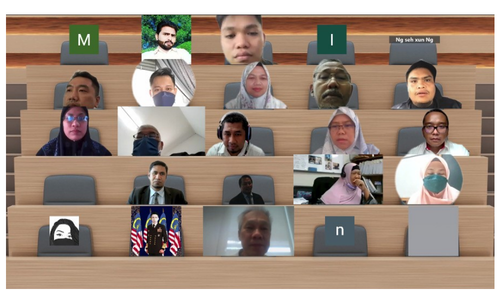
MALAYSIAN SOCIETY OF SOIL SCIENCE(MSSS)

NEWSLETTER Issue 2, 2021

50th MSSS Annual General Meeting and Pre-AGM Talk

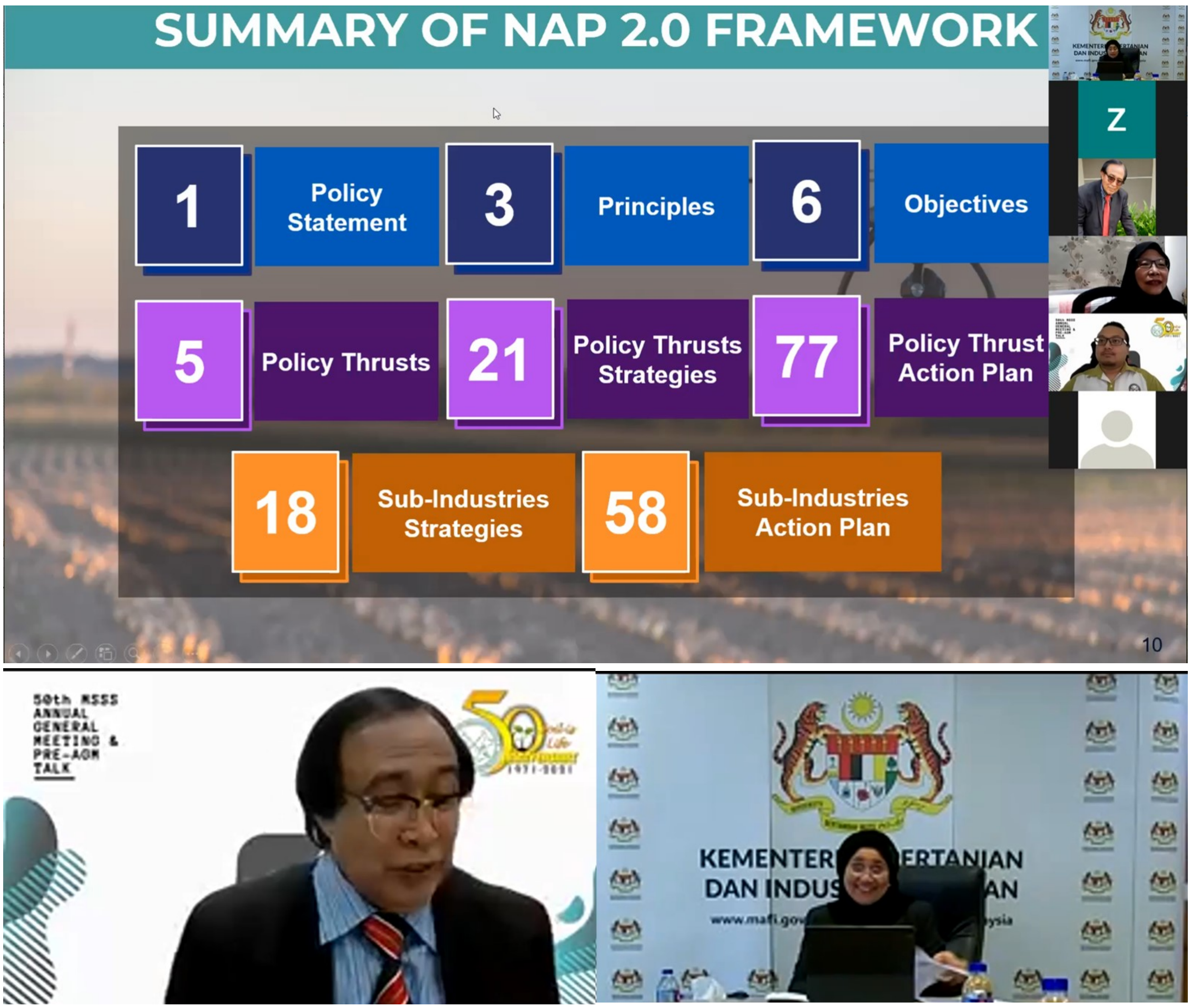
It is our first time holding an annual general meeting (AGM) through the online platform, and we had gathered 62 members on the day. This AGM was held on 17th August 2021, right after the Pre-AGM talk on New Agriculture Policy Directions: Post-National Agrofood Policy (NAP) by Dato' Haslina Abdul Hamid (Secretary General, Ministry of Agriculture and Food Industries). Due to the COVID-19 outbreak, the online platform was the easiest way to gather all members to discuss the specific issue for MSSS's future. The two hours AGM began with a welcoming address by Dr. Rosazlin Abdullah and an overview of the preview AGM.

