1ST EDITION

E-EXTENDED
ABSTRACT

INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS)

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Faculty of Plantation and Agrotechnology UiTM Cawangan Melaka Kampus Jasin

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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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CENTRALISE FRUIT NETTING SENSOR

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ABSTRACT - Durian is renowned as the king of the fruit. Each year durian is highly sought by both local and foreigner. The damage durian will rot easily contributing to yield losses. The work burden of searching and collecting the falling fruit, cleaning the debris, classification according type and grade, and weighing the fruit proof the hardship in production, data keeping and marketing. Due to this, we have come up with new innovation to solve the problem. This innovation using the sensor combine with safety net to automatically record the data from the failing durian such as plot of falling, type, weight and time of falling. It also will notify the collector on whereabouts the fruit exact location. The net is use to ensure the durian does not fall to the ground and split open and the fruit is clean from dirt and leaves.

Keywords: Harvesting, Netting, Sensor, Fruit, Internet of Think (IoT)

INTRODUCTION

Centralize Fruit Netting Sensor is a product that ensure the quality of the fruit while efficiently record the data and ease the fruit collection. The sensor will help to alert the collector to collect the fruit as soon as it fell. The net that equip with movement sensory will alert and record in the system of the location/site of the falling, weight and time. The net also will provide with extra safety to ensure the fruit does not damage from the impact unlike falling directly onto the land. This system will help reduce the time for collection and efficiently store the data for grading purpose.

MATERIAL AND METHOD

This product is suitable for fruit farmers such as durian, coconut and so on. This is because to prevent the fruits from falling on the ground which can cause the quality of the fruit to be affected such as rotten fruit, broken fruit and so on. The diameter of this product is 10m. With the size, this product is not very large and it is not too small for the fruit farmers. Centralize Fruit Netting Sensor uses polypropylene rope as a type of rope material and the rope thick is 10mm. With the thickness and width of the size of this net, the product is able to withstand a load of 100 kg at a time. Centralize Fruit Netting Sensor is equipped with quality and advanced sensor technology. The outer layer or cover of the sensor is made using a hard and strong plastic type. It is also resistant to heat and water resistant. The sensors use a special computer system that continues to be detected and data such as weight, quantity and location of the fruit continue to be entered into the farmer's database system. The size measure for each such sensor is 5cm X 5cm. A 10m net serves as the main component of our technique. We used an O-ring as a hole rope at the net's end point to secure it to the brunches tree. The wire sensor should be installed at the net and made to cross two other wire sensors. Attach a box receiver sensor to the net's centre. All wire sensors should be connected to the box receiver sensor.

RESULTS AND DISCUSSION

Based on the survey that has been created, 73.3% respondents agree that centralise fruit netting sensor are suitable to apply at any fruits plant. The reason why the product are suitable to apply is because of the function itself that want to protect the fruit quality, protect the fruit from hitting the ground and the design it not specific to any plant but more accurate to Durian crop because the risk of damage for Durian is high when it hit the ground.

In the same survey, we also stated the question about the centralise fruit netting sensor are easier the harvesting process. Most of the respondent are agree with that feel the product will help them in the harvesting process. The reasons are because the user easy located which one plant have fallen fruits and the risk loss of fruits are reduced unless the area has been robbed. Then, the user of this product will alert on the fallen fruits, especially on the night and when we are not at the farm.

