

BitSoc News

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e-Circulated Newsletter

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Biotechnology Society of Wayamba University of Sri Lanka (BitSoc)

Department of Biotechnology

Faculty of Agriculture and Plantation Management

Wayamba University of Sri Lanka



Biotechnology Day 2021

Biotechnology Day 2021 was held as a hybrid event on 22nd December 2021. Chief Guest, Prof. J.C. Edirisinghe, Dean, FAPM, WUSL, Guest Speaker, Prof. Nilwala Kottegoda, Professor in Chemistry from University of Sri Jayawardhanapura, Heads of the Departments, Academic staff, Academic Supportive staff and Non-academic staff, undergraduate students representing all four batches of the faculty were present for the inauguration. Around 300 participants were joined with the event through online platform. The Agenda mainly consisted,



- Guest speech by Prof. Nilwala Kottegoda on “Lilliputians to Win Back the Granary of Indian Ocean” highlighting the importance of nanotechnology based applications to retain the sustainability in the country.



- Launching of the official web site of the BitSoc, the opportunity hub of the biotechnology specialization students to link with past alumni, to post creative ideas, articles *etc*, to gather information on biotechnology and to seek national and international level postgraduate and job opportunities.

- Online quiz competition which consisted MCQ type questions based on agriculture, general knowledge, IQs to be completed within given time period. Three best performers were selected among 180 participants and awarded with certificates. The event was also coloured by entertainment activates by the biotechnology specialization students followed by the awarding ceremony.



Is human blood ever any color other than red?



Yes, human blood is green in the deep ocean.



Official Web Site of the Biotechnology Society

For the first time in the history, the Department of Biotechnology officially launched the website of the Biotechnology Society, which gives the opportunity to stay connected and be updated. The launching of the website was done by Prof. J.C. Edirisinghe, Dean, FAPM, WUSL on 22nd December 2021. The site contains many options such as a blog, forums, member database and news. The blog



will allow anyone to publish and showcase their creative contents. The database consists details about Biotechnology related personal including lecturers and alumni. It will give an opportunity to all users to explore the professional world, to seek job opportunities and scholarships by connecting with the members in the database.

In the forums, ideas can be exchanged and issues relevant to agriculture and science can be discussed by uploading posts. Through this page, information on latest researches, books, patents *etc* related to biotechnology can be gathered. The past issues of the BitSoc Newsletters are also available for those who interest about past events and the history of the Department. The web address of this website is www.bitsoc.wyb.ac.lk.



How Biotech crops mitigate carbon release into the atmosphere?

When farmers plow their fields to kill weeds, it disturbs the soil and can release carbon into the atmosphere. Biotech crops allow farmers to control weeds without plowing, leaving the carbon in the ground.



Biofertilizer for Paddy Cultivation

Department of Biotechnology has immensely contributed to a new cyanobacteria based biofertilizer developed by Dr B.L.W.K. Balasooriya and her research team through an on-going multi-institute collaborative research project (NRC-TO-16-07) starting from 2016. She has recently introduced the successfully developed product to the Agricultural Extension (AE) officers of the Department of Agriculture in Anuradhapura and Polonnaruwa districts together with other technologies developed by the collaborative scientists of the project as an Eco-Friendly Farming Technologies package for paddy cultivation. Two awareness programmes were held in Polonnaruwa and Anuradhapura on 30th and 31st of March 2022 with the participation of Mr. Jagath Sudasinghe, Director/ Agricultural-Extension, Ms M. Ramyalatha, Deputy Director/ Agricultural Extension (Anuradhapura), Mr R.P. Upali, Deputy Director/ Agricultural Extension (Polonnaruwa) and all AE officers of the two districts. The programmes were organized and lead by Prof. R.S. Dharmakeerthi, Principal Investigator, NRC-TO-16-07 project and several other collaborative scientists from University of Peradeniya (Prof. W.A.U. Vitharana, Prof. W.S. Dandeniya) and Rice Research and Development Institute, Batalagoda (Dr R.M.U.K. Rathnayaka) participated as resource persons.



