



AMRITA
VISHWA VIDYAPEETHAM
(Deemed-to-be University)

School of
Agricultural Sciences

J P Nagar, Arasampalayam, Coimbatore, Tamil Nadu – 642 109.



The sun shines down, and its image reflects in a thousand different pots filled with water. The reflections are many, but they are each reflecting the same sun. Similarly, when we come to know who we truly are, we will see ourselves in all people



Amma, Sri Mata Amritanandamayi Devi

Chancellor, Amrita Vishwa Vidyapeetham



**ASA BIMONTHLY
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STUDENTS' ACTIVITIES

Experiential Learning Program

a. Mushroom Production Technology

Final year students (2019 batch) registered for the Experiential Learning Program (ELP) during the last semester with module 19PAT411, Mushroom Cultivation Technology (0+10) with the course teacher Dr. Parthasarathy S, Assistant Professor (Plant Pathology). The school offered operational grants, training, and guidelines for performing the Experiential Learning

Modules (ELM). This program provided a unique opportunity for hands-on learning, skill development, and the exploration of entrepreneurial prospects related to mushroom cultivation.

The primary focus of the ELP was to immerse students in the intricacies of mushroom cultivation technology and familiarize them with contemporary farming techniques within a practical

setting. The students delved into various aspects of high-tech mushroom production, including the cultivation of oyster mushrooms, milky mushrooms, paddy straw mushrooms, and button mushrooms. Additionally, they explored the cultivation of high-value medicinal mushrooms, emphasizing the broader spectrum of opportunities within the field.



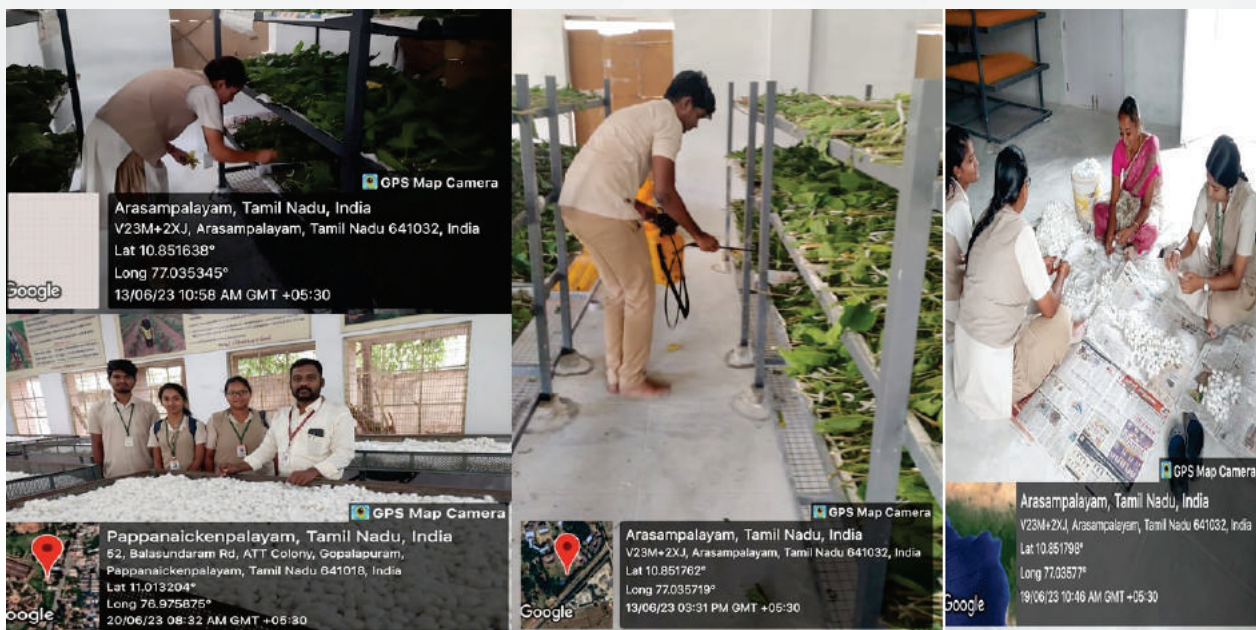
b. Commercial Sericulture

As part of ELP, students from the final year (2019 Batch) attended 19AEN412 Commercial Sericulture (0+10) with the course teacher,

