



MALAYSIAN SOCIETY OF SOIL SCIENCE (MSSS)

NEWSLETTER

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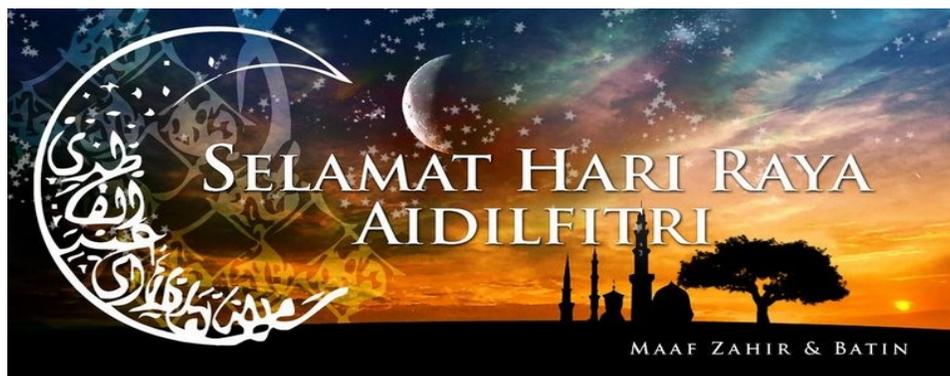
Dr. Wan Rasidah A. Kadir

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FESTIVAL GREETINGS



The MSSS Management Committee would like to extend their heartfelt Hari Raya Aidilfitri greetings to all Muslim members. May this joyous occasion bring happiness and unity.



WORLD CONGRESS ON SOIL SCIENCE 2014 IUSS UPDATE



The IUSS meetings convened from 12.00 to 14.00 hr for 3 consecutive days on 9, 10 & 12 June 2014. The Annual General Meeting for the IUSS was represented by the MSSS president, Dr. Wan Rasidah Kadir. The newly elected executive council, headed by Prof. Rainer Horn

(President Elect) will take office at the new permanent IUSS secretariat in Vienna. He further stressed the importance of all national societies from representative countries to contribute and assist in the upcoming activities lined up by the IUSS during the meet. Other issues on soil taxonomy unification were also proposed by the Director of USDA Soil Survey, Dr. Jon Hempel. Four countries bid for the 22nd WCSS and UK secured the bid with first round majority. The next WCSS 2018 will be in Rio de Janeiro whereas WCSS 2022 in Glasgow, UK. The Jeju Soil Declaration was put forward in this event. *Photos and text by Dr. Wan Rasidah Kadir*



IN MEMORY OF DR. CHAN KOOK WENG

He spent over 50 years on research in perennial plantation tree crops mainly on oil palm, rubber and cocoa

Dr. Chan Kook Weng passed away peacefully on 13 December 2013, aged 70. He left behind a life full of achievements and legacies for future scientists. The late Dr. Chan came into this world on 16 May 1943. He graduated from the Univer-

sity of Malaya with a B. Agr. Sc, followed by M. Agr. Sc. at the same university. Upon the completion of his M.Sc, Dr. Chan travelled overseas where he completed his Ph.D with greatest distinction at University of Ghent, Belgium.

As a Guthrie Foundation Scholar, Dr. Chan served Kumpulan Guthrie Berhad for 31 years (1967 to 1998) culminating as the Controller for Research and Development (Guthrie Research Chemara, Seremban). In June 1998, he joined the Malaysian Palm Oil Board as a Senior Research Fellow. He spent over 50 years on research in perennial plantation tree crops mainly on oil palm, rubber and cocoa.



He published over 480 research papers, and his scientific contribution is recognized with the awards of four fellowships; The Academy of Sciences Malaysia (FASc), The Incorporated Society of Planters (FISP), The Malaysian Oil Scientists and Technologists Association Malaysia (FMOSTA) and The Malaysian Soil Science Society (FMSoils). He headed the Malaysian Delegation to ISO/TC207 Environmental Management Standards since 2002. Being the Convener for ISO/TC 207 SC7 on Climate Change, greenhouse gas (GHG) management and related activities, he was responsible for the development of the seven greenhouse gasses (GHG) standards.