NRC-TO-16-07: WP2 Stakeholder Awareness on Biofertilizers 30-31/3/2022 Polonnaruwa, Anuradhapura

සමාජානුකූලවීරියා හඳුනා ගැනීම.

- සමාජානුකූලවීරියා (හීල බරික් ඇල්ගී ලෙසද හැඳින්වේ) යනු ස්ලොස් සහ තෙත් ජලාශවල බහුල ලෙස ජීවත් වන ප්‍රභාසංශ්ලේෂණය කළ හැකි පාරිභෝග්‍යී ඇල්ගී වූ අතර ඔවුන් ක්ෂුද්‍ර ජීවීන් සෑදීමට හැකිවේ.
- සමාජානුකූලවීරියා කාණ්ඩයට එවිට හැඩගත් සහ ප්‍රතිඵලයන්ගෙන් යුත් එවිට විශේෂ දහන් සහනක් ලැබුණි වේ.
- ආහාර දැනුවත්, ඕසංචි, ඉපෙට් දුර්වල, ඉපෙට් ආහාරය, ඉපෙට් ප්‍රතිකර්ම වැනි එවිට ක්ෂේත්‍රවල සමාජානුකූලවීරියාවන්ගේ ප්‍රයෝජනවත් යෙදවීම් දැන.
- සිදුරන් පාරිභෝග්‍යී ප්‍රාදේශීය ආහාර නිෂ්පාදනයට, පිත්තියන් නිෂ්පාදනයට සහ වායුගෝලීය කාබන් ධාමයන්ගේ ප්‍රමාණය අඩු කිරීමට දායක වන ප්‍රධාන ජීවීන් සෑදීමටය.
- එබැවින් සමාජානුකූලවීරියා පාරිභෝග්‍යී කිරීමට එවිට සඳහා ආර්ථික කළ හැකි ඉපෙට් සම්පන්න ලෙස ඇලුණේ.

කුඹුරු පසට නැගීමෙන් සැපයීමට සමාජානුකූලවීරියා ඉපෙට් පොහොර භාවිතා කරමු.

- NRC-TO-16-07 පර්යේෂණ ව්‍යාපෘතිය හරහා දේශීය කුඹුරු වලින් ආලෝකයෙන් පාලන මධ්‍යස්ථ නිදහස් වීරියාවක හා මුල් ආශ්‍රිතව ජීවත්වන සමාජානුකූලවීරියා විශේෂවල එකතුවක් ඉපෙට් පොහොරක් ලෙස නිෂ්පාදනය කර ඇත.
- ඉපෙට් ක්ෂුද්‍ර ජීවීන්ට පසෙහි නැගීමට නිර කිරීමේ හැකියාව ඇත.
- එවිට ජලාශවල සිදු කරන ලද ක්ෂේත්‍ර පර්යේෂණ හරහා ඉපෙට් ඉපෙට් පොහොර පෙරදිවීමේ යුතිය පොහොර 35-40% කින් අඩු කිරීමේ හැකියාව ඇත.
- දේශීය නිෂ්පාදනය කිරීම මගින් විශාල වශයෙන් විදේශ විනිමය වියදම් අඩු කිරීමේ හැකියාව ඇත.
- පරිසර හිතකාමී කාර්මික පොහොර කෘෂිකර්මාන්තයට සුදුසු ය.

Workshop Material prepared by Dr. B.L.W.K. Balasooriya, Department of Biotechnology, Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka.

BG NITROGEN BIOFERTILIZER

BG නැගීමෙන් ඉපෙට් පොහොර

BG නැගීමෙන් ඉපෙට් පොහොර ක්ෂුද්‍ර ජීවීන් යොදාගෙන කුඹුරු පසට නැගීමෙන් සැපයිය හැකි නිෂ්පාදනයකි.

