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SLAMPP

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Issue 4

In this issue...

Editorial

Embracing 'One Health' - Why plant health is crucial in the 'One Health' approach?

By *Dr Dhanushka Udayanga*

The "One Health" approach has been extensively discussed among scientific community over the past few years, highlighting its positive impact and multidisciplinary nature. According to the World Health Organization (WHO), the 'One Health' approach is a comprehensive strategy designed to harmonize and enhance the health of people, animals, and the environment. One health definition further expanded by the One Health High Level Expert Panel (OHHLEP), whose members represent a broad range of disciplines in science and policy-related sectors relevant from around the world further illuminates as it recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent. As professionals endowed in plant health, it is crucial to consider the potential green aspect of One Health.

In a joint statement released on December 1, 2021, by the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE), the World Health Organization (WHO), and the United Nations Environment Programme (UNEP), the significance of the One Health approach is recognized and the newly adopted OHHLEP's One Health definition is appreciated.

Moving forward, the above Tripartite and UNEP will collaborate to organize and carry out One Health initiatives in accordance with the principles outlined in the OHHLEP definition, ensuring alignment with its spirit.

In a remarkable blog published by International Plant Protection convention (IPPC), Secretary of IPPC, Osama El-Lissy mentioned "*As we work towards a zero-hunger world and aim for better lives for all, it is essential that plant health continues to play its vital role in the nexus between human, animal and environmental health. All are interdependent on each other.*" These significant incidents highlights the need for more awareness on "One health" approach among Plant health experts.

In an opinion piece by Dr. Vivian Hoffmann, a Senior Research Fellow at the International Food Policy Research Institute and Adjunct Research Professor in the Department of Economics and School of Public Policy and Administration at Carleton University, along with her team, published in CABI Agriculture and Bioscience, advocates for a One Health approach that specifically addresses plant health. The article delves into two critical trade-offs at the convergence of plant, animal, ecosystem, and human health. The first opinion focuses on the safeguard of plant health through the use of agrochemicals with the pressing need to mitigate risks to human health and combat antimicrobial and insecticide resistance. The second view is nurturing food security by prioritizing crop health to optimize agricultural output while simultaneously safeguarding environmental systems crucial for human well-being. These holistic viewpoints emphasize the balance between safeguarding plant health, ensuring food security, and preserving environmental integrity for the collective well-being of humanity and the entire planet. Therefore, we should extends our commitment to One Health paving the way for a healthier, more sustainable future for all. As the professional body representing Sri Lankan Mycologists and Plant Pathologists, we are dedicated to embracing the all-inclusive One Health concept, thus laying the groundwork for a promising future for humanity.

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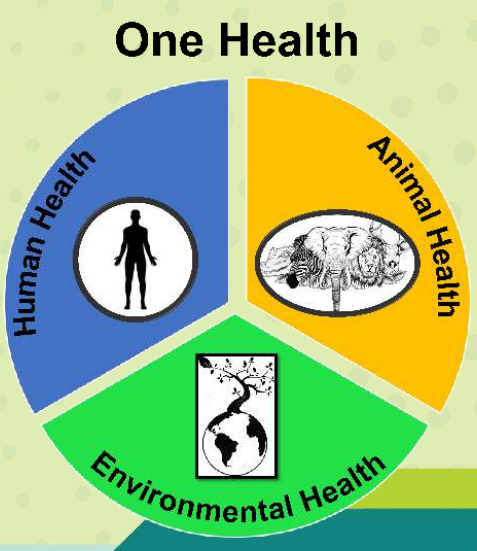

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Feature Article

Mysteries Underfoot: Proliferation of Novel Fungi Explained

Dr. Dimuthu S. Manamgoda

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If you've explored the latest mycological research, you may have noticed an interesting trend of a significant increase in the number of newly identified fungi species. In the past decade alone, approximately 2,000 novel species have been introduced to Science. This raises several fascinating questions: Why is this surge in discoveries happening now? Are fungi evolving at an unprecedented rate, or have we previously underestimated their diversity? In this feature, we aim to shed light on these questions exploring the factors contributing to this remarkable period of discovery in the world of fungi.

How many fungal species are present on this planet earth?

The real estimate of fungal diversity has been changed overtime with the discovery of new methods of species identification and taxonomy. In 1991, David Hawksworth estimated 1.5 million fungal species on the earth. The estimated number has changed several times later by the researchers and recently Wu et al. (2019) estimated the fungal diversity on earth to be 11.7-13.2 million species. However, the fungal diversity estimate of 2.2 to 3.8 million species by Hawksworth and Lucking (2017) has been accepted as the more realistic number by many of the authors afterwards. Out of this estimated diversity there are nearly 100,000 fungal species are currently described which represents 2.2-4.5% of the total projection. There is no wonder that mycologists around the world are describing novel fungal species each and every day.