The topics presented in the AGM meeting were financial reports, membership fees, soil correlation, and MSSS Fellow and inaugural lecture. Our members had numerous suggestions to help the society in income revenue by implementing minimum fees to join the MSSS series of webinars. The most important agenda in this AGM is the election of a new MSSS management committee in 2021/2022. The list of the newly elected committee may be found on our official website. We hope the new committee may increase MSSS visibility and gain more revenue, membership, and new ideas.



We look forward for great and active participation from MSSS members and together we promote wise use of soil resources.

Meanwhile, the pre-AGM talk started with a brief history of all NAP's which started since 1984 and elaborated about the focus target works of each NAP's. Moving forward, currently Malaysia is coming up with the National Agrofood Policy (Dasar Agromakanan Negara) 2.0 for the duration of 2021-2030. While discussing about the challenges of agrofood sectors, Malaysia faces issues of increasing population growth of projected 38.1 million by the year 2030, thus increasing the food demand in this region.



A summary picture of the Virtual Annual Grand Meeting of MSSS 2021 comprised of a summary of the NAP 2.0 Framework together with a special guest of Dato' Haslina Abdul Hamid and Assoc. Prof. Dr. Wan Noordin Wan Daud as a moderator

By: Mr. Muhammad Zamir Abdul Rasid (zamir.rasid@gmail.com)

Insight on Nutrients Management by Local Farmers

The crop fertilisation programme amongst growers in Malaysia varies accordingly. Traditional straight fertilizers with multiple rounds are rarely being practiced today especially with labour shortage issues. In recent years, more emphasis has been reoriented towards fertilizer's with higher nutrient use efficiency (NUE), longevity, reduced application frequency and versatile deliverability. In most growers, usage of bio-stimulants (hormonal amino-acids, and proteins), microbial assistance also work hand in hand for better growth as well as abiotic and biotic stress controls. From my visits to smallholders and plantations, growing concern by them also started to switch on managing resources better; particularly on restoring soil health.

Fig. 1. The durian flowering stage is usually supplemented with phosphorus, calcium and boron to reduce dropping of flowers. Usually, growers will spray in foliar form or water-soluble fertilizers using a boom sprayer

Fertiliser in the simplest terminology can be defined as a material with the main purpose to provide nutrients for plants (IFDC/UNIDO, 1979). This via inclusions of macro-, micro- and trace elements required by the crops. It is common practice by the local growers to ensure complete macronutrients (N, P2O5, K2O, MgO, Cao and S) inclusions as in their fertilisation programme. A well-trained agriculturist usually will include trace elements (TE) such as copper (Cu), zinc (Zn), iron (Fe), manganese (Mn) and boron (B2O5) in their programme to achieve a consistent and better-quality produce. Several targeted nutrients delivery usually adopted based on the needs of crops at particularly growing stages (Fig. 1 and Fig. 2).

