



Programme and Abstracts

PIMES

**PLANTATION MANAGEMENT
EXHIBITION & SEMINAR**

15th December 2018

Faculty of Plantation and Agrotechnology
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Melaka Branch, Jasin Campus
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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.

**ANALYSIS OF ENERGY UTILIZATION IN BANANA (*Musa spp.*)
CULTIVATION IN MALAYSIA: A CASE STUDY**

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ABSTRACT

Banana (*Musa spp.*) is one of the major staple foods in Asia and Africa after rice, maize and corn. That make banana as ranking number four after other staple foods. In Malaysia, the production of banana has exceeded the need for local consumption and creating the opportunity to make banana as one of the exported fruits. As a non-seasonal fruits make it easy to cultivate banana over the year. The current study was conducted to analyze the utilization of energy input in banana cultivation in Malaysia. The study also aimed to inform the input used in banana cultivation with the pattern of energy produce to create reference for planting banana with effective management. Data were collected based on oral interviews with the owner of the banana cultivation area Mr. Roslan Jamil at Kampung Durian Tunjung Wilayah Persekutuan Labuan to collect all the information required for the study. The highest energy input used in banana cultivation is chemical fertilizer, contributing to 49.93% from the total energy equivalents used in the cultivation. Water irrigation is the second highest energy input with a segment of 29.17% of the total energy input, followed by herbicide, human labor, farm yard manure, fuel and machinery at 9.15%, 7.04%, 3.95 %, 0.51 % and 0.24%, respectively. The banana cultivation in the study area produce 1.00 MJHa⁻¹ ratio of energy output/input. As conclusion, the cultivation of banana utilize the energy effectively due to the ratio of energy output/input produce is equal to 1. To increase the ratio, the use of suitable machinery and proper technology is required in the cultivation of banana in Malaysia. This will increase the efficiency of energy utilization in banana cultivation at the same time solve the labor shortage problem in Malaysia.