"*My first PhD student alone has discovered many new species and records of Bipolaris and Curvularia from Sri Lanka in a single project with limited sampling. There are improvements of the numbers actively working mycologists in tropics throughout the world which also lead to increment of described species number.*"

The development of novel technologies– impact on species numbers

Novel fungal species were mostly described based on sexual and asexual morphology, colony and other biochemical characteristics until recently. However the morphological features of sexual and asexual structures overlaps and sometimes it very hard to differentiate two closely related species based on morphology alone. Moreover, many sexual and asexual structures have a very simple structure and include limited number of characters compared to plants and animals. Also the production of secondary metabolites vary with the age of fungi and environmental factors. Because of these reasons, limited number of characteristics resulted cryptic species. After, 1990s fungal taxonomists started to use molecular tools such as PCR and sequencing and they found that many cryptic fungal taxa. i.e. morphologically indiscernible biological/phylogenetic units present within taxonomic species. For an example, early in the 1990's, Vilgalys & Sun (1994) found out that the common "oyster mushroom" *Pleurotus ostreatus* consist of high levels of phylogenetic divergence, where eight phylogenetic groups were detected. In fact many genera of well- known and important plant pathogenic fungi such as *Calonectria*, *Colletotrichum*, *Curvularia*, *Diaporthe*, *Dothiorella*, *Fusarium*, *Phyllosticta*, *Melampsora*, *Neopestalotiopsis*, and *Microbotryum* are actually represent complexes or aggregates of cryptic species.

With the development of molecular tools, systematic mycologists started to utilize phylogenetic tools to predict taxonomy as it represents true evolution. Multi-locus phylogeny was first used in mid 1990s and then regularly started to practice in 2000s. Genealogical Concordance Phylogenetic Species Recognition (GCPSR) is based on the idea that recombination within a lineage will create conflict between gene trees, with the transition from conflict to congruence representing the species limit.

This approach was used to delineate species in several fungal groups. The identification of cryptic species contributes to the increment of fungal diversity. Other than that, ongoing taxonomic revisions and advancements in the understanding of fungal taxonomy leads to the reclassification of known species and the identification of new ones.

In a pioneering 2014 study, Maharachchikumbura et al. have redefined the classification of Pestaloid fungi, identifying three genera: *Pestalotiopsis*, and the newly discovered *Neopestalotiopsis* and *Pseudopestalotiopsis*, based on multi-locus phylogeny.

This breakthrough enhances our understanding of fungal biodiversity, spotlighting two previously unrecognized genera. As a result some species previously classified as *Pestalotiopsis* were placed in the genera *Neopestalotiopsis* and *Pseudopestalotiopsis*. After establishing this phylogenetic back- bone many novel species were introduced to all three genera during past decade. Similar trend can be seen with the genera *Bipolaris* and *Curvularia*. Utilization of PCR in systematics was a monumental advance especially for those who studied minute, often unculturable, organisms.