He chaired the Malaysian/SIRIM Mirror Committee on Climate Change and has been a member of the Malaysian Delegation to UNFCCC Conference of Parties negotiations since 2002. In the field of sustainability, he is a lead auditor for MPOB Codes of Practices (CoP). He lectured at UPM on the ISP Master programme on plantation management and was also appointed as an Adjunct Professor in UPM (2013). He also supervised PhD students. The late Dr. Chan was appointed as Chief Executive Officer (CEO) of the Institute of Malaysian Plantations and Commodities (IMPAC) under Ministry Plantation Industries and Commodities, Malaysia (MPIC). We will miss his warmth, mentorship and tenacious support for climate change issues. The late Dr. Chan Kook Weng left behind his beloved wife Mdm. Rosie Teh Lee Beng and 3 sons. *Text by Dr. Rosazlin Abdullah*



WORLD SOIL DAY
5 DECEMBER
INTERNATIONAL YEAR OF
SOILS
2015

20TH WCSS : SPECIAL REPORT

Photos and text by Jeyanny Vijayanathan



20th World Congress of Soil Science

In commemoration of the 90th Anniversary of the IUSS
Soils Embrace Life and Universe
June 8-13, 2014, Jeju, KOREA
www.20wc.org



Opening Ceremony

The 20th WCSS was jointly organised by the International Union of Soil Sciences (IUSS), Korean Society of Soil Science and Fertilizer and the Rural Development Administration (RDA) in Jeju Island, South Korea from 8-13 June 2014. The conference which is held quadrennially since 1927 brought together close to 2000 delegates consisting soil scientists from various countries. The theme highlighted, 'Soils Embrace Life and Universe' ensembled distinguished plenary speakers such as Prof. Rattan Lal, Prof. Alex McBratney, Prof. Jae E. Yang and Prof. Alfred Hartemink whom presented papers related to the Con-

gress Symposium, which

were (i) Soils for Peace, (ii) Soil Security, (iii) Soil-Plant Welfares for Human and (iv) IUSS for Global Soils. These plenary papers strengthened the need to safeguard soils for sustainable food production and to promote multidisciplinary research that will tackle conservation and utilization of soil and its biota in a changing climate. In lieu with the 90th Anniversary of the IUSS, the Congress also highlighted a soil parade where the Jeju Declaration was proclaimed. The Jeju Declaration pledges contribution towards information, knowledge and resources to increase information about the world-

wide importance of soil awareness through new ideas and concepts about the value of soil setting at a global scale. The interdivisional symposia showcased 88 Oral sessions with a total of 546 Oral presentations and 2340 poster presentations. The congress gathered 112 countries including the Malaysian delegates from the Universiti Putra Malaysia (UPM), Universiti Malaysia Sarawak (UNIMAS), Forest Research Institute Malaysia (FRIM), Tropical Peat Society, Advanced Ag-



Malaysian delegates



Poster session

ricultural Research (AAR), FELDA, and various post-graduate students. A one day in congress tour was also organized for the participants to view the volcanic soil series such as Namweon, Sanbang, Mureung, and Topyeong in the Jeju Island. The Congress ended with a Gala Dinner (June 12th) and a closing ceremony (June 13th), celebrating the success of the congress whilst relationships between delegates were strengthened via networking. The upcoming 21st World Congress of Soil Science is scheduled to be held in Rio, Brazil in 2018.



Pyeongdae Series

JEJU DECLARATION— 9th June 2014, Jeju Korea

Soils are important for life and the functioning of the world's ecosystems, with increasing challenges for their protection and sustainable use. We the members of the *International Union of Soil Sciences* from more than 130 countries worldwide, are willing to contribute with information, knowledge and resources to increase information about the worldwide importance of soils by raising soil awareness through new ideas and concepts about the value of soil setting a global scale:

- ◆ Soils are not dirt under our feet but the basis of our life;
- ◆ Soils influence plant, animal and human health. Therefore, we have to manage them carefully and sustainably;
- ◆ Soils are an essential and finite natural resource and therefore need to be protected by all means;
- ◆ Soils are complex in nature and heterogeneous in spatial distribution. Therefore, we all, irrespective of race, gender, culture or space must cooperate to increase the knowledge of our soils;
- ◆ Soil loss and degradation are much quicker than soil formation. Therefore, we must protect our soils by developing a long-term strategy;
- ◆ Besides food security, soils are closely related to water resources, biodiversity, energy generation, climate change, environmental health and ecosystem services. Therefore, we must develop concept for their sustainable use.
- ◆ The value of soils is unknown to most politicians, decision makers and the broader public. Therefore, we need to develop outreach programs for raising soil awareness;
- ◆ Soils are used for urbanization, industrialization, waste disposal and other forms of use, thus impacting long time food production. Therefore, we need to develop best management concepts for maintaining and restoring the ecological functions of our soils;
- ◆ Because soils are our common basis, we should highlight their value and benefits by celebrating **December 5 as the World Soil Day** in all countries of the world

JOURNAL REVIEW

Reviewed by Dr. Christopher Teh, Faculty of Agriculture, University Putra Malaysia

Title: Properties and management of acid sulfate soils in Southeast Asia for sustainable cultivation of rice, oil palm, and cocoa

Author: Shamsuddin, J.; Azura, A. E.; Shazana, M. A. R. S.; Fauziah, C. I.; Panhwar, Q. A.; Naher, U. A.

