

3rd 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
<http://fpa.uitm.edu.my>

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Utilization of Eco-enzyme promoting growth and production of Kembang Telang plant (*Clitoria ternatea L.*)

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ABSTRACT - *Clitoria ternatea L.* which is commonly known ' Kembang Telang plant' or ' butterfly pea' is a climbing vine bearing purple and belonging to Fabaceae family. The research aims to investigate the effectiveness of Eco-enzyme in promoting growth and production of Kembang Telang plant as the research design was completely randomized with two factors. For the first factor shows the concentration of Eco-enzyme (K1= ¼, K2=0.5%, K3= 0.33%) while second factor shows regulated dropping rate, (T1 =slow drop, T2=medium drop, T3= quick drop). The parameters observed plant height, number of leaves and leaf width. The objective of this study is to show the effectiveness of Eco-enzyme in promoting growth of Kembang Telang plant and its production. As for results, it shows on how Eco-enzyme react to growth and production of Kembang Telang plant while showing the effect on parameters of plant height, number of leaves and leaf width. The gives of unreal influence on the parameter of leaf width. The best response of Eco-enzyme administration was 0.01 concentration.

Keywords: Eco-enzym, Kembang Telang, Plant parameters, Organic waste, Agriculture waste.

INTRODUCTION

A huge amount of agricultural waste ingredients comes from vegetables and fruit waste as it can be processed into a multipurpose Eco-enzyme liquid. About 60 % of urban organic waste comes from vegetables and 40% comes from waste as it is relatively uniform in type and easy to handle. Generally, organic waste contains at least 60% of the ingredients and the rest is inorganic waste. The manufacture of Eco-enzyme from organic waste is needed as it shows an effort in management of organic waste.

As for Eco-enzyme, organic compound in complex solution from fermentation process of kitchen waste materials from vegetables waste and fruit peels. Normally, liquid in environmental field used in liquid waste treatment, lake water purification, and soil quality. In reducing the usage of synthetic chemicals which are harmful to human health and environment, creation of Eco-enzyme commonly used as fertilizer and biopesticides.

Drip irrigation has been chosen for provision of water and nutrients to the plant because it gives water at a little time. Drip irrigation provides water slowly so it can absorb more optimally for plants according to plant needs.

MATERIAL AND METHOD

Materials

The materials used were seeds of Kembang Telang plant (*Clitoria ternatea L.*), Eco-enzymes, plant infusion and growing media (soil, water).

Methods

This research used a completely randomized design (CRD). The treatment used in this research were: Treatment A

K1: Concentration 1%

K2: Concentration 0.5%

K3: Concentration

0.33% Treatment B

T1= Slow drop

T2= Medium

drop T3=

Quick drop

Kembang Telang plant was planted in polybag capacity 5 kg. Watering was conducted every day using plant infusion in accordance with the specified field capacity which was 360 ml/polybag.

MAKING OF ECO-ENZYME

1. 2 kg of molasses, 6 kg of organic waste from pineapples, bananas and papaya, 20 liters of water with a ratio (1: 3: 10), and container size 35 liters.
2. 2 kg molasses + 20 liters of water stirred in a container while cut into small pieces pineapple, banana and papaya fruit waste (3cm). Add the waste fruits into the container.
3. Then close tightly so that no air enters. Provide a bottle that has been filled with water only 1/2 part as a space to release the gas produced from the container. Use a hose so the gas flow from the container to the bottle.
4. Let stand for 3 months so that the fermentation process occurs perfectly and produces good eco enzymes. A good eco enzymes will produce the aroma of wine.
5. Perform filtering to produce eco enzymes, and its ready to use.

RESEARCH PARAMETERS

Plant height (cm) – Measured from the base of stem above the soil surface to end of growing point of the plant.

Number of leaves- Number of leaves obtained by counting fully developed leaves.

Width leaf- Leaf width obtained by measuring widest leaf in each treatment using a measuring tape.

RESULTS AND DISCUSSION

3.1 Plant height (cm)

Based on the research it was known that the administration of Eco Enzymes in K1 with concentration of 1:100 (3.6 ml EE: 360 ml of water) gave a very real influence ($P < 0.01$) on the parameters of plant height, the number of leaves. "Table 1" where the plant height growth for each treatment showed different plant height yields. But the administration of Eco Enzymes in K1 with a concentration of 1:100 gave an unreal influence ($P > 0.05$) on the parameters of leaf width. In the results of this study showed that, there was no interaction between the two treatment factors, namely concentration and regulation of plant drops.

Width leaf

The plant height growth for each treatment showed different plant height yields. Giving the concentration of Eco Enzymes at K1 1% showed more effective results than other concentrations. Plant growth is influenced by internal and external factors. One of the internal factors that affect plant height nutrition includes hormones. As K1 has the highest concentration on nutrition thus affect the height of Kembang Telang. In K1 treatment, the hormone produced was known to be more due to the more Eco Enzymes that were given. According to 'Table 2' the highest average plant height found in treatment K1 1%, which is 251.11 40 cm. This is because the D1 treatment produces thicker leaves than the other treatments.

TABLE, IMAGE AND FIGURE

Table 1. Plant Height (cm) of KembangTelang plant (*Clitoriaternatea L.*)

Treatments	Drops			Means
	T1	T2	T3	
K1	25,000	245,67	257,67	225,11 ^C
K2	225,67	233,33	234,00	231,00 ^B
K3	195,17	196,33	198,67	196,72 ^A
Means	223,61 ^{tn}	225,11 ^{tn}	230,11 ^{tn}	

Note : Different superscripts in the same column show very significant differences (P <0.01), tn = not significant

Table 2. Average Width of KembangTelang plant leaf (cm) by application of different concentration of EE

Treatments	Drops			Means
	T1	T2	T3	
K1	2,47	2,47	2,57	2,50 ^{tn}
K2	2,30	2,40	2,30	2,33 ^{tn}
K3	2,30	2,37	2,30	2,32 ^{tn}
Means	2,36 ^{tn}	2,41 ^{tn}	2,39 ^{tn}	

Note :tn= not real

CONCLUSION

In conclusion, the research known that the administration of Eco Enzymes in K1 with concentration of 0.01 (3.6 ml EE: 360 ml of water) gave a very real influence (P<0.01) on the parameters of plant height. But the administration of Eco Enzymes in K1 with a concentration of 0.01 gave an unreal influence (P>0.05) on the parameters of leaf width. In the results of this study showed that, there was no interaction between the two treatment factors, namely concentration and regulation of plant drops.

REFERENCES

- [1] Mangoendidjojo, W. 2003. Dasar Pemuliaan Tanaman. Penerbit Kanisius, Yogyakarta
- [2] Rudi. 2002. Kacang Kupu (*Clitoria ternatea*) Leguminosa Herba Alternatif Untuk Sistem Usaha Tani Integrasi Sapi dan Jagung Di Pulau Timor. Wartazoa 19 (1) : 43-51
- [3] Helamatha M dan P. Visantini. 2020. Potential use of eco enzyme for the treatment of metal based effluent. IOP Conf. Series : Materials Science and Engineering 716, 1-6
- [5] Tang EE and CW Tong. 2011. A study of the garbage enzymes effect in domestic waste water. World Academy of Eng and Tech 60 1143-48

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