



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

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.

**SOIL COMPACTION LEVEL UNDER MECHANIZED HARVESTING
SYSTEM IN PADDY FIELD: A COMPARISONS OF PRE-HARVEST AND
POST-HARVEST**

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ABSTRACT

Soil compaction is serious problem and not suitable form of soil degradation that lead in increasing of soil erosion and decreasing of crop production. This happen by the compression soil density and reduction on the size of pore space by eliminate the water contents. This study was conducted to measure the soil compaction levels in paddy field under the conditions of before and after harvesting operation. The measurements were using a penetrometer to evaluate the soils compaction before and after in paddy field at Kampung Sempang, Merlimau paddy fields at coordinate (2.142598°N, 102.415095°E). Prior the testing, sampling points was made on the areas with 9 quadrants and 5 samples taken on each quadrant. While testing, the penetrometer was pressed with steady and even pressure to make sure the data received are accurate. Besides, soil samples also been taken to the laboratory to identify soil moisture. Data obtained were analyzed using SPSS and Excel to form the statistical analysis including descriptive analysis, T-test, correlation and regression. By the data obtains, there are relationship between both soil moisture and soil compaction by R^2 value of after, 0.4408 more than before, 0.3029 that impacted by the involvements of mechanization in paddy fields. The graph made also show the different on both before and after the used of mechanization in harvesting process by after the usage of machinery have different of 9.111 lbs more than before harvest. In statistical analysis, the alpha is 0.05 and the p-value is 0.000 which rejected the H_0 by using ($p \leq \alpha$) statistical law. So, there are significant different between before and after use of combine harvester. The mechanization in paddy harvesting influences the destruction on soil moisture and compaction of soil in paddy land in long term of utilization.

Keywords: Soil compaction, paddy, penetrometer, soil moisture, significant, combine harvester