

1ST EDITION

E-EXTENDED
ABSTRACT

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



COPYRIGHT

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

ORGANIZING COMMITTEE

Program Advisor	:	Ts. ChM. Dr. Wan Zuraida Wan Mohd Zain
Program Director	:	Dr. Noer Hartini Dolhaji
Program Secretary	:	Nurul Izzatiafifi Ismail
Program Treasurer	:	Nur' Amira Hamid
Program Registration	:	Siti Aisha Na'illa Che Musa
Program Judging	:	Nur Atiqah Zaharullil Nur Wajihah Mohd Naw
Program Webmaster	:	Ts. Dr. Siti Fairuz Nurr Sadikan
Program Certificate	:	Nurul Wahida Ramli
Program Human Contribution	:	Nur Nabila Huda Aziz
Program Protocol	:	Siti Nur Atikah Abu Samah
Program Publication	:	Dr. Mohd Zuli Jaafar
Program Logistic	:	Muhammad Nuruddin Mohd Nor
Program Technical	:	Khawarizmi Mohd Aziz

STUDENT COMMITTEE

Mohammad Ali Kamaruddin
Nurul Huda Nabilah Ramlee
Siti Nor Arifah Abd Halim
Nuraliah Aqilah Ayuni Mohamed
Mohamad Khairul Haziq Mohamad Fauzi
Nur Wajihah Mohd Nawawi
Mohammad Hafis Ayub
Aiman Haziq Arifin
Amyra Hazwani Ghazali
Mohamad Syamil Mohd Nor
Mohammad Najmuddin Suriani
Nur Syafiqah Aina Azmi
Muhammad Aidil Ikhwan Kamarudin
Nur Muhammad Ameiriqwan Ahmad Faiza
Muhammad Faiz Zulazmi
Mohd Azri Aiman Zulkifli
Diana Asykin Kamaruddin
Nor Elin Balqis Ismail
Nursyasya Razalil
Muhammad Ismadanial Rozi
Muhammad Amir Asyraf Azman
Mohamad Zairy Zailan

EDITORIAL BOARD

Patron

Prof Ts. Dr. Azhan Hashim @ Ismail

Advisors

Prof Madya Ts. Dr. Fazleen Abdul Fatah

Ts. ChM. Dr. Wan Zuraida Wan Mohd Zain

Dr. Noer Hartini Dolhaji

Editors

Dr. Mohd Zuli Jaafar

Dr. Wan Zuraida Wan Mohd Zain

Dr Noer Hartini Dolhaji

Muhammad Aidil Ikhwan Kamarudin

Abdul Quddus bin Puteh

Nurul Izzatiafifi Ismail

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>

TABLE OF CONTENTS

1. COPYRIGHT	2
2. ORGANIZING COMMITTEE	3
3. STUDENT COMMITTEE	4
4. EDITORIAL BOARD	5
5. ABOUT FACULTY OF PLANTATION AND AGROTECHNOLOGY	6
6. PREFACE	7
7. TABLE OF CONTENTS	8
8. GOLD AWARD	1
ABELMOSCHUS ESCULENTUS FACIAL MASK	2
ECO ENZYME	6
COFFEE GROUNDS AS A GROWING MEDIUM FORMUSHROOM	8
HYDRAULIC RAM PUMP	11
DIETARY MUSHROOM NOODLES	15
JACKY FLORENTINE	19
AMARANTHUS VIRIDIS - BASED GRAIN SNACK BAR	22
PALLET FROM COCONUT HUSK.....	30
ORGANIC COCO PEAT POT SUPLEMENTED WITH BLACK SOLDIER FRASS (BSFF)	35
MANAGING WASTE PRODUCT OF PALM OIL MILL (DECANTER CAKE) AS COMPOST.....	40
9. SILVER	44
MULTIFUNCTIONAL TOOLS	45
MANAGING WASTE PRODUCT OF AVOCADO (SKIN & STONE) AS INK/DYE	48
HARVERTING: EASY SEPERATE	51
BRIQUETTES OIL PALM FRONDS.....	54
REPLACEABLE SHOE SOLES.....	58
EXTRACT OF NATURAL DYES FROM BUTTERFLY PEA (<i>CLITORIA TERNATEA</i>) TO MAKE A MARSHMALLOW CUBE	61
DIY SPRAY NEEM LEAVES PROTECT PLANTS FROM INSECT	68
HAND SANITIZER FROM FRUIT WASTE	71
MANAGING WASTE FROM DURIAN (DURIAN PEELS) AS FOOD PALLET FOR LIVESTOCK	77
PORTABLE ELECTRIC POWER FEIST TILLER	79
10. BRONZE	83
CENTRALISE FRUIT NETTING SENSOR.....	84
BIO – BRICKS.....	86

MULTIFUNCTIONAL TOOLS

1

Muhammad Syakir Bin Mohd Ali¹, Ahmad Azizul Bin Azman¹, Aliff Daniel Bin Shamsul Baharin¹