Dr. Aravind J, Assistant Professor (Agricultural Entomology). Students were exposed to mulberry cultivation techniques, silkworm-rearing

practices, and value-addition practices in sericulture. They practically demonstrated and imparted silkworm-rearing

techniques. Students also acquired practical skills by rearing silkworm cocoons of 20 DFLS (Disease-free laying eggs) in the ASA Silkworm Rearing unit, and they harvested 14.7 Kg of Silkworm cocoons for the past three months. The product was marketed to Silkworm Rearing Center, Coimbatore. In the silkworm rearing center, grading was done by our students and fetched a reasonable price of 489 Rs/Kg in the cocoon market.



c. Horticulture

As part of ELP, a few final year students (2019 batch) of ASA attended the 19HOR412-Floriculture and Landscaping (0+10) module with the course teacher Dr. S. Kumaresan, Assistant Professor (Horticulture). Within this module, students energetically produced dry flower items, showcasing their creativity through the crafting of diverse products such as keychains, pendants, potpourri, terrariums, miniature gardens, and more.



d. Agriculture Waste Management

As part of ELP, the 19AGM412 - Agriculture Waste Management (0+10) module was attended by 23 students from the 2019 batch with the course teacher Dr. Boopathi G, Assistant Professor (Agricultural Engineering). During the course, the students delved into the theoretical aspects of effectively utilizing agricultural residues, namely biochar, bioethanol, and biogas production. They designed a compact pyrolysis reactor and integrated it with gas pipelines to harness the released volatiles, which in turn support the heating process of the pyrolysis reactor. This innovative approach rendered the reactor self-sustaining and remarkably energy



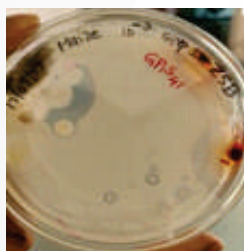
efficient. This setup successfully generated approximately 30 kg of biochar from various agricultural residues, including sawdust, rice

husks, coconut shells, spent tea waste, and Sterculia Foetida and Swietenia Mahogany shells.

e. Bio-agents and Bio-fertilizer



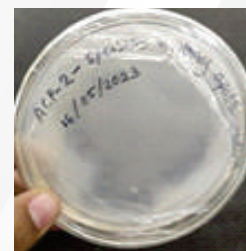
Pseudomonas fluorescence



Zinc solubilizing bacteria



Azotobacter



Phosphobacteria

As part of ELP, 19AGM411 - Production Technology Bio-agents and Biofertilizer (0+10) module was attended by 23 students from the 2019 batch with the course teacher Dr. Iniyakumar, M., Assistant Professor (Agricultural Microbiology). In this course, the students have isolated different bio-inoculants capable of N fixation, P solubilization, K release Zn solubilization, and Plant growth promotion. Few fungi capable of entomopathogenic activity were screened. A methylophilic bacterium capable of mitigating drought, namely Pink Pigmented Facultative Methylophilic Bacteria (PPFM), was isolated from different sources and characterized. All the microbes were tested for Plant Growth growth-promoting activity (PGP), and a consortium consisting of N, P, K, and Zn was prepared and used as enrichment in the vermicomposting for improved biomanure production.

