



*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

# **PLANTATION MANAGEMENT EXHIBITION AND SEMINAR 2018 (PiMES)**

*Melaka, Malaysia*

*December 15, 2018*

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## **DEAN PREFACE**



Assalamualaikum Warahmatullahi 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*

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## **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 agribusiness, 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.

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### **ISOLATION AND SCREENING ANTAGONISTIC ACTIVITY ENDOPHYTIC BACTERIA FROM OIL PALM ROOTS AGAINST GANODERMA SPP. IN DIFFERENT AGE OF OIL PALM IN VITRO**

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#### **ABSTRACT**

Oil palm or also known as (*Elaeis guineensis*). This experiment was conducted to screen antagonistic activity of endophytic bacteria from oil palm roots that were taken from several infected areas against *Ganoderma* spp. The aim was to identify bacteria that can control and inhibit *Ganoderma* spp. The sample roots were taken from three different places that are Segamat estate Johor, nursery Fong Shun trading Rompin and ladang uitm Jasin, Melaka. For isolation of *Ganoderma* spp. samples were taken from private company research at Gemencheh Melaka. A total of 30 roots samples were obtained with 10 samples from Segamat estate Johor, 10 samples from mature roots from nursery Fong Shun trading and 10 root samples from mature oil palm from ladang uitm Jasin. Bacteria that were isolated showed antagonistic activity against *Ganoderma* spp. by slowing down the growth rate of *Ganoderma* spp. in culture plates. 27 endophytic bacteria were successfully isolated from oil palm roots and about 9 of them showed positive results in slowing down the growth of *Ganoderma* spp. Six out of 9 isolates were identified as gram-negative bacteria and 3 were gram-positive bacteria. Therefore, gram-negative bacteria were more abundant in oil palm roots compared to gram-positive bacteria. Support by Rashyeda et al. (2016) who also reported that the bacteria isolated from oil palm tissues were mostly gram-negative bacteria. From 9 bacteria, only 2 bacteria that were successful in suppressing *ganoderma* spp. more than 50% using the RIPG calculation method. In this experiment, I can identify and characterize the bacteria that I isolate. The bacteria colony form or shape is round and rod shape. Colony margin is entire and filamentous. Three types of colony elevation were identified that are raised, convex, and growth into medium.

*Keywords: Endophytic bacteria, RIPG*