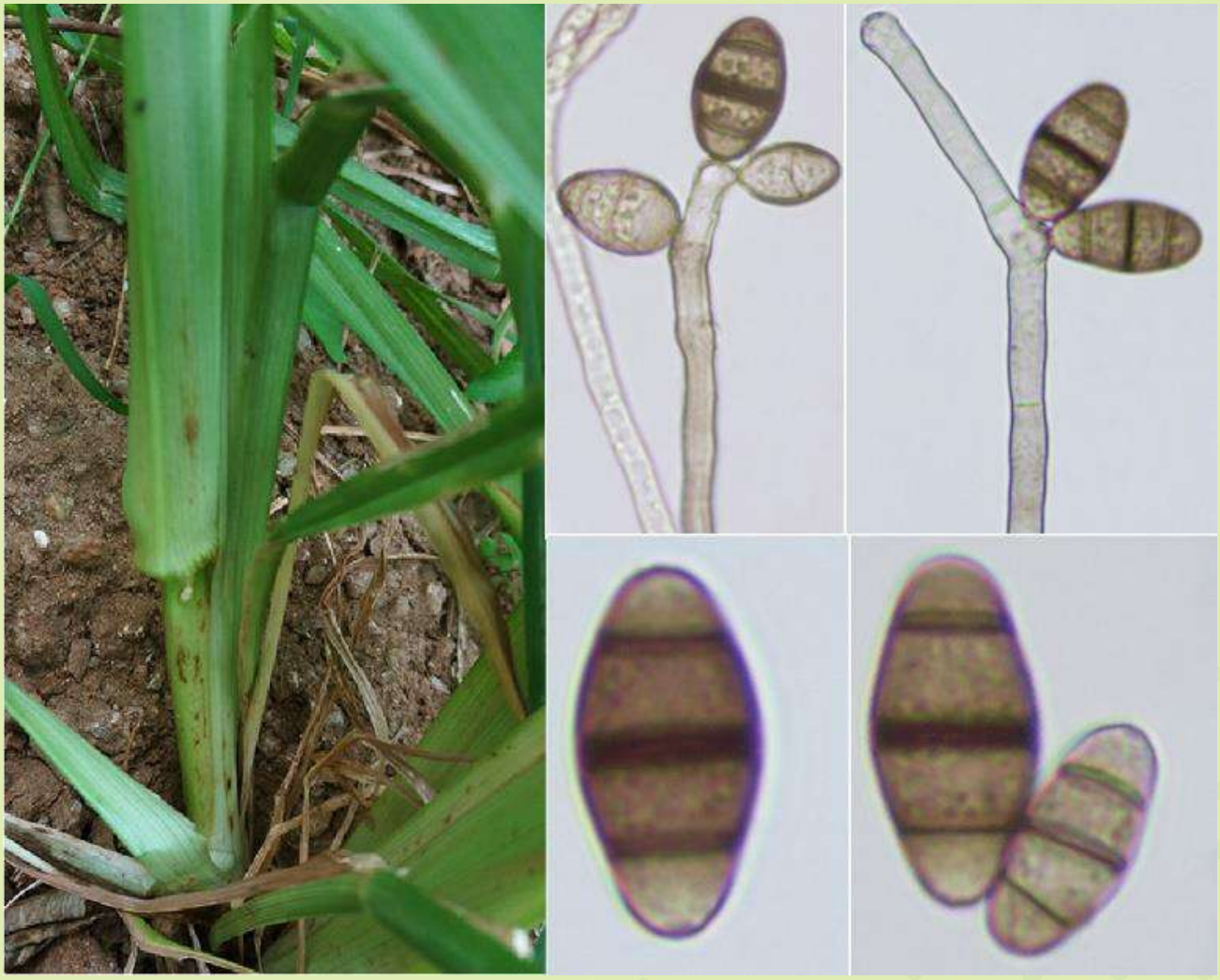

Figure 1: Recently described species *Curvularia eleusinicola* Ferdinandez, Manamgoda & Udayanga, isolated from dark brown lesions on sheath of *Eleusine coracana* collected from Polonnaruwa district Sri Lanka in 2021.

There are some fungi that show few morphological characters (e.g., yeasts, non sporulating endophytes), non-corresponding characters among taxa (e.g., asexual and sexual states), and convergent morphologies were suddenly overcome.

Understudied habitats, geographic regions and countries

Fungi are ubiquitous and has been discovered in large number of habitats. It is estimated most of the undiscovered fungi may remain in the tropics. Tropical regions in the world harbour the highest diversity for many groups of living organisms and this is generally true for fungi as well. Currently there are more fungal taxonomic projects mainly focusing tropics which would help us to unlock diversity of tropical fungi to a certain extent. In my personal experience mycologist from the tropics, my first PhD student alone has discovered many new species and records of *Bipolaris* and *Curvularia* from Sri Lanka in a single project with limited sampling. There are improvements of the numbers actively working mycologists in tropics throughout the world which also lead to increment of described species number. There are comparatively less studies done on marine and freshwater fungi, cave inhabiting fungi, fungi in agroforestry ecosystems, entamopathogenic and fungicolus fungi. Recent studies has shown that fresh water fungal genera of different stream systems has different species thus diversity of lignocellulotic fungi can be much higher than we expected. Other fungal groups likely to be reveal similar trends once those are thoroughly studied. This means that there are still many places on Earth where we have not investigated fungal diversity. We are far from the point of describing all existing fungal species on the planet. However, through the exploration of novel habitats and the development of new high-throughput next-generation sequencing techniques, which will provide ample data, it is probable that mycologists will describe more novel species in the next decade than ever before!.

About the writer:

Dimuthu S Manamgoda is a Senior Lecturer and Mycologist at the Department of Botany, Faculty of Applied Sciences, University of Sri Jayewardenepura. She was the former President of SLAMPP (2020-23) and the recipient of Emory Simmons award by Mycological Society of America in 2018. Her current research are based on plant pathogens and aquatic fungi from Sri Lanka.

Former Secretary's Message

Sri Lanka Association for Mycology and Plant Pathology (SLAMPP) - Highlights from 2021-2023

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In the first issue of 'SLAMPP Newsletter' for the year 2024, I am delighted to present a brief overview of the significant events and accomplishments of the Sri Lanka Association for Mycology and Plant Pathology (SLAMPP) during the period of 2021–2023.

The Executive Committee of the SLAMPP for the term 2021-2023 was appointed at the 4th Annual General Meeting held on 15th May 2021, on a virtual platform, in response to the challenges posed by the COVID-19 pandemic.

The newly appointed president, Dr. Dimuthu S. Manamgoda, addressing the gathering, emphasized the importance of collaboration and knowledge-sharing in the fields of mycology and plant pathology and hence requested articles for the annual newsletter, which is published in January and June each year. Additionally, she stressed the need to expand our membership base.

Within the next executive meetings, activities to be conducted by the association were planned. As a result, we are proud to announce that membership in the association has increased to 93, with 37 life members, 10 regular members, and 46 student members. We believe that membership numbers will continue to grow in the future.