f. Food Processing



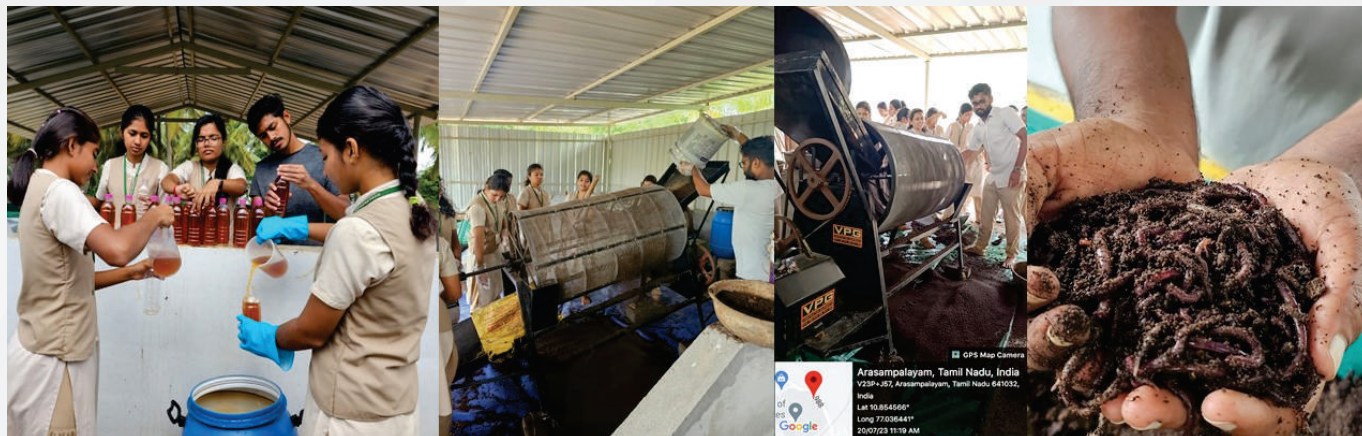
As part of the ELP to the final year B.Sc. (Agri.) program, the Department of Horticulture and Post-Harvest Technology handled the 19FSN411 – Food Processing (0+10) course to 23 students of 2019 batch with the course teacher Dr. Thirukkumar S, Assistant Professor (Food Science and Nutrition). Students utilized the FSSAI-certified ASA laboratory for preparing and commercializing various value-added food products. Students used the instruments and multiple machinery for processing fruits and vegetable-based products, cereal-based products, spices powder, and bakery products in their ELP course. The prepared products were appropriately packed in suitable containers and sold to the students through the Institution's Cafeteria. Students were involved in the preparation of Minimally processed fruits and dehydrated tomatoes.

g. Commercial Horticulture

As part of ELP, the 19HOR411 - Commercial Horticulture (0+10) module was attended by 24 students from the 2019 batch with the course teacher Dr. R. Priya, Assistant Professor (Horticulture). Students involved in producing mango, jackfruit, and acid lime rootstocks. These rootstocks were intended for use in grafting purposes.

h. Organic Production Technology

In the eighth semester of the 2019 batch, twenty-four final-year students enrolled in the 19AGR411-Organic Production Technology (0–10) with the course teacher Dr. Mageshen VR, Assistant Professor (Soil Science and Agricultural Chemistry). The primary goals of this ELP program were to introduce students to composting techniques, teach them how to construct a commercial-sized composting facility and familiarize students with making diverse organic solutions viz., Panchagavya, fish amino acid, egg amino acid, EM solution, *Amutham* solution, etc.



Study tour for 2019 batch students

a. Agricultural Research Station, Thirupathisaram

Students of the 2019 batch were taken to Agricultural Research Station (ARS), Thirupathisaram, on June 26, 2023, as part of the course 19AEX414 Educational Tour to learn rice breeding cultivation in high rainfall zones. The course teacher, Dr. S. Parthasarathy, Assistant Professor (Plant Pathology), Dr. Thirukkumar S., Assistant Professor (Food Science & Nutrition), Ms. Mahalakshmi D, Physical Instructor, and Mr. Vijayakumar P accompanied the students and facilitated the institutional visits. Students learned about the activities of the research station on the empowerment of farming practices in Kanyakumari District and rice varieties released in the region.



