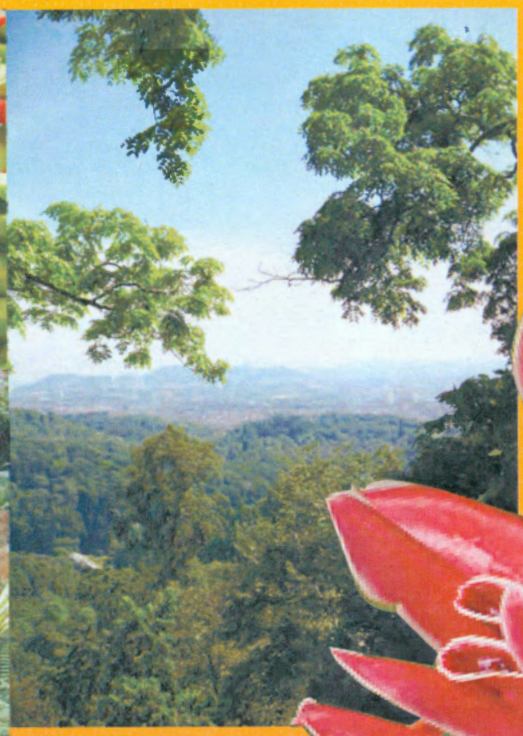
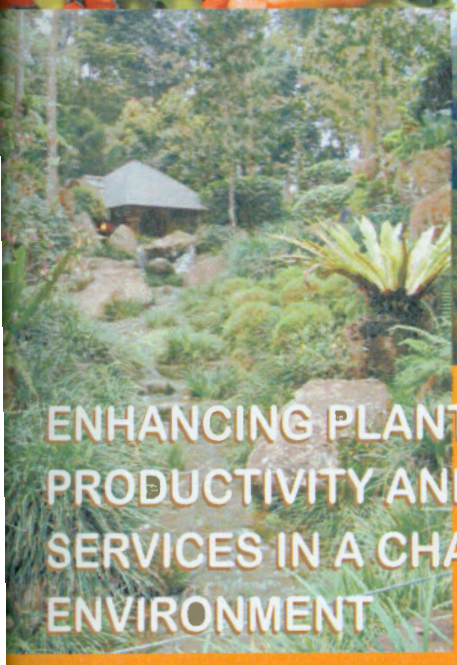
MSPPC 2009

20th Malaysian Society of Plant Physiology Conference

Programme & Abstract

24–26 July 2009
Avillion Admiral Cove
Port Dickson, Negeri Sembilan





ENHANCING PLANT PRODUCTIVITY AND ECOSYSTEM SERVICES IN A CHALLENGING ENVIRONMENT

Organized by

MALAYSIAN SOCIETY OF PLANT PHYSIOLOGY (MSPP)

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MSPPC 2009

PROGRAMME

20th Malaysian Society of Plant Physiology Conference

Enhancing Plant Productivity and Ecosystem Services in a Challenging Environment

Friday 24 July 2009

1430 - 1730 PRE-CONFERENCE TOUR
MARDI RESEARCH STATION, LINGGI, NEGERI SEMBILAN

2000 - 2200 PRE-REGISTRATION AND POSTER PLACEMENT

Saturday 25 July 2009

0800 REGISTRATION

0900 WELCOMING ADDRESS BY THE PRESIDENT OF MSPP
Dr Elizabeth Philip

0915 **PLENARY PAPER**
Chairperson: ***Dr Elizabeth Philip***
Changing Environment: Malaysian Perspective
Dr. Yap Kok Seng (Director General, Malaysian Meteorology Department)

1000 EXHIBITION, POSTER SESSION AND REFRESHMENTS

GROUP PHOTOGRAPHY SESSION

SESSION I: ASSIMILATE PRODUCTION, GROWTH AND DEVELOPMENT
Chairperson: ***Dr. Zamri Ishak***

1030 – 1050 Floral development of lemba (*Curculigo latifolia* Dryand)
Abdullah, N.A.P. (UPM), Saleh, G.B., Thohirah, L.A. and Firdaus, M.I.

1050 – 1110 Effects of seeding density and watering duration on growth characteristics and sprouting atmosphere of black gram (*Vigna Mungo* L.) sprouts grown in a chamber
Choon, S.Y. (UPM), Ahmad, S.H., Ding, P., Sinniah, U.R. and Hamid, A.A.

1110 – 1130 Planting containerized ginger (*Zingiber officinale* Roscoe) using fertigation system
Yaseer Suhaimi, M. (UPM), Mahamud, S. and Mohamad, A.M.

1130 – 1150 Corn yield response to seven planting densities and two cropping seasons
Mokhtarpour. H. (UPM), Teh, C. B. S., Saleh, G., Selamat, A.B., Asadi, M. E. and Kamkar. B.

1150 – 1210 Growth performance and physiological characteristics in *Aquilaria malaccensis* plantations differing in site resource availability
Dayana Aisyah, H. (UPM), Hazandy, A.H. and Nor Aini. A.S.

1210 – 1230 Understorey light variations in chronosequence rehabilitated forest stand
Ismail, A. (UPM), Ahmad Ainuddin, N. and Ahmad Makmom, A.

1230 – 1400 LUNCH

SESSION II: ECO-PHYSIOLOGY AND STRESS BIOLOGY
Chairperson: ***Assoc. Prof. Dr. Thohirah Lee Abdullah***

1400 – 1420 Physiological responses to light stress in the epiphytes of *Platycerium Bifurcatum*
Ruzana Adibah, M.S. (UPM), Ahmad Ainuddin, N. and Hazandy, A.H.