- කල් ඉකුත්වන දිනය: මාස තුනක් පමණ.
- ඉපෙට් සහනවිය - ඒකකයක ඉපෙට් $10^8 - 10^{10}$.
- ක්ෂේත්‍රයේ යෙදීම සඳහා නිර්දේශිත කාලය: ඇල සිටුවීමෙන් සති 3-4 කට පසුව.
- යෙදුම් අනුපාතය: වර්ග මීටරයකට එක් ඒකකයක්.
- බෝලය කඩා ගන්නා ඉපෙට් යලයෙන් යට වූ පසකයන්.
- විල්ලානුකුල ඉපෙට් කෘෂිකර්මාන්ත පෙරදිවීම සහිතව ඉපෙට් සහ පසු යොදාගත එසා.
- BG ඉපෙට් පොහොර විෂ සහිත නොවේ. කුඹුරු ඉපෙට් කිරීමට නොවේ.

වැඩිදුර තොරතුරු සඳහා කරුණාකර විමසන්න:

ආචාර්ය වර්ග චාලසූරිය,
ඉපෙට් හානිෂ්ණ ලෙසානුකූලවීරියා,
කෘෂිකර්ම හා වැවිලි කළමනාකරණ පීඨය,
ශ්‍රී ලංකා වයඹ විශ්වවිද්‍යාලය, මාතලේ, පොත්තරිලි.
0719367648, Wajira.balasooriya@gmail.com

What is the preferred expression system for recombinant therapeutic protein (RTP) production?

Chinese hamster ovary cells. These types of cells grew quickly and could create a number of proteins.



Congratulations

Achievements of the Staff



Prof. N.S. Kottearachchi, Professor/ Department of Biotechnology was awarded a certificate of recognition for conducting high quality research and publishing in indexed journals in year of 2020 at 6th Wayamba University Research Awards (WURA) held on 03rd December 2021 at Wayamba University of Sri Lanka.

Dr D.R. Gimhani, Senior Lecturer/ Department of Biotechnology was awarded merit awards of most outstanding senior researcher (for Scientific Research published in year 2020) and most outstanding young researcher- Faculty Level (for Scientific Research published in year 2020) and a certificate of recognition for conducting high-quality research and publishing in indexed journals in year of 2020 at 6th Wayamba University Research Awards (WURA) held on 03rd December 2021 at Wayamba University of Sri Lanka.



She was also selected as the best presenter of the Agricultural Biology and Biotechnology Session in 6th Wayamba University Research Congress (WURC) held on 03rd December 2021 at Wayamba University of Sri Lanka.

Mr Shehan Kurera, Lecturer (Probationary) of the Department of Biotechnology received a scholarship for Doctoral Degree in Marine Life Sciences offered by the Department of Marine Bio Resource Technology at Jeju National University, South Korea. During his PhD program, he aims to specialize in natural products chemistry and cellular interactions.



Are there any parts of the human body that get oxygen directly from the air and not from the blood?

Yes. Upper-layer skin cells and the cells in the front surface of the eyes get a significant amount of oxygen directly from the air rather than from the blood.



Congratulations

Achievements of BitSoc Alumni

Award for Outstanding Research Achievements During PhD at Jeju National University



Dr D. S. Liyanage, a student of the 2009/2010 Batch of the Department of Biotechnology, was awarded a Jeju National University outstanding research award for his publications and research works during the PhD program. His research work is mainly on genomic selection and genomic characterization of various proteins from marine animals. He completed his PhD in February 2022 related to the use of deep learning for genomic selection.

Award for Outstanding Teaching Excellence



Ms Bavithira Suganthan, PhD Candidate at the School of Chemical, Materials and Biomedical Engineering, The University of Georgia, received an "Outstanding Teaching Award" from Graduate School, The University of Georgia, USA. This award honors the top 10% of teaching and laboratory assistants who have excelled in the performance of their instructional responsibilities. The primary criterion for this award is the demonstration of superior teaching skills. She is an alumna of the Department of Biotechnology (2007/2008 Batch). She also worked as a Demonstrator and Assistant Lecturer in the Department of Biotechnology for two years.

PhD Scholarships

Ms Hiruni Fernando was awarded University of Sydney International Strategic Tuition Fee and Stipend Scholarship to follow a PhD, at University of Sydney, starting from 1st January 2022. She is doing her research at Department of Environment and Life Sciences, at University of Sydney under the research title "Organizing Plant Architecture".



