



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.

**THE EFFECT OF HEAT AND WATER STRESS TOWARDS CROP GROWTH
CHARACTER AND PRODUCTIVITY OF PADDY (*Oryza sativa* L.) – REVIEW**

Mohamed Izwan Baharin, Shafiq Sani*

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

Corresponding Author:

Syafiq487@melaka.uitm.edu.my

ABSTRACT

The abiotic factors such as heat and water stress experienced during paddy cultivation believed had significant effect on the growth and productivity of paddy. The plants will respond toward the stress in order to assimilate with the situation faced. The adjustment and assimilation of plant toward the stress condition caused the inhibition in crop growth performance and production of yield. This review provided the effects and interactions between heat & water stress with the measured crop growth characters and production of yield from previous studies from dependable researchers. The heat and water stress condition experienced during growing stages of paddy such as, tillering, panicle initiation, flowering and milky stage have their own specific effects. The effects of stresses studied were reduction in grain yield, the weight of a total of grains and percentage of grain yield reduced compared with the normal temperature of rice cultivation. This review showed the most stress-sensitive stages for both kind of stresses. In terms of crop growth characters and yield production, both stress proved most affecting the *Oryza sativa* L. during flowering stages. The effects and interaction of water and heat stress were reviewed in separate parts to extract clearer results. For the heat stress interaction towards crop growth performance and production yield, the previous studies reviewed were by Hasanuzzaman M., Nahar K., Fujita M., (2013) Yusop M. K. (2014) and T. L. Thuy & K. Saitoh. (2017). While for the heat stress interaction with particulars measured were reviewed from researches done by G. Venkatesan and M. Tamil Selvam, (2005) that using two different percentages (40% and 60%) of water stress to observe the interaction of crop growth performance and yield parameters. All the result from the previous researches reviewed were specifically on low-land rice or irrigated field rice varieties.

Keywords: effects of abiotic stress, crop growth performance, crop production, water and heat stress interaction, low-land rice