Challenges posed by the global COVID-19 pandemic badly affected all the physical activities of the association. Even amidst those difficulties, we tried our best to arrange knowledge- sharing sessions. In this context, we were able to conduct a virtual talk series on diverse aspects of Mycology and Plant Pathology successfully. Eight talks were delivered by the expert scientists in the field:

- ★ 1st Talk by Dr. Jordan Bailey, NSW Biosecurity Collections, Australia, on 'NSW Plant Pathology and Mycology Herbarium Virtual Tour'.
- ★ 2nd Talk by Dr. K.M. Aruna Kumara, University of Colombo, on 'New Trends in Plant Disease Management'.
- ★ 3rd Talk by Dr. Jayantha Senanayake, Rice Research and Development Institute, Sri Lanka, on 'Developing field crops for plant virus resistance'.
- ★ 4th talk by Dr. Tharindu Weerarathne, WayBeyond Ltd., New Zealand, on 'Crop diseases and control in controlled environment Agriculture'.
- ★ 5th talk by Dr. W.A.R.T. Wickramaarachchi, National Plant Quarantine Service, Sri Lanka, on 'Overview of Plant Quarantine System in Sri Lanka'.
- ★ 6th talk by Dilnee Danura Suraweera, Agriculture Victoria, Hamilton, Australia, on 'Identification and Management of Soil-borne Diseases in Australian Grain Crops'.
- ★ 7th talk by Dr. Ruvishika S. Jayawardane, Mae Fah Luang University, Thailand, on 'Correct Identification of Plant Pathogenic Fungi: The Key to Controlling Diseases'.
- ★ 8th talk by Dr. Niroshini Gunasinghe, University of Southern Queensland, Australia, on 'Molecular characterization and diversity of Fusarium from Sorghum'

These sessions provided valuable insights and fostered a sense of community among our members.

Further, the second national symposium, 'Plant Health 2022', was another major accomplishment of SLAMPP that was successfully conducted on 25th June 2022, as a virtual event, hosted at the Postgraduate Institute of Science (PGIS), bringing together researchers and experts in both academia and research institutes to share their latest findings and innovations.

There were 16 oral presentations in different thematic areas. Keynote speeches were delivered by Emeritus Professor Pratibha Sharma of the Indian Agricultural Research Institute and Dr. Romina Gazis of the University of Florida.

Further, we are happy to say that Dr. Dimuthu Manamgoda has been nominated as the representative of the International Society for Plant Pathology (ISPP) and Prof. W.A.M. Daundasekera as the representative of the Asian Association of Societies for Plant Pathology (AASPP). The field of mycology and plant pathology is at the forefront of scientific discovery, and it is also dynamic and ever-evolving. We believe that these eminent scientists will shine in this field with their knowledge and experience.

I extend my sincere appreciation to everyone involved in making all the events of SLAMPP a success. Your dedication is integral to the success of our association, and I am confident that our newsletter will serve as a catalyst for even greater achievements in the coming years.

Thank you for your dedication, and I look forward to your continued and unstinted support in the future activities of SLAMPP.

Dr. Ruwanka Ratnayake,
Secretary, SLAMPP (2021-2023)

Senior Researcher at National Institute of Post Harvest Management

Dr. Mahendranathan Shares Insights in Invited Talks at Prestigious Indian Institutes

In a remarkable showcase of expertise and leadership, Dr Chandrakantha Mahendranathan, Vice President of SLAMPP and Senior Lecturer (Gr. I) in Botany, Department of Botany, Faculty of Science, Eastern University, Sri Lanka recently delivered two insightful invited talks at distinguished institutes in India. The conferences, focused on crucial aspects of global agriculture, brought together experts and scholars to discuss challenges and opportunities in the agricultural sector.

Dr Mahendndranathan's first invited talk took place at the International Conference on Microbiological Research: "Current Challenges and Future Perspectives (ICMR:CCFP-2024)." Organized by the Department of Microbiology, Bharathidasan University, in collaboration with the Microbiologists Society, India, the conference was held from January 09 to 11, 2024.

Chandrakantha Mahendndranathan's second invited talk took place at the 3rd International Conference & Exhibition on "Sustainability: Challenges & Opportunities in Global Sugar Industry." The event, held at the Vasantdada Sugar Institute campus in Manjari (Bk.), Pune, Maharashtra, India, spanned from January 12th to 14th, 2024.

Both of the topic sparked discussions among microbiologists and researchers, paving the way for potential collaborations and advancements in sustainable agricultural practices. Chandra Mahendndranathan's contributions to these conferences exemplify SLAMPP's commitment to fostering sustainable practices and addressing critical challenges in agriculture. Her engaging talks provided a platform for knowledge exchange and collaboration, furthering the collective effort to ensure a resilient and sustainable global food system.


