



Programme and Abstracts

PIMES

**PLANTATION MANAGEMENT
EXHIBITION & SEMINAR**

15th December 2018

Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA
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.

**EFFECT OF ALTERING N APPLICATION TIMING ON CRITICAL
PADDY DEVELOPMENT AND RICE PRODUCTION.**

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ABSTRACT

Nitrogen is the most limiting nutrient in rice production. Nitrogen fertilizer is susceptible to losses through volatilization, denitrification and leaching. The time of application often does not match with period of crop demand. Adjusting the timing of nutrient application especially nitrogen could potentially improve the nutrient uptake and reduce nutrient losses to allow better nutrient efficiency. A greenhouse experiment was conducted to determine the best of nitrogen fertilizer application timing to improve development and rice production of two Malaysian rice cultivars (MR219 and MR269). The experiment consisted of four treatments applied each at 120 kg ha⁻¹ of N in the form of urea. For T1, N was applied on 15, 35 and 55, T2 was applied on 12, 32, and 52, T3 was applied on 18.38 and 58, and T4 was applied on 21, 41 and 61 days after seeding (DAS) with three replications. Plant physiological parameters such as plant height, tiller, panicle, straw, SPAD and 100-grain weight did not show significant differences. Only total grain weight showed significant differences among the treatments. The application of N also resulted in an increase in plant biomass. The results demonstrate that the split application of fertilizer N at PI stage (58 DAS) significantly increased percentage of filled grains, 100-grain weight and total grain yield compared to the control treatment, which is applied on 15, 35, and 55 DAS. Farmers should be advised to apply N between 52 DAS and 58 DAS, even though application of N at 58 DAS was significantly better than 55 DAS in terms of yield production.

Keywords: *Oryza sativa*, Nitrogen, grain yield, timing, critical growth stages