UNIVERSITI TEKNOLOGI MARA

Programme and Abstracts

PIMES

PLANTATION MANAGEMENT EXHIBITION & SEMINAR

15th December 2018

Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA
Melaka Branch, Jasin Campus
77300 Merlimau, Melaka, Malaysia

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DEAN PREFACE

Assalamualaikum Warahmatulllahi Wabarakatuh

My heartiest congratulations go to the Committees for successfully organized PIMES September 2018. PiMES September 2018 enables lecturers and panels from strong industrial background to reflect and share significant ideas, experiences and research findings in the workplace and in partnerships. It is also hoped to encourage collaboration among the lecturers and enhance the quality and performance of the faculty. The research findings derived from this substantial event shall indicate the commitment of lecturers not only in teaching, but also in striving to unfold new knowledge and processes that will benefit the nation. The efforts of our lecturers need to be further extended to a wider audience so that the nation will benefit from the research findings. It is also hoped that, the proceedings will trigger serious thought and more robust research in the field of education as well as plantation and technology so as to help Malaysia achieve Vision 2020.

As we know, agriculture production has increased tremendously today because of the demand from various sectors in the world. To meet the challenges of increasing food demand, techniques and ways should be created to improve productivity, profitability and sustainability of the agricultural system. Industrial agricultural system has led to irretrievably changes in the landscape diversity, soil quality, environment integrity, and natural resource base. This has resulted major questions and curiosity worldwide in relation to the sustainability of agricultural production system. The most significant damage to natural ecosystems and the environment was caused by habitat conversion and corresponding climate change, loss of biodiversity and ecosystem functions, soil erosion and degradation, and pollution from fertilizers and pesticides. Concepts in plant protection have changed in past decades from exclusion or destruction of pest to pest management. Serious problems with pesticides, rapid development of pest resistance, environmental effects of pesticides, and high costs led to development of new approaches and techniques in pest management based on improved knowledge of pest dynamics and their natural enemies, and the interaction between the pest and the crop.

It remains only for me to thank all those who have helped to make this events such a great and wonderful success. Much appreciation is due to the board editor, and reviewers of all papers submitted as well as to all authors whose ideas and contributions ensured rich and lively discussion during the various sessions.

DEAN.
Assoc Prof Dr Asmah Awal

INTRODUCTION

The PiMES committee and UiTM (Melaka), Jasin Campus residents are very pleased to welcome all participants in the Plantation and Management Seminar (PIMES) which is organized by Faculty and Agrotechnology.

PiMES aims to give an exposure to the students about the procedure to make a poster by extracting information from their final year project. This seminar will sharpen their communication skill as well as they can exchange and share their research result, projects, experiences and new ideas related to all aspects of studies in plantation management and agribussiness, plant sciences, soil sciences, plant protection, plant biotechnology and agricultural engineering. We sincerely hope that you will enjoy and return home with plenty of inspiration to improve agro-industry plantation practices and research activities.

PLANTATION MANAGEMENT EXHIBITION AND SEMINAR 2018 (PiMES)
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FFECTIVE MICROORGANISMS FORMULATION IN ENHANCING RICE PRODUCTIVITY

Nur Ajlaa Mohd Ngalim, Siti Sarah Jumali*

Faculty of Plantation and Agrotechnology, UiTM (Malacca) Jasin Campus. 77300, Malacca.

Corresponding Author:
sarahjumali@melaka.uitm.edu.my

ABSTRACT

Rice (*Oryza sativa L*) is one of the most essential staple foods in the world as it is become one of the world's population diet. In order to obtain high productivity in rice and to reduce the application of chemical fertilizer, Effective Microorganisms (EM) has been applied in this study. The study used *Trichoderma koningii* as the main ingredient in the EM because this type of fungi has been proven by researcher to increase rice plants height, root length, wet weight, leaf number and biomass compared to untreated rice plants (control). The experiment was carried out in the greenhouse of UiTM Jasin in complete randomized design (CRD) based on four treatments and four replications. The variety of rice used was MR219 that obtained from MARDI and the treatments were Treatment 1 served as control, Treatment 2 with 100ml of EM. Treatment 3 with 200ml of EM and Treatment 4 with 500ml of EM. The colony forming unit (CFU) were recorded and for Treatment 2 with 7×10^8 CFU in 100ml of EM. Treatment 3 with 2.1×10^9 CFU in 300ml of EM and Treatment 4 with 3.5×10^9 CFU in 500ml of EM. The EM formulation had an advantageous effect on all measured parameters such as plant height, number of tillers and grains weight. The maximum plant growth was noted in plant treated with 500ml of EM that represents the excellent of growth performance of rice with the highest mean value of number of grains per panicle (114.25). Hence, from this study the treatment of effective microorganisms combine with *Trichoderma koningii* fungi was proved in enhancing the rice productivity.

Keywords: Rice, effective microorganisms (EM), Trichoderma koningii, CFU (colony forming unit)