ChiniMandi
WORLD-WIDE SUGAR AND CO-PRODUCT INDUSTRY
Plenary Session
आंतरराष्ट्रीय साखर परिषद 2024


3rd International Conference & Exhibition on
"Sustainability: Challenges &
Opportunities in Global Sugar Industry"
12th-14th January, 2024
Vasantdada Sugar Institute, Pune, India


ChiniMandi
WORLD-WIDE SUGAR AND CO-PRODUCT INDUSTRY
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Mycelium-based composites (MBCs): Building a Sustainable Future with Fungi

By Chathura Madusanka

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Rapidly increasing global population leads to higher consumption of raw materials. Especially, the construction industry has undertaken significant pressure since the methods of producing construction materials such as cement, bricks, timber, and cladding are limited and the demand by the global population is increasing. The production process of traditional construction materials such as steel and concrete are required significant energy. Additionally, it pollutes our environment by generating atmospheric particulate matter, carbon dioxide, and other greenhouse gases.

In recent times, mycelium proceeds more attention in research studies due to its low energy consumption in growth, broad potential application, and zero-byproduct. Although we typically picture a mushroom as only the above-ground part of a fungus, the vegetative part lives inside the substrate (straw, grain, wood, etc). The visual above-ground part of the mushroom is called the fruiting body, while the root system is called the mycelium. It is consisting of a network of fine white filaments of 1–30 µm in diameter. These mycelium filaments are composed of multiple layers including proteins, glucans, and chitin. The organic substrate (plants and animals waste) provides nutrition for the growth of the mycelium network.

Mycelium acts as a natural, self-assembling adhesive as it grows, binding the fragments of organic substrates, leading to the production of fungal mycelium-based biocomposites (MBCs) (Bhatt et al., 2021).

Figure 1 Mycelium based packaging material

"By controlling the substrate and processing method, the mycelium-based material can reach specific structures and material functions."

Feeding Substrates for MBCs

Several agricultural waste materials such as rice husk, rice straw, wheat straw, wheat bran, corn straw, coconut fiber, sugarcane bagasse, corn cobs, sorghum stubbles, flax shive, kenaf fiber are used in MBCs production.

Composite fabrication

The procedure used to grow fungal mycelium-based composites is similar to the standard procedure of growing mushrooms (Wösten et al., 2018). This includes,

1. Inoculate the culturing dish with mushroom spores and sufficient nutrients and water (the incubation time is about 7-14 days)

2. The growing substrate composed of various organic matters such as brown rice, wheat, and straw should be sterilized.

3. Transfer a small piece of mycelium sample cut from the culturing dish into the growing substrate for further incubation.

4. When the substrate is full of mycelium, it is dried at a high temperature (60–125 °C) for several hours to inactivate the hyphae and stop the growth process before gaining the mycelium composite.

Warm room temperature with fresh air and high humidity provide an excellent environment for growing mycelium.

Applications of MBCs

Mycelium combines with organic matter generated from various industries to form the bio-composite that can be used to produce different valuable products such as low-value materials (e.g., gap filling, packaging (Fig. 1)) and high-value composite materials for structural applications (e.g., textiles, automotive interior padding, interior design, model making, vertical green walls).

Future directions

In recent years many researchers investigate about MBCs using several fungi species. However, their research has been limited to only a few species of the fungi kingdom. Therefore, it is required to explore new fungi from different ecological niches. Although many research studies have been carried out on mycelium-bound composite materials for applications in different industries, their findings have been limited to small-scale prototypes and exhibition installations (Vandelook et al., 2021). Additionally, the combination of material engineering and nanotechnology in MBC research will be a new approach to developing healthy, renewable materials that may eventually resolve many prevailing environmental issues.

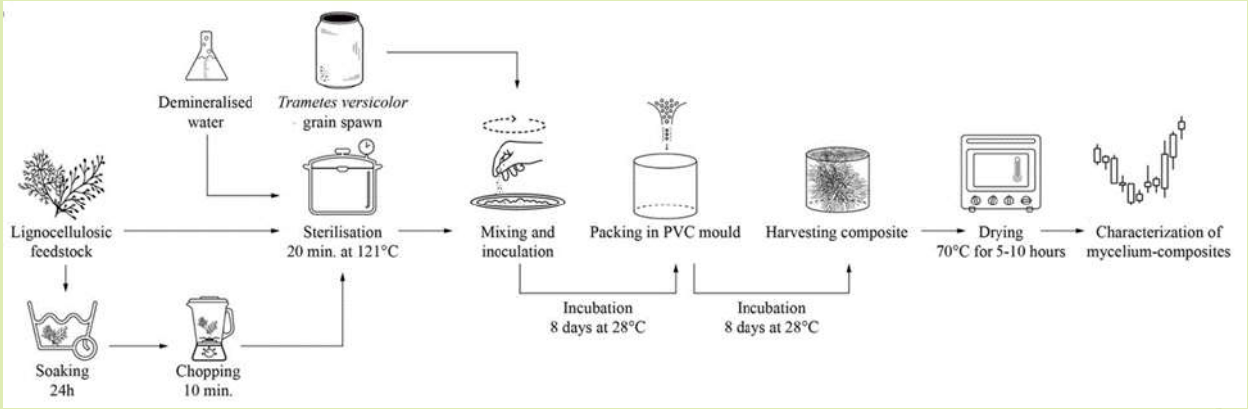

Figure 2: Process flow chart showing the applied fabrication method of mycelium-based composites to expanded polystyrene.
Source- Mechanical, physical and chemical characterization of mycelium-based composites with different types of lignocellulosic substrates (2019); DOI; https://doi.org/10.1371/journal.pone.0213954

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Chathura Madusanka graduated with a Bachelor of Biosystems Technology (Honours) degree in Agriculture and Environmental Technology from the University of Sri Jayewardenepura in 2020. He is currently serving as a research assistant at the Faculty of Technology, University of Sri Jayewardenepura.