Publisher: Elsevier

Journal: Advances in Agronomy 2014, Vol 124 :91-142

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Editor : Donald L. Sparks



Prof. Shamsuddin Jusop has worked many years on acid sulfate soils, and he shares his wealth of experience and knowledge in this useful book chapter. This paper discusses in depth about the properties, classification, distribution, and management of acid sulfate soils in the world, particularly in Malaysia. Acid sulfate soils are characterized by low pH and with the presence of sulfuric horizon, overlying sulfidic materials, notably pyrite. When water is drained out for agriculture, these pyrite in the acid sulfate soils is converted by oxidation into a yellow mineral called jarosite. The acid sulfate soils eventually become highly acidic and suffer from Al toxicity. Most of the paper discusses about how acid sulfate soils should be managed for sustainable crop production particularly for rice, cocoa, and oil palm. For rice cultivation, for instance, lime, basalt, or organic fertilizers can be used to mitigate the problems of low soil pH and Al toxicity in acid sulfate soils. Cultivation of oil palm on acid sulfate soils can also be successful provided proper soil management are practised, most notably water management techniques whereby excess water is able to be drained away from the field but at the same time maintaining the water table level above the pyritic layer. Cocoa does poorly on acid sulfate soils because of low pH and Al toxicity. However, with the addition of lime, these problems can be greatly reduced. In short, acid sulfate soils are problematic soils but with organic matter, lime, or basalt application, together with water management techniques, these soils can be successfully used for agriculture.



The International Union of Soil Sciences (IUSS), in 2002, made a resolution proposing the 5th of December as World Soil Day. World Soil Day celebrates the importance of soil as a critical component of the natural system and as a vital contributor to the human commonwealth through its contribution to food, water and energy security and as a mitigator of biodiversity loss and climate change. It is celebrated particularly by the global community of **60 000 soil scientists** charged with responsibility of generating and communicating soil knowledge for the common good. Many events focused on increasing the public awareness of soil and its contribution to humanity and the environment. It is held on **December 5th** because it corresponds with the official birthday of H.M. *King Bhumibol Adulyadej*, The King of Thailand, who has officially sanctioned the event. The FAO Conference in June 2013 unanimously endorsed World Soil Day and requested the 68th United Nation General Assembly to have it officially adopted. The Malaysian Society of Soil Science will organize a public lecture commemorating World Soil Day at the end of 2014. Stay tuned for more information.

Reference : Adapted from IUSS and FAO websites

MANAGING SPATIO-TEMPORAL YIELD COMPONENT IN IRRIGATED RICE CULTIVATION

Photo and text by Kang Seong Hun

The Ministry of Education of Malaysia is funding the “Enhancing Sustainable Rice Production through Innovative Research” project which focuses on increasing rice yield production to achieve self-sufficient level (90%) by year 2020. This research project is a collaboration between researchers from local higher education institutes and is led by Institute of Tropical Agriculture (Universiti Putra Malaysia-UPM). Precision agriculture or precision farming allows location to be recorded precisely within the field, quantifies the variability of measured variables and predicts the values in un-sampled area for crop yield. In regions where spatial variability is present, default optimum nitrogen (N) values is not advisable. At present, low nitrogen use efficiency (NUE) occurs due to poor synchronization between N supply and crop demand. Uniform application of N fertilizers within fields discount the fact that N supplies from the soil, crop N uptake and the response to N are not the same spatially. There is a need to separate spatial effects from on-farm experiment to derive true treatment effects for lowland-irrigated direct-seeded rice. In this research, the nearest-neighbour analysis (NNA) was used to determine the real response of different urea-N rate on rice yield component after eliminating the error from spatial effects. This is an important precursor towards precision farming where the right amount of agricultural input (i.e fertilizer, pesticides, plant growth regulators) is applied at the right place when it is required by crops. This work was conducted over three continuous cropping seasons to determine if spatial patterns of rice yield or other plant and soil properties are influenced by temporal variation, such as microclimate changes and seasonal variations. Temporal aspects cannot be ignored in the future for precision agriculture application. In conclusion, analyzing the in-field spatial yield patterns and other soil and plant properties, their stability and underlying causes is a crucial first step in evaluating the appropriateness of precision management relative to field-scale in flooded-irrigated rice system. It is time to utilize innovative approaches while combating diminishing resources, economic pressure and increased environmental degradation in agricultural activities.



