



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

NO	CONTENTS	PAGES
1.	The Dean, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA	1
2.	Introduction PiMES	3
3.	Committees	4
4.	Schedule of PiMES	5
5.	Room Distribution For Poster Presentation	7
6.	Distribution For Poster Presentation	8
7.	Abstracts	29
8.	List Of Panels Industries	241

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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.

**DROUGHT RESISTANCE CHARACTERS AMONG FOUR RICE
VARIETIES - A REVIEW**

Ahmad Zahrul Azri, Shamsiah Abdullah*

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

Corresponding Author:

Shamsiah3938@salam.uitm.edu.my

ABSTRACT

Rice, *Oryza sativa*, is one of the most important crops in the world. In Malaysia, rice one of the most planted crops and it is considered as commodity. Most Malaysian consume rice on a daily basis. However, the rice production in Malaysia is produced by the cultivation of lowland rice varieties especially in Peninsular Malaysia. Drought is one of the major issue faced by the rice industry. It happens as the result of natural phenomenon such as el nino and human activities. For rice, drought will cause a lot of disturbance especially on the growth, development and yield performance. Some rice varieties have developed adaptation characteristics to fight the drought and water stress phenomenon. These characteristics include the change in morphological, physiological and biochemical responses. This review focused on the potential rice varieties in Malaysia that possessed the drought tolerance characteristics. This review also discussed rice plant responses towards drought condition among the selected varieties. Malaysian rice varieties were selected in this review. Those varieties namely MR211, MR219 and two mutant lines of MR219 which are MR219-4 and MR219-9 are selected and is included in this review. MR219-4 and MR219-9 were identified as high-yielding drought-tolerant genotypes as they maintained good performance under drought stress condition for all the measured traits compared to other varieties, MR211 and MR219. but MR219-4 showed better result between those two mutant lines. Besides the adaptations and responses of rice plant on drought, this review also discussed on the strategy such as mitigation measures for countering drought in the future.

Keywords: rice, Oryza sativa, drought, tolerance, water stress, morphological