4TH EDITION

E-EXTENDED

ABSTRACT

INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS)

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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.

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

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PADDY-TECH MACHINES

Awangku Irfan Haqimie Bin Awang Abdul Ghani [1]; Sailfan Bin Sultan [2]; Muhammad Afiq Afdhal Bin Abdua[3,]

[1]*Faculty of Plantation and Agrotechnology, Universiti Teknologi Mara (UiTM), Malaysia*

Corresponding author e-mail: Irfan.haqimie40@gmail.com

ABSTRACT - Rice and paddy, Malaysia's two most important food crops, are at the center of the country's efforts to achieve food self-sufficiency. Why is rice considered to be the most valuable food crop in Malaysia? Rice is the primary source of caloric intake for most people. Paddy agriculture is the primary source of income for forty percent of the country's farmers. The regulations governing paddy and rice in Malaysia are intended to provide a steady price for farmers, a consistent profit margin for business owners, and a consistent supply of rice for the general public. The purpose of this study is to persuade rice farmers to adopt our product, which has a number of benefits that paddy plantation users may take advantage of. In the process of milling the rice after harvest, our method not only makes husking simpler, but it also makes the milling process simpler. As part of our program, cutting-edge equipment will be provided to Malaysian farmers so they may better expand the paddy business. Processing of the paddy after harvest is aided by this. A robust fuselage, a safety protection system, an expansion hopper, and a 220kilowatt power machine are all included in our product.

Keywords: rice, paddy, milling, post-harvest process, husk and machine

INTRODUCTION

Rice is not only an essential food source but also a significant economic driver in the country of Malaysia. Due to the significance of the rice business, the government has placed a focus of its attention on the industry. Rice has just been recognised as the crop that is most vital for ensuring the nation's continued access to sufficient food supply. Rice's social, economic, and political relevance, which includes the elimination of poverty, has led to the grain's recent acknowledgment as having significant importance.

Since rice and paddy are the most important staple foods and food crops in Malaysia, the government of Malaysia has focused its strategy on achieving self-sufficiency in rice and paddy production. This is because rice and paddy are the most important food crops in Malaysia. Malaysia will continue to take proactive and progressive steps to support the development of the paddy and rice sector throughout the entirety of the Eleventh Malaysian Plan (2016–2020) and the National Agro-Food Policy (2011–2020). Both of these plans cover the period of time from 2016–2020. On the other hand, it is anticipated that the effects of climate change will make it more difficult to increase paddy yields and achieve food security in the future. [Case in point:] [Case in point:] Comparing the production rate of paddy plantations in Malaysia utilising the conventional approach with the rate at which our product is produced is the purpose of this research. We are highly committed to the idea that our product will offer some values to the post-harvest process for whoever uses this equipment because we have upgraded them with some cutting-edge machinery that will be of great utility in the future. The primary advantages of using this product are that it makes the post-harvest process easier, it speeds up the harvesting process, and it increases the amount of crop produced annually. In the interest of assisting smallholder paddy farmers in increasing the quantity of paddy they produce; our target market is smallholder paddy farmers.

MATERIAL AND METHOD

Paddy-Tech Utilizing machinery during the post-harvest processing of paddy can make the work simpler. After the paddy has been harvested, it is going to be put into the slashing intake so that it may be chopped. The grains are going to be isolated from the other constituents in this procedure. The piece that has previously been chopped away will be separated even more with the help of the tiller outlet in the next step. After this step, the grains will be sent into the rice separator to be processed further. In this stage of the process, the grain will be removed from the husk in a technique that is broken down into many steps. At this point in the process, the paddy is going to be gently shaken in order to separate the grain from the husk. After the process of separating the husk has been completed, the husk that has been separated will be sent to the husk outlet. When the bag is full, an additional sack will be manually inserted, and the grain will continue to be loaded into the bag in the same way as before until it is full. This method will be carried out once again until all of the harvested paddy has been used in the process that is being carried out by our machinery.

RESULTS AND DISCUSSION

First and foremost, as compared to the more conventional methods, the quality of rice that can be grown by smaller farmers with the help of this product is going to be much improved. In terms of the product's quality, the rice grains will not be affected if smallholders use this product. This is due to the fact that the husk and grains are not completely separated when the older, more conventional approach is used. The farmers are compelled to do the same procedure several times, which not only consumes a lot of energy but also takes a very long time and ruins the grains. It is clear from all of this that the conventional techniques of harvesting are not nearly as effective as the current technologies. Because of this, we developed innovative technologies to provide assistance to farmers in the process of improving their yield.

Paddy-Tech Machines are more suitable and efficient than the old traditional method of separating the husk and grains because by using our products, farmers can increase grain yields, resulting in a significantly higher annual income than when using the old traditional method. Customers may also profit from our capacity to cut labour costs, which is not the only advantage of adopting our goods.

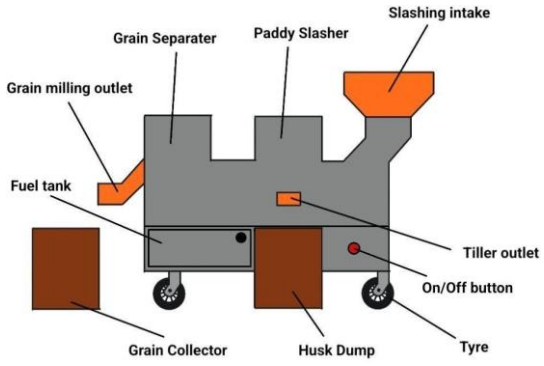

Figure 1: shows our product in 2D and detail of the product

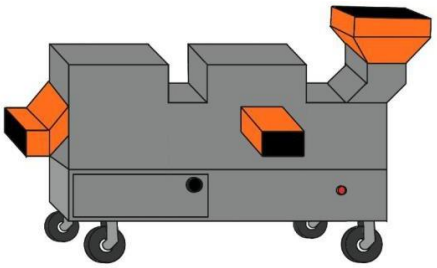

Figure2: Shows Paddy Tech In 3D

CONCLUSION

In conclusion, paddy plantations continue to play a significant part in the upkeep of Malaysia's economic sector. Paddy plantations in Malaysia have the potential to increase production while also making a significant contribution to the development of local farmers. Food safety and the integrity of the food chain will both improve as a result of increased production in the paddy industry in Malaysia.

We have high hopes that our innovation will assist a large number of farmers in both increasing the quantity of paddy they harvest and improving the overall quality of the rice they produce. We think that the use of our product will provide Malaysia an advantage over other nations in Asia and allow it to become the continent's leading paddy grower.

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e ISBN 978-629 -97220-6-9

9 786299 722069

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Fakulti Perladangan dan Agroteknologi

INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM

ais2023.fpa@gmail.com