2ND 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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CSAVA PULL

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ABSTRACT - Casava planting practice in one of the common crops planted in Malaysia. Although the casava industry is nothing comparable to another major crop but it is still important towards the cultivators in this area. To the date, there are no efficient technologies or tools that can be used to harvest the plant. The only way to do it by digging manually by using hoes. Realizing this matter, NaNaHa group has come up with innovation to effectively harvest the cassava in order to cope with certain problems that are faced before by the traditional method. The innovation will help in reducing the labor need, labor cost, management cost and on field cost.

Keywords: casava, harvesting, tools, innovation, machine

INTRODUCTION

From our research, there is still no convenient way in harvesting these cassava crop. The most common way to harvest these cassavas are by using hoes and in mini cases by using mini tools or by pulling it out using their own energy manually. This tedious way of harvesting cassava is no longer practical since the development of new tools and technologies that way more practical and easier to be use. As such, we found there is a potential market for our newly and innovative product in this country and maybe even globally. The creation of this innovation will surely change the old landscape of cassava cultivation.
NaNaHa group has created an innovation to assist with the work on harvesting process of cassava in the field. The product is known as the 'Csava Pull' which is a newly improved product that will provide the best and absolute solution for cassava farmers in order for them to be able save energy, time and even labour cost. This innovation allowed the farmer to effectively allocate the limited resources such as labour and money towards a better use such as maintenance and postharvest process. The right allocation of resources will help to improve the whole operating system in the field, making it more effective and efficient.

Objectives

Csava Pull is a product or innovation that supposedly makes an improvement toward cassava harvesting process. The innovation that makes will be focusing on three major aspects of the harvesting process. The first improvement of the innovation in the harvesting process is the better allocation of labour since by using this product can reduce the number of workers. The second improvement will be the reduction of harvesting time since the workload burden can be reduced since the worker will not have to dig manually. Last but not least, Casava Pull will make the job easier and less energy consumed, not like manually digging.

MATERIAL AND METHOD

Csava Pull build

The innovation named Csava Pull is to provide assist when we decided to pull out and harvest the tapioca or cassava plant. The Csava Pull is made from stainless steel, which enables us to continue harvesting even in wet conditions. In addition, the Csava Pull is also equipped with 2 solid rubber tires. Equipping solid rubber tyre to the harvester may enable the user to transport the pulled cassava plant with ease. Besides, solid rubber tires are also the most suitable to be used on soil, as the tire produces less resistance compared to others. Furthermore, it also featured a pedal and hoe-claw, which connected via hydraulic system. The hoe-claw is operated using a hydraulic system, as when the pedal is stepped on, the hoe-claw will lift the cassava plant. Finally, in order to reduce the load burden by the hoe-claw, it is equipped with a holder. Holder provides support as it will hold the cassava plant by its stem.

Method

First, we thrust the Csava Pull hoe-claw into the base of the cassava plant. Second, we placed the holder near the stem of the cassava plant. Third, we then stepped on the pedal, giving enough pressure that able to lift the cassava plant out of the soil. Lastly, we move the lifted cassava plant and place it on the side.

DISCUSSION

This machine was the first such product in Malaysia. There is no other place in Malaysia that sells this cassava mechanical machine. The cost for this Csava Pull was around RM 250. This product uses stainless steel to prevent this machine from rust. This tool is featured with a pedal that uses a hydraulic system which if the pedal is stepped on, the tapioca or cassava tree will be pulled out easily without less use of energy rather than manually using hand or using a hoe to pull it out. This product will reduce the need for energy by the farmers to harvest the cassava. Besides, it will help to increase the productivity of the cassava farmers since they did not need a long time to harvest a cassava tree.

CONCLUSION

Csava Pull will be changing the whole landscape of cassava harvesting process. Manual digging to harvest the cassava from the ground is no longer reliable and effective. Csava Pull benefits by reducing energy used for harvesting thus increasing the farmers harvesting productivity. Harvesting cassava plants can be done in such a short period of time. In order to get efficient in the process new innovation will be needed and Csava Pull is one of the innovative tools that can achieve that goal.

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