Fig. 2. Distinctive coloration, aroma and taste in pursuit of quality of produce depends on specific nutrient management, most ensure sulphur fertilization in sulphate of potash (SOP) form

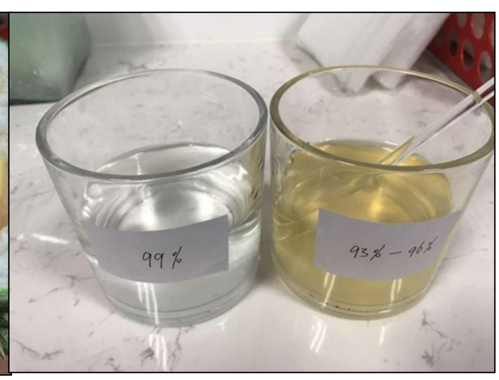


Fig. 3. Even solubility of water-soluble fertilizers varies; a well-informed and intrigue grower knows best.

This approach is well adopted and can be designated to be plant focused as its relied-on grower's experience on the field. The formulation also differs, in the past NPK Green (15-15-15) and NPK Blue (12-12-17-2)

Fig. 4. Controlled release fertilizers are also a way to address shortage of labour industry currently facing. The biggest stumbling block is pricing in place.

Fig. 5. Terraced planting of durian with soil and nutrients conservation using *Mucuna*.

Fig. 6. Unsuitable bridge interspersed with swales (BRIS) soils cultivated with black pepper using close nutrients delivery system.

is the commonly adopted formula; but nowadays growers are more accepting of new formulas which tune best with their crops needs.

In terms of soil health and ameliorants, planters are very familiar with compost, processed chicken dung (PCD) and ground magnesium limestone (GML) functions to restore soil fertility. Many materials also experimented by the grower's and formulators such as kieserite, zeolite, azomite, frass, biochar, humic/fulvic acids which have been focused in the industry. These materials are recommended and applied either via straight fertilizing, or through formulation into foliar, bulk-blend, granulated or compacted compound for easy handling. In more cutting-edge technology, as bio-NPK fertilizers. In similar directions, attempts to include microbials (N-fixers, P-solubilizing, K-solubilizing and etc.) or active compounds from its derivatives start to be considered. With these, perhaps the future of the fertilizers industry in Malaysia will move towards sustainable technology adaptation; as well as end-user practice.

Even with such a diversified fertilizers portfolio with growers which are easily adapted to new settings, the main raising issue onwards will be on shortage labour. Fertilizers are only plausible to cut the rounds of application, make it longer available in soils (slow releases/control releases fertilizers) or make it more deliverable (100 % water soluble). The rest of it still depends on how the growers can deliver the fertilizers with less labour dependency.

It comes to no surprise as the issue of pandemic emerges; more diversified fertilizers delivery is adopted and tested, i.e. fertigation. NFT, control environment system and drone application. As the issues of labour shortage become more apparent, the translation towards new agricultural methods, high- tech farming methods and IOT is a must. The soil-crop suitability also might be less relevant nowadays with inclusions of technology, some area which considered unsuitable to growth can be tuned accordingly (i.e. Fig 5 and Fig. 6).

In another view, adaptation of technology such as soil sensors (measuring NPK) as well as automated fertigation with Apps build-up setting also took place in industry amongst smallholders particularly (Fig. 7 and 8)

Fig. 8. Aerial drone spray is one of methods currently adopted by the growers. Technology is getting cheaper and affordable to mass growers, the drone service providers also started to introduce Apps mimicking Grab, some even suggest drone flyers to get certified professionally.

Past, Present and Future Outlooks

In the past the fertilizer industry focused on scouting better raw materials to be formulated for complete nutrients. The growers also practice more simple nutrient management (straight, bulk blend or compound fertilizers).