1420 – 1440 The use of chlorophyll fluorescence to study the effects of environmental stresses on photosynthesis of *Tristaniopsis fruticosa* in mount Tahan
Azita, A.Z. (UPM), Hazandy, A.H. and Mohd-Zaki, H.

1440 – 1500 Influence of salinity on germination of Iranian Alfalfa Ecotypes
Masoud,T. (UPM), Mohd Ridzwan, A.H., Ahmad Husni, M.H., Uma Rani, S. and Mohd Razi, E.

1500 - 1520 Sources of resistance to *Phytophthora palmivora* in durian
Nik Masdek, H. (MARDI)

1520 – 1700 MSPP 20th ANNUAL GENERAL MEETING

1700 – 1730 POSTER SESSION, EXHIBITION AND REFRESHMENTS

2000 – 2230 DINNER

Sunday 26 July 2009

SESSION III: POST-HARVEST TECHNOLOGY, BIOTECHNOLOGY, MODELLING AND SIMULATION
Chairperson: ***Assoc. Prof. Dr. Siti Hajar Ahmad***

0900 – 0920	Effects of pre-harvest calcium on disease occurrences and quality of red dragon fruit, *Hylocereus polyrhizus* *Muhd Azlan, A.G. (UPM) and Yahya, A.*
0920 – 0940	Activity of cell wall degrading enzymes of Pitaya fruits (*Hylocereus polyrhizus*) as affected by post-harvest calcium treatment *Siti, H.C. (UPM), Yahya, A., Mahmud, T.M.M and Zakaria, W.*
0940 – 1000	Maturity index and respiratory pattern indicate optimal harvesting time and post-harvest handling of *Jatropha curcas* Linn fruit *Silip, J.J. (UMS), Armansyah, H.T., Hambali, H., Sutrisno, and Surahman, M.*
1000 – 1020	Allometric relationship of trees based on ecological grouping in hill dipterocarp forest, Peninsular Malaysia *Mohd Razman, S. (FRIM) and Abd Rahman, K.*
1020 – 1045	REFRESHMENTS
1045 – 1230	BEST POSTER AWARDS PRESENTATION OF CERTIFICATES OF APPRECIATION CLOSING BY THE PRESIDENT OF MSPP
1230 – 1400	LUNCH

selected and soil samples were collected to determine the chemical and physical properties. Totally, three soil families and four phases of families were identified. After soil classification and experiment results, climatic, topography and land suitability classes were determined according to the degree of matching with plant requirements, by parametric (square root) and simple limitation methods. Results showed that most of the land units were classified moderately suitable for wheat because of some soil limitations. The major limitations of the soil are the high $CaCO_3$, sandy texture and salinity. On the basis of the limitations, most of the soils have been classified as S_{2s} and few to N_{2n} for wheat production.

P32 ESTIMATION ACCURACY OF SOIL WATER CHARACTERISTICS USING SAXTON-RAWLS MODEL FOR SEVERAL MALAYSIAN SOIL SERIES

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The purpose of this study was to evaluate the accuracy of the Saxton-Rawls model (Saxton and Rawls, 2006) for predicting the soil water characteristics, namely the soil water content at saturation point, field capacity, and wilting point, for several Malaysian soil series. Nine soil types (order Entisol, Ultisol, and Oxisol) were used: Munchong (72.65% clay, 17.98% sand), Melaka (52.8% clay, 20.63% sand), Rengam (41.28% clay, 51.86% sand), two Bungor soils (26.14 % clay, 57.65% sand; 30.43% clay, 65.11% sand), two Serdang soils (30.22% clay, 45.39% sand; 13.59% clay, 82.70% sand), Holyrood (11.35% clay, 87.12% sand), and Sungai Buloh (9.97% clay, 86.67% sand). The percentages of sand, clay, and organic matter for each soil type were used in the Saxton-Rawls model to determine the water content at saturation, field capacity, and wilting point. The predicted values were then compared against the measured data to determine the model accuracy. For Malaysian soils, their organic matter content typically range between 0.5 to 1.5%. Provided that the sand content in soils were less than 80%, the Saxton-Rawls model was insensitive to the organic matter content between this range of 0.5 to 1.5%. For example, the predicted soil water characteristics when soil organic matter level was set at 0.5% differed, on average, between 3 to 6% than that when organic matter was set at 1.5%. Most importantly, results also showed that the mean absolute error (MAE) between Saxton-Rawls' prediction and measured values for saturation point, field capacity, and wilting point ranged between 18 to 26%, with a mean of 21.13%. For saturation point, the MAE was 17.84%, field capacity was 19.16%, and wilting point was 25.83%. These levels of error were deemed rather large. The model also showed bias: the higher the clay content in the soil, the larger the prediction error. Consequently, the Saxton-Rawls model was calibrated for the nine Malaysian soils. The following quadratic equation was used to calibrate the Saxton-Rawls model: $Y = -aX^2 + aX$, where Y and X are the calibrated and uncalibrated predicted value, respectively; and a is a parameter. For predicting the soil water content at saturation, field capacity, and wilting point, the parameter a is 2.109, 1.558, and 1.490, respectively. With calibration, the Saxton-Rawls model gave a prediction error of between 9 and 15%, with a mean of 11.61%. This error is lower by 45% than the mean prediction error from the uncalibrated model.