Flashback: Exploring the Frontiers of Plant Health: A Recap of SLAMPP's 2nd National Symposium

The Sri Lanka Association for Mycology and Plant Pathology (SLAMPP) successfully hosted its 2nd National Symposium - Plant Health 2022 on June 25th, 2022. This virtual event, held at the Postgraduate Institute of Science, University of Peradeniya, marked a significant stride in the field of plant pathology and mycology.

The symposium, themed "**Towards Sustainable and Eco-Friendly Strategies for Plant Disease Management**," served as a beacon for scientists, researchers, and scholars to present groundbreaking findings and discuss the future of plant health. The event covered a wide array of topics, including:

- **Diversity and Ecology of Plant Pathogens**
- **Microbes for a Sustainable Environment**
- **Advancements in Mycology**
- **Identification of New and Emerging Plant Pathogens**
- **Strategies for Plant Health Management**
- **Innovations in Plant Disease Resistance**
- **Techniques for Plant Diseases Diagnosis**
- **Management of Postharvest Diseases**

The symposium's technical program was meticulously crafted by the organizing committee, chaired by **Dr. Dimuthu Manamgoda** and with **Dr. Ruwanka Rathnayake** as the secretary, to stimulate research and foster collaborative efforts for a sustainable future.

Highlighting the event were two keynote speeches. **Prof. Pratibha Sharma** delved into the advances in biological control strategies, offering insights into eco-friendly disease management. Following her, **Dr. Romina Gazis** addressed the challenges and opportunities in tropical plant pathology, underscoring the importance of innovation in the face of global climate change.

As we reflect on the symposium's success, we are reminded of the pivotal role such gatherings play in sharing scientific ideas, networking, and establishing valuable contacts. The insights and discussions from Plant Health 2022 will undoubtedly propel the field towards new horizons and contribute to the global effort of ensuring plant health and, by extension, food security.

Feature article

Exploring wild edible mushrooms in Sri Lanka: the way forward

By *Naduni Dasanthi, Kasun M. Thambugala*

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Introduction

Mushrooms primarily belong to the Basidiomycetes members that produce mature spore-bearing and morphologically distinct fruiting bodies. They are eukaryotic heterotrophs that obtain nutrients through saprophytic, parasitic, or mycorrhizal mechanisms. Mushrooms are generally seasonal, preferring cold, humid, and damp environments. An estimated 2,189 out of the 14,000 described species of mushrooms are considered edible.

Mushrooms have long been consumed globally, including in Sri Lanka. They serve as supplementary or functional food sources and have significant medicinal potential. Mushrooms are rich in proteins, carbohydrates, fibers, and minerals, with minimal fat content. Their consumption is associated with various health advantages, including anti-tumor, antimicrobial, antioxidant, antilipidemic, antidiabetic, anti-inflammatory, hepatoprotective, and immunomodulatory properties. Therefore, advocating for effectively utilizing wild edible mushrooms could benefit mankind. Since ancient times, Sri Lankans have been aware of and consumed wild edible mushrooms, yet this knowledge remains largely confined to local communities with limited dissemination beyond them. Most wild edible mushrooms in Sri Lanka thrive in wet and intermediate zones. According to literature, approximately twenty-five species of wild mushrooms are consumed by rural communities in Sri Lanka. Examples include *Auricularia auricula, Calocybe indica, Lentinus squarrosulus, L. sajor-caju, Macrocybe gigantea, Pleurotus djamor, P. giganteus, Schizophyllum commune, Termitomyces eurrhizus, T. heimii, T. microcarpus, Tremella fuciformis* and *Volvariella volvacea*. Tropical and subtropical regions, including Sri Lanka, are rich in biodiversity, providing an intriguing opportunity to explore novel mushroom species.

Identifying wild edible mushrooms

The conventional approach for taxonomic identification of wild edible mushrooms has involved morphological characteristics, which can be misleading when differentiating closely related species or strains. Conducting molecular characterization along with morphological studies is preferable to establish a more robust taxonomy and resolve taxonomic problems. DNA barcoding and phylogenetic analysis ensure more accurate and reliable identification of the mushrooms. The internal transcribed spacer (ITS) region is the standard barcoding marker for the identification of mushrooms. Although the ITS region is highly effective as a barcoding marker, using it alone for identification might not always be sufficient, necessitating the sequencing of additional marker genes (nrLSU, nrSSU, RPB1, RPB2 and EF-1α) for more precise species-level identification.