In recent years, such management has become more sophisticated with the introduction of new raw materials, additives and ways of delivery (foliar, trunk spray etc.) which are targeted for higher NUE. Efforts to make it more sustainable and consideration towards soil health are also in trends. The current issues of labour shortage and increase in raw materials make the industry to look inwards via inclusions of technology, or make scouting from by-products of industry. In the outlook, the biggest challenge will be finding tune for efficiency in its deliverability through technology.

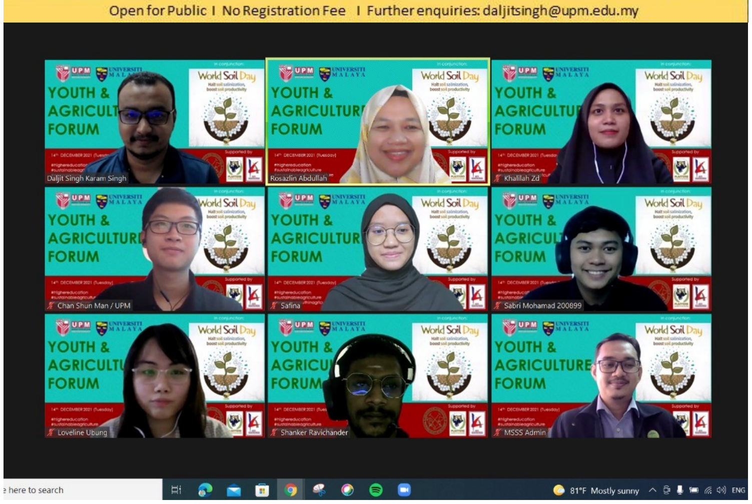
Fig. 7. Soil sensor for NPK evaluation, perhaps unsuitable for pineapple since deliverable mostly through foliar spray.

Reference

Hignett, T. (1985). Fertilizer Manual. IFDC.

By: Mr. Khairun Naim Mulana (naimmulana90@gmail.com)

Youth and Agriculture Forum 2021



Universiti Putra Malaysia and Institute of Biological Sciences, Universiti Malaysia in collaboration with Malaysian Society of Soil Science (MSSS) successfully organized the Youth and Agriculture Forum on 14th December 2021 through an online platform.

This forum intended to bring and give youth in agriculture the chance to speak up their minds and share their informative ideas on the current agriculture scenario in Malaysia. Six speakers from both organizations with different topic backgrounds share their thoughts on the current sustainability issue in agriculture. Topics discussed and debated include climate smart agriculture, agricultural economics, food security, agriculture career, smart agriculture and youth contribution to our society.

This forum attracts many listeners from public and private sectors where some had the opportunity to ask some questions as well as give suggestions on current involvement of Malaysian youth in Agriculture.

By: Dr. Daljit Singh A/L Karam Singh (UPM)

National Webinar on 2021 World Soil Day

Soil Management in Sustainable Agriculture with a theme of "Halt Soil Salinization, Boost Soil Productivity" was organised during MSSS's 50th anniversary and World Soil Day on 6th December 2021 at 9.00 am. This webinar successfully discussed the importance to tackle the soil salinity within industrial crops that has been presented by the government and private sector. The webinar was started by opening remarks from YB. Dr. Nik Muhammad Zawawi bin Haji Salleh, Deputy Minister of Agriculture and Food Industries II and welcoming remarks from Dr. Rosazlin binti Abdullah (MSSS President).

Throughout the webinar, four experienced speakers from the Ministry of Agriculture and Food Industries, Mr. Syed Abdul Bari bin Syed Othman, Department of Agriculture (DOA), Mr. Haji Noranizam bin Mohd Sahil, Sime Darby Plantation Berhad, Mr. Shamsol Nidzam bin Abdul Rashid, and FELCRA Berhad, Mrs. Syarifah Noor Irma Suryani binti Syd Ahmad. Besides, MSSS Vice President, Dr. Wan Asrina binti Wan Yahaya was appointed as the moderator for the webinar.