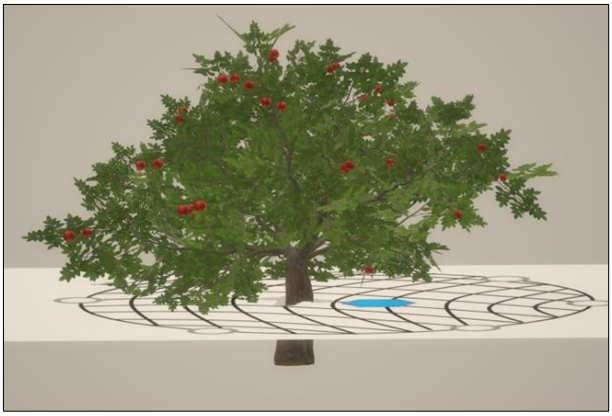

Figure 1: 3D model of netting sensor application

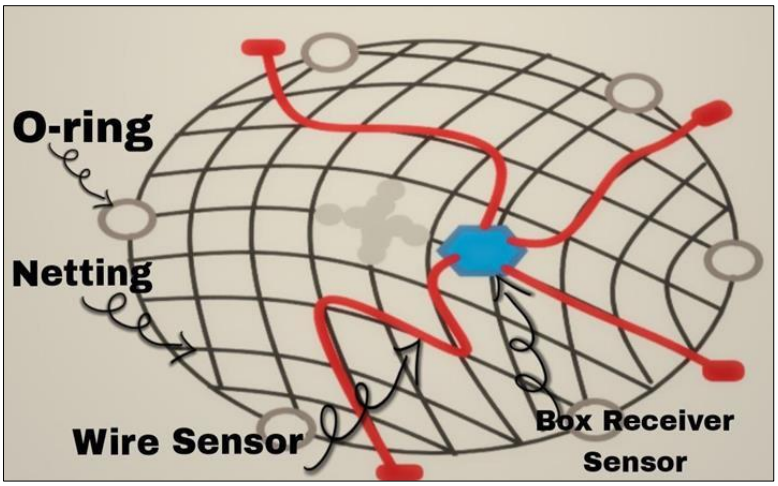

Figure 2. Label The Detail of Product

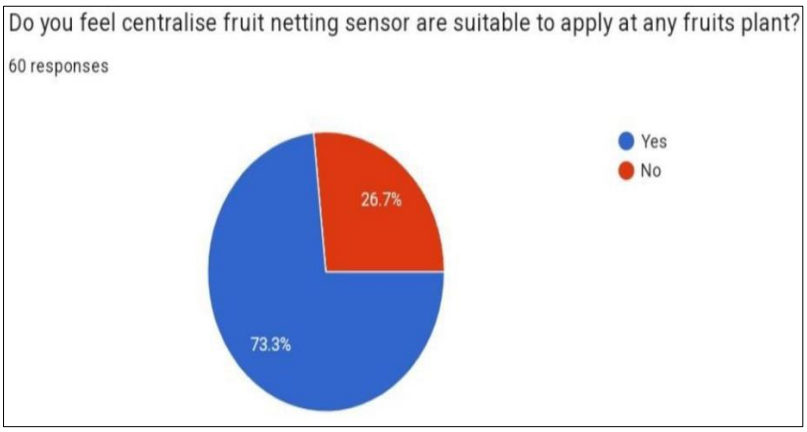

Figure 3: The Above Pie Chart Showing That Majority 73.3% Respondent Are Feel It Suitable to Apply at Any Fruit Plant

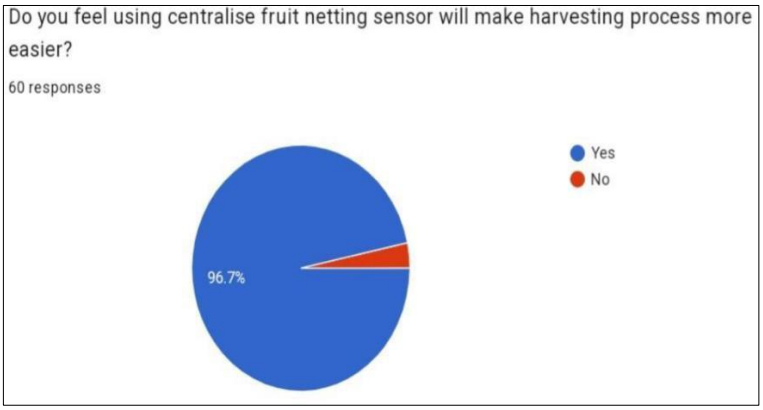

Figure 4: The Above Pie Chart Showing That Majority 96.7% Respondent Are Feel It Make the Harvesting Process Easier

CONCLUSION

Centralize Fruit Netting Sensor is the best solution that will ensure the fruits are in good quality and easy to harvest. Therefore, we can assume that Centralize Fruit Netting Sensor which has advance technology features will help people who are in needed. To sum up, our Centralize Fruit Netting Sensor will ease consumers as it will bring numerous benefits for consumers.

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