b. Krishi Vigyan Kendra, Nagercoil

Students of the 2019 batch visited Krishi Vigyan Kendra (KVK), Nagercoil, on June 26, 2023, to learn about various extension activities and programs done by the institute for rural youth and women empowerment. Students were exposed to agripreneurship units such as goat rearing, mushroom cultivation, poultry, and bee-keeping demonstration plots in the institute.



c. Floriculture Research Station, Thovalai

The final year students of the 2019 batch were taken to the Floriculture Research Station (FRS), Thovalai, on June 26, 2023, in an afternoon session to learn various developmental and research activities of the institute for flower crops varietal development, marketing, extension, and value addition in the region. Students gained exposure to the production, processing, and marketing of various cut and commercial flowers in the area.



d. Central Tuber Crop Research Institute, Thiruvananthapuram

Students of the 2019 batch were taken to a one-day exposure visit at Central Tuber Crop Research Institute (CTCRI), Thiruvananthapuram, on June 27, 2023, to learn various research and extension activities of the institute for tropical tuber crops varietal development, farmer's training, technologies, and value additions. Dr. Sheela Immanuel,

Principal Scientist (Extension), briefed CTCRI mandates, functions, outcomes, and research activities, and her team demonstrated e-crop IoT devices for Smart-farming tools implemented in Kerala. Students visited and learned about the various activities of the CTCRI Museum, Biopesticide Laboratory, and Techno Incubation Centres in the CTCRI Complex.



e. Horticulture Research Station, Pechiparai

The final year (2019 batch) students were taken to Horticulture Research Station (HRS), Pechiparai, on June 28, 2023, to learn about the institute's various developmental and research activities. Students gained exposure to management techniques to improve the yield and quality of Mango, Banana, Pineapple, Solo Jack, Kudampuli, Nutmug, Alspice, Tree spices, Pepper, Clove, Rubber, and vegetables. Students visited commercial nurseries and learned about different propagation techniques for herbs and aromatic crops and their integrated pest and disease management.



f. Central Plantation Crop Research Institute, Kayamkulam

Students of the 2019 batch were taken to a one-day exposure visit at Central Plantation Crop Research Institute (CPCRI), Kayamkulam, on June 30, 2023, to learn various research and outreach activities of the institute for plantation crops varietal development, farmer's training, technologies, and programs. Dr. Regi Jacob Thomas, Principal Scientist

(Breeding), briefed CPCRI mandates, functions, outcomes, and research activities. Dr. Joseph Rajkumar, Principal Scientist (Entomology), explained integrated pest and disease management in coconut. Dr. Shareefa M, Senior Scientist (Biotechnology), handled the session on tissue culture in coconut. Dr. Jeena Mathew, Senior Scientist (Soil Chemistry), explained soil nutrient management for coconut. Further, Dr. Nihad K, Senior Scientist (Horticulture), elaborated on inter-cultivation practices in coconut plantations. Students visited and learned about the various activities of the Central Tuber Crops Research Institute (CTCRI) Museum, Biopesticide Laboratory, and Techno Incubation Centres in the CTCRI Complex.



Guest Lecture on How to Write Research and Review Article

Dr. Sudheesh Manalil, Associate Dean, ASA, gave a guest lecture on "How to Write Research and Review Articles" on June 23, 2023, as part of the courses 19AEX113- Communication Skills and Personality Development and 19AEX313- Agricultural Journalism. During the session, he emphasized the value of research and publication and how to select a journal for publication, gather articles, and use the software referencing tool Endnote. Additionally, the F test for comparing a set of data was demonstrated.



