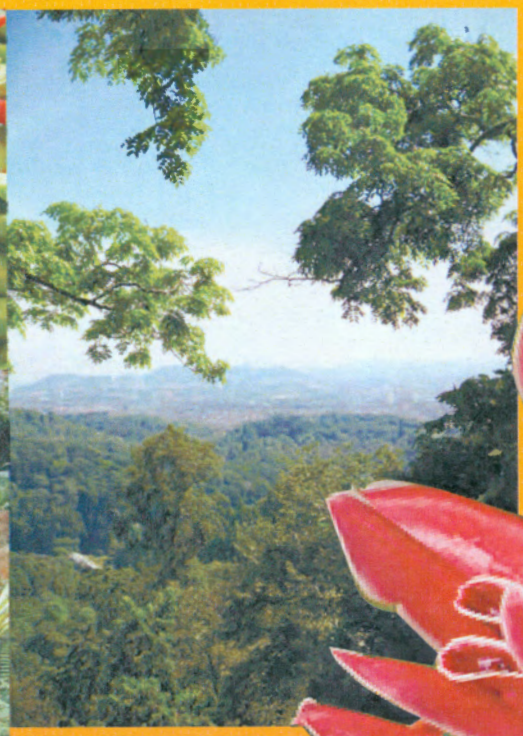
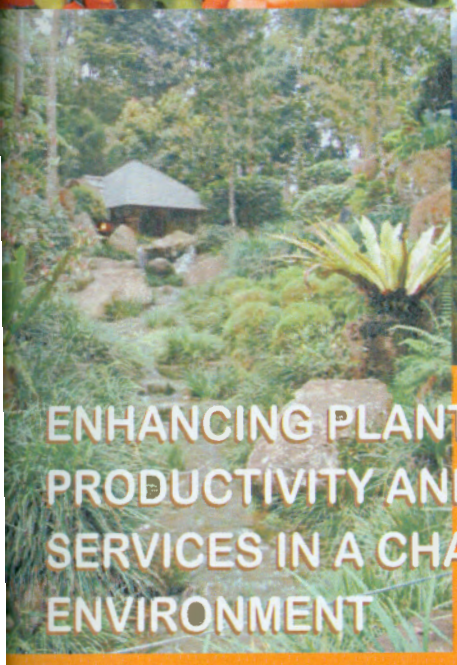
MSPPC 2009

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

P26 PRELIMINARY VALIDATION OF A NEW AND SIMPLE EQUATION TO ESTIMATE NET RAINFALL UNDER VARIOUS CANOPIES

Juliza, I.N.* and Teh, C.B.S.
Department of Land Management, Faculty of Agriculture, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.
*Corresponding author: letomagat85@hotmail.com

The main objective of this study was to validate a new and simple net rainfall model. The model validation was based on data collected from the literature. During a rainfall event, water either penetrates the canopy, falling directly to the field floor, or it is intercepted by the canopy. Tree canopies modify raindrop trajectories by partitioning the incident rainfall into throughfall and stemflow. A proportion of the incident rainfall is intercepted by and retained temporarily on leaf surface, branches and stems. In this study, the estimation from the model was compared against field measurement and data reported from literature. From the literature, four types of trees data were calculated: oil palm, rubber tree, tropical rain forest and pine forest. The test of model accuracy was done by comparing the estimated values against measured values. To estimate the values of the throughfall (Tf) and stemflow (Sf), the equation was: $Tf + Sf = Pg.\exp(-G \times LAI)$, where $G = Gmax-((Pg/C+Pg).(Gmax \times Gmin))$ and $Gmax = 0.5$, $Gmin = 0$, and $C = 1$. The accuracy of the estimated values was showed by the graph of estimated vs. measured (*figure 1*). The mean error between estimated and measured values for oil palm (Zulkifli et. al., 2006) was 1.039 mm (LAI = 4), rubber tree (Zulkifli et. al., 2003) was 1.4796 mm (LAI = 5), tropical rain forest (Germer et. al., 2005) was 1.2952 mm (LAI = 7) and pine forest (Shachnovich et. al., 2006) was 1.006 mm (LAI = 6). The graph of the estimated value and measured value showed that almost of the points of the estimated values crossed the measured value. The accuracy was high.

P27 COMBINED CHEMICAL AND ORGANIC FERTILIZATION WITH CROP RESIDUE INCORPORATION FOR SUSTAINABLE CULTIVATION OF MAIZE UNDER TROPICAL CONDITIONS

Ahmad, S.H.[1], Rosenani, A.B.[2*], Norakmar, A.M.[2], and Tajidin, N.E.[1]
[1]Department of Crop Science; [2]Department of Land Management, Faculty of Agriculture Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.
*Corresponding author: rosenani@agri.upm.com

Sustainable agriculture is the integration of agriculture management technology to produce quality food and fibre while maintaining or increasing soil productivity, farm profitability and environmental quality. Incorporation of crop residue and organic fertilizer application are recommended in sustainable agriculture for recycling of nutrients, increasing soil organic carbon (SOC) or C sequestration and sustaining soil fertility, apart from reducing use of chemical fertilizer. Chicken manure is commonly used in Malaysia as an organic fertilizer as it is easily available due to the poultry industry. With the above considerations, a field containers experiment was established to determine the effects of combined chemical and organic fertilizer with crop residue incorporation on growth performance of maize (sweet corn var. Taiwan Supersweet), nutrient uptake and soil properties. This experiment involved 5 treatments: T1- recommended (rec.) rate of chemical N, P, and K fertilizers (control), T2-.rec. rate of chemical fertilizer with residue incorporation, T3 - half rec. rate of chemical fertilizer plus 10 tonnes/ha chicken manure, T4 - only 10 tonnes/ha chicken manure, and T5 - half rec. rate of chemical fertilizer plus 10 tonnes/ha chicken manure with residue incorporation; laid-out in a complete randomized design (CRD) with 4 replications. This paper reports the results of the 5th crop cycle. Soil samples were