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.

ANTIOXIDANT ACTIVITY OF OIL PALM AND THEIR PHYTOCHEMICAL SCREENING AND TLC PROFILING

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ABSTRACT

Oil palm or *Elaeis guineensis* is a leading tropical vegetable oil worldwide. Many countries have been cultivated *Elaeis guineensis* includes Malaysia, Thailand and Indonesia. From the previous study, it showed that the leaves and fruit of oil palm rich in phenolic compound which have antioxidant properties. Therefore, the study was aimed to determine the antioxidant activity and potent chemical constituent in oil palm tree namely roots and it waste product (empty fruit bunches, kernel shell, pressed cake and chipped trunk. Phytochemical screening has been done by identifying the presences of alkaloid, flavonoid, tannin, saponin and terpenoid. TLC profiling were also carried out in order to find the best solvent system to isolate pure compound in the crude extract. Solvents used were hexane, ethyl acetate, chloroform and methanol. The result of DPPH scavenging activity indicates roots and kernel shell have IC_{50}. Phytochemical screening also showed the presence of alkaloid in most of the sample. Meanwhile, TLC profiling give the best solvent system of hexane and ethyl acetate with ratio of 2 to 8 (2:8). Thus, waste product of oil palm industry may contain valuable compounds for the study of their pharmacological potential in future.

Keywords: Antioxidant activity, oil palm, Elaeis guineensis, TLC profiling, phytochemical screening, solvent.