The three hours session gather 261 participants and discussed the national problem in achieving Dasar Agromakanan Negara 2.0 and further extend the importance of knowing our soil characteristics that have been highlighted by DOA. The constructive session with the involvement of Sime Darby's experience in managing soil salinazation in the oil palm industry. Preventing intrusion of saline water during high tide, reducing water table and flushing, and water management practices are the proven solution to sustain their production. Meanwhile, the paddy industry represented by FELCRA Berhad emphasised on poor water quality might (affect soil acidity, CEC, etc.) need an urgent solution in terms of proper soil management.

By: Miss Izzah Abd Hamid (izzahabdhamid@gmail.com) and Dr. Wan Asrina Wan Yahaya (asrina@upm.edu.my)

Soil Science learning with PBL strategy: A worthwhile teaching experience

Students outdoor discussion for the PBL assignment

Soil Science is a crucial topic in agricultural science that is difficult for students to understand. Yet, this topic can be fascinating to learn and explore if teachers can utilize effective pedagogical approaches. It is a diverse field that most people are unaware of which every facet captivates my interest. Its nature is cross-curricular where it is not confined to agriculture; rather, it is integrated with other science branches such as physics, chemistry, biology, and animal science.

Thus, to have a thorough understanding of soil science, students must have a good foundation in science and mathematics. However, most of my students obtained low grades in PMR and PT3 results. Students with a TVET background typically came from diverse backgrounds and performed poorly in science and mathematics (Jab 2021; Nor & Jamlos 2020). Therefore, it was challenging to plan appropriate pedagogical strategies to improve academic performance while stimulating their interest in this topic.

My concern was planning, delivering, and evaluating instruction related to soil science without being overly academic. An overly academic approach only hinders low-achieving students from learning as they were pushed to pursue difficult, exhausting, and unappealing topics that ultimately drained them emotionally and mentally throughout their schooling.

Since each student has a unique learning style, effective learning depends on students' readiness in cognitive, affective, and psychomotor domains. To cater to these three domains' needs, I applied project-based learning where students work in groups for a planting project. This project requires students to participate actively in discussions, presentations, and practical tasks covering all soil-related

Soil layers activities

Students work in a group for the planting project

learning and real-life issues involving soil conservation and fertilization. Laboratory activities such as soil pH and texture testing and water retention ability testing also helped students understand and relate the properties of soils with efficient agricultural production management.

Through this experience, I found that my students were more comfortable expressing their enthusiasm for soil science and their enjoyment of the process of learning new things. The method of acquiring new experiences through hands-on, mind-on and group activities has elevated it to enjoyable and stress-free learning. It allowed them to explore and understand concepts independently and even connect their new knowledge to prior knowledge and real- world situations. In conclusion, project-based learning activities are remarkably beneficial in developing students' enthusiasm, perseverance, and interest in learning soil science. This strategy also promotes healthy competition, brings a sense of satisfaction, and motivates them to learn difficult topics.

By: Mrs. Eznuzan Nyelang, Agricultural Science Teacher (SMK Medamit Limbang, SMK Sebauh, Bintulu)

MSSS Fellow

We are honour to announce the new member of MSSS Fellow who had vast knowledge and experience in soil science. The outstanding achievement in his career and strong leadership in government and non-government organisation was undeniable. A summary of Dr. Xavier Arulandoo's background and achievements were shared below as inspiration to all members.

Dr. Xaviar Arulandoo

Current Positions:

1. Independent Consultant Agronomist
2. Member of MPOB's Programme Advisory Committee – Biology Subcommittee and Oil Pollinating Weevil and Fruit Set
3. Panel Member of MPOB's International Advisory Panel on Ganoderma Disease
4. Member of MPOA's Agriculture Research Committee
5. Panel Member of Research Consultative Programme for Coconut Research in MARDI

Education History:

1. PhD at UPM with Scholarship from MARDI (1993)
2. MSc. at Cornell University with Scholarship from SPA, Malaysia (1984)
3. Bachelor Agricultural Science at UPM with Scholarship from MARDI (1977)

Career Histories:

