UNIVERSITI TEKNOLOGI MARA

Programme and Abstracts

PIMES

PLANTATION MANAGEMENT EXHIBITION & SEMINAR

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Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA
Melaka Branch, Jasin Campus
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DEAN PREFACE

Assalamualaikum Warahmatulllahi 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

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 agribussiness, 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.

A REVIEW OF SOMACLONAL VARIATION IN OIL PALM (*Elaeis guineensis Jacq.*)

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ABSTRACT

Cultivation of oil palm (*Elaies guineensis Jacq.*) has expanded year by year with the main objective is to achieved high yield production. A research and development of tissue culture clonal propagation already start in the early 1970. The early success of plantlets production become inspiration for many oil palm organizations to explore in vitro propagation technique. With the present biotechnology, several micro propagation techniques such as callogenesis, organogenesis and somatic embryogenesis used for conventional breeding. Though oil palm tissue culture is already well established, there is still many challenges to face for example is somaclonal variation. Somaclonal variation was first reported in 1986 which can be identify by fruit mantling and abnormal vegetative growth which lead to obtained different result. In Malaysia, MPOB and AAR is the agencies that active in the development of oil palm propagation with many research and development have been conduct to produce high yielding clone. They able to prove that through better management, it can reduced mantling level to less than 5%. Hormone type, the length of culture period can become factors that contribute to the clonal abnormalities. This has been counter with the reducing hormone level and reducing culture period. The objective of this review are to identify the factors and effect of somaclonal variation of oil palm and the methods on how to overcome or to improve genetic variation. Through this review, several finding about Malaysian Standard for ortet selection (MS 2099:2008) that should be followed by all the oil palm tissue culture laboratories in Malaysia and several MPOB technologies in improving tissue culture have been find out.

Keywords: somaclonal variation, tissue culture, oil palm