LEARNING TOOL.....	101
30.	PORTABLE PEPPER COLLECTER .....	105
31.	SOLAR RICE THRESHER.....	107
32.	THEOBROMA TECHNOLOGY (DRYER).....	113
33.	BRONZE AWARD.....	116
34.	SOLAR SEED DRYER WITH AUTOMATIC TRACKING .....	117

# SUSTAINABLE PLANT WASTE MANAGEMENT (BANANA PEEL POWDERED FERTILIZER)

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**ABSTRACT** - The research is about to make organic fertiliser from banana peels. After eating a banana, we typically discard the peel, but the peel can actually be used as fertiliser for plants. Therefore, it focused on how to utilize banana peel waste as a useful source rather than disposing of it as municipal solid waste. The process started with collected the banana peel, drying, blend into powder and applied it into the plant. Utilization of banana fruit peel powder as a fertilizer can help in reducing load on dumping site and can be used as pH regulator for soil, improving soil morphology, and fulfils requirement of micronutrients.

**Keywords:** organic fertiliser, banana peel, micronutrients.

## INTRODUCTION

Banana peel is rich in vitamins and minerals, including potassium, which is one of the three essential nutrients plants need to stay healthy. According to Slack (2022), there are four main ways to use your banana peels in the garden, including a water trick and a technique for chopped peels. Banana peels are good for gardens because they contain 42 percent potassium (abbreviated to its scientific name K), one of the three major components of fertilizer along with nitrogen (N) and phosphorus (P) and shown on fertilizer labels as NPK. In fact, banana peels have the highest organic sources of potassium (Barbano, 2020).

We tend to throw away the peel after finished eating the banana. However, the peel can be used as a fertilizer to our plant. We used it as a organic nutrients where the banana peel turns into powder form. Furthermore, tons of food are wasted every year and dumped in the trash, which is a huge problem nowadays. In order to create compost that can be utilized as organic fertilizer, we may use all the food waste. By doing so, we both contribute to society's economic well-being and protect the environment from food waste's harmful effects. The research is about to produced the powder of organic fertilizer from banana peels and it may goes directly to the roots and helps the plants immediately.

## MATERIAL AND METHOD

The equipment used are banana peels, tray, blender and scissor. The procedure involved are (1) Used any banana peel. Take and use only the required amount; (2) Cut the banana peel into smaller pieces. Then, place on top of a clean tray; (3) Place the tray under the sunlight for a couple of days. Wait until the banana peels all dry and crispy; (4) Put the dry banana peels into the blender and blend them into fine powder; (5) Use one tablespoon of the fine powder and apply them on the topsoil of any crops or mix with the potting soils.

## DISCUSSION

This product is zero cost to be made and eco-friendly to be used. It improved soil's nutritional value by releasing nutrients into the soil to feed plants. Increasing the growth of microorganisms that accelerate the growth of plants and roots. Aside from that, the solid waste generated by the banana feed was reduced.

## CONCLUSION

You can simply bury banana peels near your plants where they will release their nutrients as they break down. Utilization of banana fruit peel powder as a fertilizer can help in reducing load on dumping site and use it as a beneficiary. The banana peel powdered fertilizer can be used as pH regulator for soil, improving soil morphology, and fulfils requirement of micronutrients. Besides, it protects the plants from various diseases and strengthens the stem which prevents the plants from falling and also resists the plant from drought. Since we still eat banana fruit, there is no cost in producing this environmental friendly fertilizer.

## REFERENCES

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