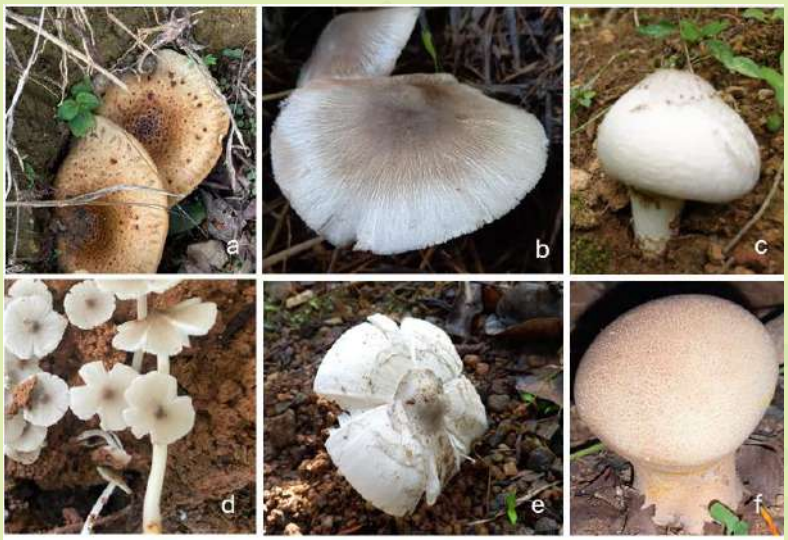

Figure 1: Some wild edible mushrooms in Sri Lanka. a. *Pleurotus giganteus*. b. *Volvariella volvacea*. c. *Termitomyces heimii* d. *T. microcarpus*. e. *T. heimii*. f. *Calvatia candida*.

Accurate identification ensures the safe and effective utilization of wild edible mushrooms, maximizing their benefits while minimizing the risks of poisoning.

Recent research on wild edible mushrooms in Sri Lanka

Research on wild edible mushrooms in Sri Lanka has been relatively limited. Only a few, recent studies conducted by various scientists focusing on taxonomy, phylogeny, cultivation, and nutritional analysis are available for now.

Recently, morphological and molecular characterization of six wild edible mushrooms: *Calvatia candida, P. giganteus, S. radiatum, T. heimii, T. microcarpus,* and *V. volvacea* was conducted. The study identified *C. candida* and *S. radiatum* as new records for Sri Lanka and provided molecular sequence data for *V. volvacea*, that was previously unavailable in the country. Moreover, *Boletellus emodensis, L. squarrosulus, L. sajor-caju, M. gigantea, P. djamor, P. giganteus, T. eurrhizus, T. heimii, T. microcarpus* and *Tremella fuciformis* are among the wild edible mushrooms documented in Sri Lanka, with DNA sequence data accessible in GenBank.

Research into various cultivation techniques for wild edible mushrooms such as *S. commune, L. sajor-caju, L. squarrosulus* and *P. tuber-regium* are underway in Sri Lanka, albeit in initial stages. Commercial cultivation of *V. volvacea* exists, and research has focused on improving cultivation methods for this mushroom species within the country using locally available raw materials. A recent study explored the commercial cultivation potential of *P. giganteus,* using a sawdust-based compost media. *Termitomyces* mushrooms are prized for their exceptional texture and flavor, though they are exclusively harvested from the wild. Cultivation is challenging due to their symbiosis with termites. The absence of understanding regarding their cultivation, life cycle, and edibility complicates attempts to domesticate Sri Lankan wild mushrooms.

Studies have highlighted the medicinal and dietary significance of wild edible mushrooms in Sri Lanka. The nutrient analysis of three *Termitomyces (T. eurrhizus, T. heimii, T. microcarpus)* and four other wild edible mushroom species *(Auricularia sp., L. squarrosulus, P. djamor and S. commune)* revealed a high content of protein, unsaturated fatty acids, and fibre, establishing them as valuable nutritional sources. *Agaricus fulvoalbus* has demonstrated medicinal properties attributed to its potential antibacterial, antifungal, and antioxidant activities.

Challenges and prospects

The global population increase necessitates exploring alternative food sources such as wild edible mushrooms for food security. Despite the abundance of wild edible mushrooms in Sri Lanka, inadequate information hinders their exploitation. Further research on functional and medicinal properties, ecology, accurate identification, and ethnomycology serves as vital component of mycological research.

Sri Lankan wild edible mushrooms have not been extensively studied, and existing knowledge is fragmented. Efforts to accurately identify wild edible mushroom species in Sri Lanka are made more challenging using synonyms and the presence of duplicate entries. Addressing these issues requires collaboration among researchers and the establishment of standardized taxonomic frameworks. Molecular techniques such as DNA barcoding with morphological characterization are crucial for precise species identification. Updating the knowledge enhances understanding of mushroom diversity, conservation, and potential applications in food, medicine, and biotechnology, offering pathways to leverage wild mushrooms for income and nutrition in local communities, and ensuring sustainable utilization amid global challenges.

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How to become a member of SLAMPP?

For those who are interested in SLAMPP and its activities, and would like to become part of national community who are engaging in scientific, educational and community relations of Mycology and plant pathology can become a member of the team.