1. Group Research Advisor at United Plantation Berhad (2017)
2. Director of Research at United Plantation Berhad (2010-2016)
3. Research Controller at United Plantation Berhad (2006-2009)
4. Senior Research Manager at United Plantation Berhad (1997-2005)
5. Research Officer and Senior Research Officer at MARDI (1977-1996)

Professional Qualifications:

1. Member of the Malaysian Society of Soil Science (MSSS)
2. Member of the Incorporated Society of Planters (ISP)
3. Life member of the International Society of Oil Palm Agronomist (ISOPA)
4. Member of the Malaysian Remote Sensing Society (MRSS)

UPCOMING EVENTS

SOIL FAMILARISIATION TOUR 2022

The Malaysian Society of Soil Science (MSSS) in collaboration with Department of Agriculture Malaysia (DOA) cordially invite you to participate in Soil Familiarisation Tour 2022 with a theme of "CALCAREOUS AND INLAND SOIL". The tour will be held on 24th-25th MAY 2022 at Gua Musang, Kelantan. All members are welcome to join this tour. See you there!

PGPR 2022

Another international conference organised by PGPPR and UPM in collaboration with MSSS and other reputable societies and universities will be held from 23-26th August 2022. This 7th conference with a theme of "Regenerating Agriculture through Beneficial Microbes for Improvement of Crop Productivity and Safety". All members are encouraged to become participants to gain more knowledge and experience. See you there!

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ESAFS
UNIVERSITI MALAYA
15th INTERNATIONAL CONFERENCE OF THE EAST AND SOUTHEAST ASIA FEDERATION OF SOIL SCIENCE SOCIETIES
ESAFS 2022
Our Soils Our Future
SECOND ANNOUNCEMENT
22-26th AUGUST 2022
Royale Chulan Hotel
Kuala Lumpur
MALAYSIA
CALL FOR PAPERS, SUBMISSION DATELINE 15 JUNE 2022
KEYNOTE SPEAKERS
DATO' HASLINA BINTI ABDUL HAMID
SECRETARY GENERAL, MINISTRY OF AGRICULTURE AND FOOD INDUSTRIES, MALAYSIA
DR. SHAMSHUDDIN JUSOP
PROFESSOR KAZUYUKI INUBUSHI
PROFESSOR IN TOKYO UNIVERSITY OF AGRICULTURE
PROF. DR. IR. DIAN FIANTIS
PROFESSOR AT THE FACULTY OF AGRICULTURE, UNIVERSITAS ANDALAS PADANG
MR RONALD VARGAS
SECRETARY OF THE GLOBAL SOIL PARTNERSHIP, LAND AND WATER OFFICER (FAO)
ESAFS 2022 OFFICIAL WEBSITE
IN COLLABORATION WITH
MARDI
FFTC
JABATAN PERTANIAN
International Decade of Soils 2015-2024
SUPPORTED BY
Malaysia Convention & Exhibition Bureau
Meet in Malaysia

The International Union of Soil Sciences (IUSS)

WHY JOIN THE IUSS?

The International Union of Soil Sciences (IUSS) is the global union of soil scientists. The objectives of the IUSS are to foster all branches of the soil sciences and their applications, and to give support to soil scientists in the pursuit of their activities. In addition, the IUSS aims to put soils and soil science on the global agenda. Annual subscriptions from National Soil Science Societies, either directly or indirectly via National Academies, are essential for maintaining a strong presence of the IUSS for effective promotion of soil science and its wide range of applications to fellow professionals, policy and decision makers, and the general public. This is critical to keep our discipline strong and viable and to enhance its visibility and impact in all parts of the world.

The IUSS is the umbrella organisation for six important regional societies, one in Asia (the "East and South East Asian Confederation of Soil Science Societies"), three in Africa (the "African Soil Science Society", the "East African Soil Science Society", and the "West and Central African Soil Science Society"), one in Latin America (the "Latin American Society of Soil Science Societies"), and one in Europe (the "European Confederation of Soil Science Societies"). All these regional organisations act under the umbrella of IUSS and have specific tasks for promoting soil science.
Source https://www.iuss.org/about-the-iuss/why-join-the-iuss/

MSSS Publications for Sale!