Ms Vidyamali Koodalugodarachchi was awarded a scholarship to pursue a direct PhD in Biodiversity and Ethnobiology offered by Faculty of Science, Chiang Mai University, Thailand. During her 5 year PhD programme she is aiming to study on diversity analysis related with endophytic, saprobic and pathogenic fungal species.



Why are viruses hard to kill?

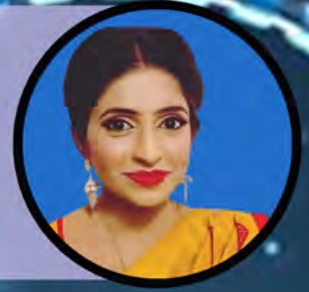
Over 1016 human immune deficiency virus genomes are produced daily on the entire planet.



Congratulations

MSc Scholarship

Ms Ramesha Eshani received a scholarship to pursue a MSc Degree in Department of the Food Science and Technology, Jeonbuk National University, South Korea. During the program, she wishes to study the confirmation of lysogenic conversion in *Bacillus subtilis* and identification of bacteria receptors for *bacillus* bacteriophages.



Dr Dharmawansa Senadhira Award & IPMP Award



Ms H.K.T. Dinushka (Batch 2014/ 2015) became the top of the graduating batch of 2022. She obtained 3.93 GPA and received two gold medals for the excellence performance as follows;

- IPMP Gold Medal- Best overall performance in the Faculty of Agriculture and Plantation Management.
- Dr Dharmawansa Senadhira Memorial Gold Medal- Best performance in Department of Biotechnology.

Research Publications

Ms W.L.N.L. Fernando, a temporary demonstrator of the Department of Biotechnology has presented her final year research findings under the theme of "Characterization of Plant-parasitic Nematodes in *Livistona rotundifolia*" at the International conference of emerging technologies and innovation (ICEIT) organized by Sri Jayewardenepura University and it was held on November 25th and 26th 2021. She also won the best presenter award under the track of Biotechnology, bioprocessing and bioengineering. The research has been conducted under the supervision of Dr K.M. Mewan.



What causes Petrichor, the earthy smell after it's been raining?

It's actually caused by the rain drops get contact with ozone, geosmin released by soil bacteria called actinomycetes and volatile oils secreted by different plants.



Congratulations

Research Publications

Ms G.P.G.I. Thakshila, recently completed her specialization at the Department of Biotechnology presented her research findings under the theme of "Assessment of Drought Tolerance Ability of Selected Finger Millet Varieties in Sri Lanka" at the 2nd International Conference of Sri Lanka Institute of Information Technology (SICASH 2021), which was held on 3rd and 4th December 2021 and she was able to achieve the award for the best research paper under the track of Natural Sciences. The research has been conducted under the supervision of Dr D.R. Gimhani and Ms V. Koodalugodaarachchi.



Achievements of Undergraduates

Orator 2021

Among more than 200 undergraduate contestants, Mr Kanchana Madanayake, a 3rd year biotechnology specialization student was awarded the second place in 'Orator 21' an interuniversity oratory competition organized by Sri Lanka Technological Campus (SLTC) on 02nd November 2021 for the topic 'Impact of Innovation and Entrepreneurship Towards the Country's Economy'.



Seethala Eethala



Mr Kanchana Madanayake, a 3rd year biotechnology specialization student participated as a speaker for the episode themed 'Specific Goals and Youth' of the 'Seethala Eethala' television programme telecasted on 22nd March 2022 by Charana TV, where the youth of Sri Lanka spoke about timely and controversial issues all around the world.

Editor:

Dr P.S. Warakagoda, Senior Lecturer, Department of Biotechnology, FAPM

Editorial assistance:

Ms W.C. Rangika, Temporary Demonstrator, Department of Biotechnology, FAPM

Design and paper setting:

Mr G.D. Ashitha U. Kumara, 2nd year, B.Sc. (Agriculture) undergraduate, FAPM



What is CINDELA therapy?

A new therapy called CINDELA is reported by scientists in South Korea, which uses CRISPR-Cas9 to kill cancer cells without harming normal tissue.