¹*Faculty of Plantation and Agrotechnology, Universiti Teknologi Mara, Malaysia*

Corresponding author e-mail: Aliffdaniel197@gmail.com

ABSTRACT - Weeds are plants that grow in areas where they are not wanted. One of the biggest obstacles farmers around the world has to face is weed management (Korres et al., 2019). Weed can affect plant yield and growth due to competition between sunlight, water, and nutrient. For example, according to (Hasanuzzaman et al., 2021), in wheat field, a maize is seen as weed since it interferes the growth and development of wheat. Thus, any unwanted plants or weeds need to be removed before it affects the agriculture production. Moreover, drainage also plays an important role for agriculture production and environment (Castellano et al., 2019). Drainage is an artificial drain system created in every plantation to protect the crop from flood and overwatering. For example, when there is raining season, the crop without drainage will suffer and dead due to drowning with water and flood. However, crop with drainage will safe due to the water are being led to other location such as nearest river and pond. So, the drainage can prevent the plantation from flooding and save plant from drowning. This shows that, drainage is also contributing to agriculture environment and production. Now, the innovation created is multifunctional tools that can remove weed, improve drainage and plowing the soil. This innovation can contribute on reducing working time, helping farming activity to become easier and safe environment.

Keywords: Multifunctional tools, Tools, Drainage, Weeds

INTRODUCTION

The name for the innovation is multifunctional tools. It is invented to help farmers with their farming activity such as drainage maintenance and plowing work. Moreover, it can also reduce time used in farming activity. In addition, it safe for environment and save energy. For helping farmers with their farming activity, some farmers still using the old method to remove weed which is using hand picking and mini tools (Korres et al., 2019). So, with this innovation, the weeding activity will be easier for the farmers. Next, it can also be used for drainage maintenance. This is due to after some time, the drainage will clog with water and some weeds and plants. (Castellano et al., 2019). By using this tool, this issue can be overcome. Moreover, for plowing work, some farmers still using hoe to plow the soil (Korres et al., 2019). This innovation can make the plowing work easier. In addition, the time used in farming activity can also be reduced. It is because our tools can be used to make three works with only one item. Furthermore, it is safe for the environment and save energy.

MATERIAL AND METHOD

Materials

Tire, scrap metal, bicycle handle, rake, bold and nut, chisel, and scoop.

Method

1. Firstly, wheelbase is used to initially set the wheels in place. Then scrapers and scoops are welded to the handle on the road to attach them.
2. Second, drilled a hole in the iron rod and secured the wheel with a nut.
3. Next, use a nut to secure the wheels to the holders and iron rod.
4. Lastly, in order to attach the rake and scoop, weld on the iron rod, with one iron being welded in the rod's center. The scoop's final welding is completed by fastening them with a nut so that they can be pulled out and combined with another tool that performs a different job. The employee will find it simpler to use.

RESULTS

After this innovation tested, its proven that the tools can reduce workers time and labor, make farming activity become easier, save energy and safe for environment. Therefore, there is also recommendation which is about financial. If there is a party prepared to contribute financially, this innovation can be improved, and the outcome will be of higher quality.



Figure 1

DISCUSSION

This invention is suggested for a fresh approach to weeding. Additionally, it needs to be treated to a degree that is appropriate for reuse in industry. With the help of our technology, it will be simpler for the farmers to do their maintenance activity. Because it is a repurposed object, the tools utilized in the project are already available. For instance, it is simpler to chop the grass or weeds and also plowing when a rake is used in conjunction with a rod. In addition, tools like scoops and chisels that are connected by an iron rod are simple to use and convenient. The drainage maintenance activity will be easier to do. In addition, it can save time and be less exhausting. So far, people who use the project stand to benefit. The materials utilized in this innovation is only recyclable materials that can reduce costs for these projects. Because they may be used again, recyclable materials can benefit the community rather than just being squandered.

REFERENCES

- [1] Castellano, M. J., Archontoulis, S. V., Helmers, M. J., Poffenbarger, H. J., & Six, J. (2019).
- [2] Sustainable intensification of agricultural drainage. *Nature Sustainability*, 2(10), 914–921. <https://doi.org/10.1038/s41893-019-0393-0>
- [3] Hasanuzzaman, M., & Practices, M. (n.d.). *Agronomic Crops* (Vol. 2).
- [4] Korres, N. E., Burgos, N. R., Travlos, I., Vurro, M., Gitsopoulos, T. K., Varanasi, V. K., Duke, S. O., Kudsk, P., Brabham, C., Rouse, C. E., & Salas-Perez, R. (2019). New directions for integrated weed management: Modern technologies, tools and knowledge discovery. In *Advances in Agronomy* (1st ed., Vol. 155). Elsevier Inc. <https://doi.org/10.1016/bs.agron.2019.01.006>



الجامعة
UNIVERSITI
TEKNOLOGI
MARA

Fakulti
Perladangan dan
Agroteknologi