BOOKS (RM 10/each)

1. Bibliography of Malaysian Soils
2. Recent Developments in Land Evaluation
3. Sustainable Land Management
4. Secondary & Micronutrients in Malaysian Agriculture
5. Developments in Soil Research In Malaysia
6. Soil Management for Food and Fruit Crop Production

JOURNALS (RM 10/each)

1. Malaysian Journal of Soil Science (Volume 1—12)
2. Malaysian Journal of Soil Science (Volume 15—16, 18)

PROCEEDINGS (RM 10/each)

1. Soil Science Conference of Malaysia year ('91. '93', '94, '95, '97, '98, '99)
2. Soil Science Conference of Malaysia year ('02. '03', '04, '06)
3. International Conference on Fertilizer Usage in the Tropics 1992
4. Workshop on Soil Science in Malaysia-Towards the year 2020
5. Proceedings of the International Conference on Fertilizer Usage in the Tropics (FERTROP) 1992

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We are a big group of almost 300+ soil enthusiasts and we like to hear from you! We are looking for article contributions on soil related issues.

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Contact Us

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SOIL RELATED ISSUES

GENERAL ARTICLES: If you have a story/report about an activity related to soil, such as soil training/workshop/conference/meetings;

YOUNG SCIENTISTS: If you are currently a young soil scientist (below 40 years of age) working on a research project related to soil dynamics, you may send in your research article about 500 to 600 words which states on the intro, justification, brief methods, results and conclusion. Please include a digital copy of your research image.

THE EASTERN CONNECTION: Dedicated for any soil research endeavors and information from Sabah and Sarawak.

ANNOUNCEMENTS: Of trainings or educational opportunities, forthcoming meetings, conferences or other international announcement regarding soil, agriculture, forestry, etc.

BOOK/PAPER REVIEW: If you have come across a recently published article you think may be of interest to other MSSS members, please alert the Newsletter Editor and we will highlight it for our readers.

HOW TO PUBLISH WITH US

Send us your article now !!

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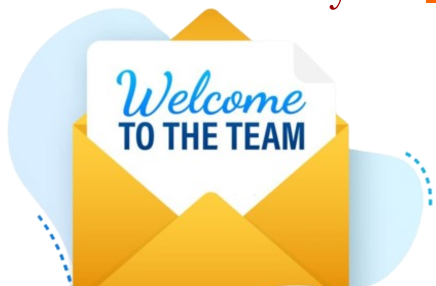
MJSS - CALL FOR PAPERS

The Malaysian Journal of Soil Science (MJSS) is a scientific journal published by the Malaysian Society of Soil Science. It contains research papers in English on matters related to soil and soil-plant interactions. The journal welcomes original research works not previously or simultaneously published in any other scientific or technical journal from MSSS members as well as other scientists in Malaysia and abroad. The aim of the journal is to promote the development of soil science in Malaysia, other tropical and subtropical regions. **MJSS is a peer-reviewed, fully open access journal, is now indexed by Scopus and published annually.** Instruction for authors and other details are available on our website http://www.msss.com.my/journals/instruct.php



1096	Mohammad Zamani bin Safie
1097	Munirah binti Tharek (Dr.)
1098	Chin Kok Fun (Mr)
1099	Soleha binti Mohamat Yusuff (Dr.)
1100	Noor Syahirah Norrashid
1101	Siti Norhairose Azlin bt Ahmad
1102	Dayang Masliah binti Rashid
1103	Jacqueline binti Joseph
1104	Faridah binti Ahmad Azam
1105	Muhammad Asri bin Lias

The IUSS song

It is our life! We call it soil
It is the stuff, in which we toil
From soil we've sprung, to soil we'll go
Protect the soil of this earth so we can grow

Membership is open to all professionals and graduate students, within and outside Malaysia. The membership fee is either:

1. RM50.00/year for ordinary member
2. RM400.00 for life time memberships

Contact us for more details!