Eligibility

(i) **Regular member**

Any person possessing at least a bachelor's degree from a recognized University in Biological, Agricultural Sciences, Mycology, Plant Pathology or any related discipline or Equivalent qualifications is eligible for Regular Membership.

(ii) **Affiliated member**

Any person or a group of persons associated with Mycology and Plant Pathology or a related discipline or activity and deemed acceptable to the Association on the grounds of training, experience or position is eligible for Affiliated Membership.

(iii) **Student member**

Any postgraduate students in Mycology, Plant Pathology or a related discipline, who are not employed on a full-time basis, may apply for student membership. Membership should be renewed on an annual basis. Applications must be accompanied by appropriate documentation certified by the Head of the Department of the University/Sectional Head of the Institution.

(iv) **Honorary member**

Any member of the Association may nominate a person for election as an Honorary Member on the grounds of an outstanding contribution to Mycology, Plant Pathology or to the Association.

Written nominations, proposed and seconded by two members, must be submitted to the Secretary, SLAMPP giving sufficient time before the Annual/Biennial General Meeting to allow inclusion in the agenda.

The nomination shall be announced at the Annual/Biennial General Meeting, and election shall then be by ballot.

The President of The Association shall present Honorary Members with membership certificates at a social function held during the Symposium.

Application can be obtained at: http://slampp.org.lk and by email through slampp@gmail.com

Note: Each application will be individually considered by the Executive Committee and the decision of the Executive Committee will be informed to the successful applicants who will become a member upon payment of the appropriate membership fee. Individual members are entitled to receive SLAMMP Newsletter and attend or participate fully in the meetings, symposia, conferences and any other activity organized for membership by the SLAMPP.

Membership/Subscription fees (for 2024)

Regular/Associate Member	**Rs. 1000/=**
Life member	**Rs. 5000/=**
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Payment of membership fee: Remit money at the Bank of Ceylon, Peradeniya Branch Account No. 8372739 and attach the scanned copy of the deposit slip and send to slampplk@gmail.com. Cheques written in favor of "Sri Lanka Association for Mycology and Plant Pathology' must be sent to the Treasurer/SLAMPP.

Upcoming conferences in Plant Pathology and Mycology

XX International Plant Protection Congress
1 July – 5 July, 2024
Athens, Greece
Website: www.ippcathens2024.gr

International Conference on Plant Pathogenic Bacteria & Biocontrol 2024
7 July – 12 July, 2024
Virginia Tech, Blacksburg, Virginia, United States
Website: icppbbiocontrol2024.org

Triennial Conference of the European Association for Potato Research (EAPR)
7 July – 12 July, 2024
Oslo, Norway
Website: nibio.pameldingssystem.no/eapr2024

miCROPe 2024 conference - Microbe-assisted crop production – opportunities, challenges and needs
15 July – 18 July, 2024
Vienna, Austria
Website: www.micrope.org

Plant Health 2024
27 July – 31 July, 2024
Memphis, Tennessee, USA
Website: www.apsnet.org/meetings/annual/Pages/default.aspx

Asian Conference on Plant Pathology 2024
3 August – 7 August, 2024
Changchun, Jilin, China
Website: acpp2024.tri-think.cn

Australasian Soilborne Disease Symposium 2024
26 August – 29 August, 2024
Kingscliffe, New South Wales, Australia
Website: www.asds-apps.com/

11th IUFRO Phytophthora in Forests and Natural Ecosystems working party
8 September – 13 September, 2024
Bay of Islands (Paihia), New Zealand
Website: www.scienceevents.co.nz/iufro2024

International Phytobiomes Conference 2024
8 October – 10 October, 2024
St. Louis, MO, USA
Website: phytobiomesconference.org

Australasian plant virology workshop (APVW 2024)
29 October – 31 October, 2024
Gold Coast, Australia
Contact and Email: Fiona.Filardo@daf.qld.gov.au
Website: apvw-2024-.w.kamevents.currinda.com

9th ISHS International Postharvest Symposium
11 November – 15 November, 2024
Rotorua, New Zealand
Website: scienceevents.co.nz/postharvest2024

17th Congress of the Mediterranean Phytopathological Union - New phytopathology frontiers of research and education for plant health and food safety
7 July – 10 July, 2025
Ciheam-Bari, Italy
Contact and Email: Anna Maria D'Onghia,
e-mail: mpu2025@iamb.it
Website: www.mpunion.org

13th International Workshop on Grapevine Trunk Diseases
21 July – 25 July, 2025
Ensenada, Baja California, México
Contact and Email: Rufina Hernández
13iwgtd@cicese.mx
Website (under construction): 13iwgtd.cicese.mx

14th Arab Congress of Plant Protection Sciences
3 November – 7 November, 2025
Algeria
Contact and Email: hou.boureghda@gmail.com
Website will be developed soon.

International Congress of Plant Pathology 2028
19 August – 25 August, 2028
Gold Coast, Queensland, Australia
Website: www.icpp2028.org

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