COLLEGE EVENTS



999 CHALLENGE PARTICIPATION

Amrita School of Agricultural Sciences, Arasampalayam, Coimbatore, participated in the 9-9-9 Challenge from May 18, 2023 to May 26, 2023. The '9-9-9 challenge' is an initiative of integrated, holistic healthcare - Mind, Body, and Environment, initiated by an official working group of C20. This challenge seeks to demonstrate the vital impact of yoga and meditation in our lives. The 9-9-9 challenge is to perform nine rounds of Surya Namaskar and 9 minutes of World Peace Meditation and commit to doing this daily for nine days.

Dr. Sudheesh Manalil, Associate Dean, ASA, inaugurated the session, followed by a small introduction about the 9-9-9 challenge by Dr. K. Sivasabari, Ayudh Co-ordinator. Mr. Karthik Raja, Physical Educator and Yoga Instructor, guided the students in doing Surya Namaskars. After a small break, the students had a mediation session followed by the Shanthi mantras.

Throughout the 9-day challenge, the students exhibited great enthusiasm and dedication toward practicing the 9-9-9 challenge. They also learned about the various health benefits of these practices, such as improved flexibility, reduced stress, and increased focus and concentration.

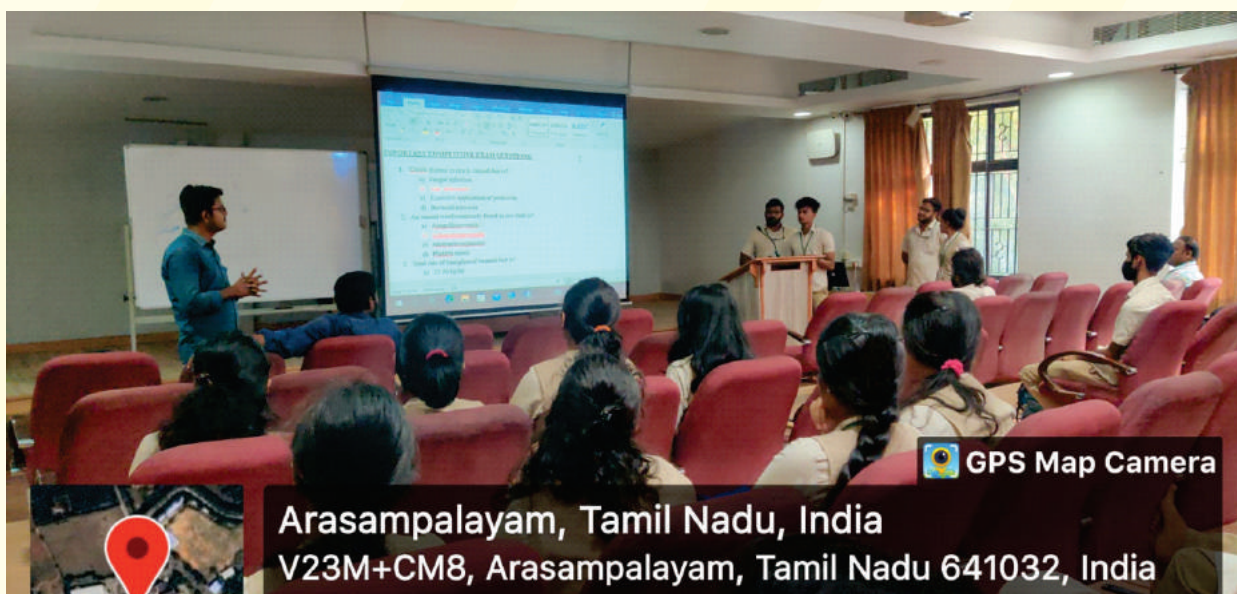
International Yoga Day Celebration

Amrita School of Agricultural Sciences commemorated International Yoga Day on June 21, 2023, with the theme "Humanity" at the ASA Play Ground. The program was organized by Mr. Karthik Raja V and Ms. D. Mahalakshmi, Physical Educators, ASA. Students, faculty, and staff of ASA participated in the event. With full enthusiasm among students and faculty, the event started at 06:30 a.m. and ended at 08:30 a.m.



Career Development Activity

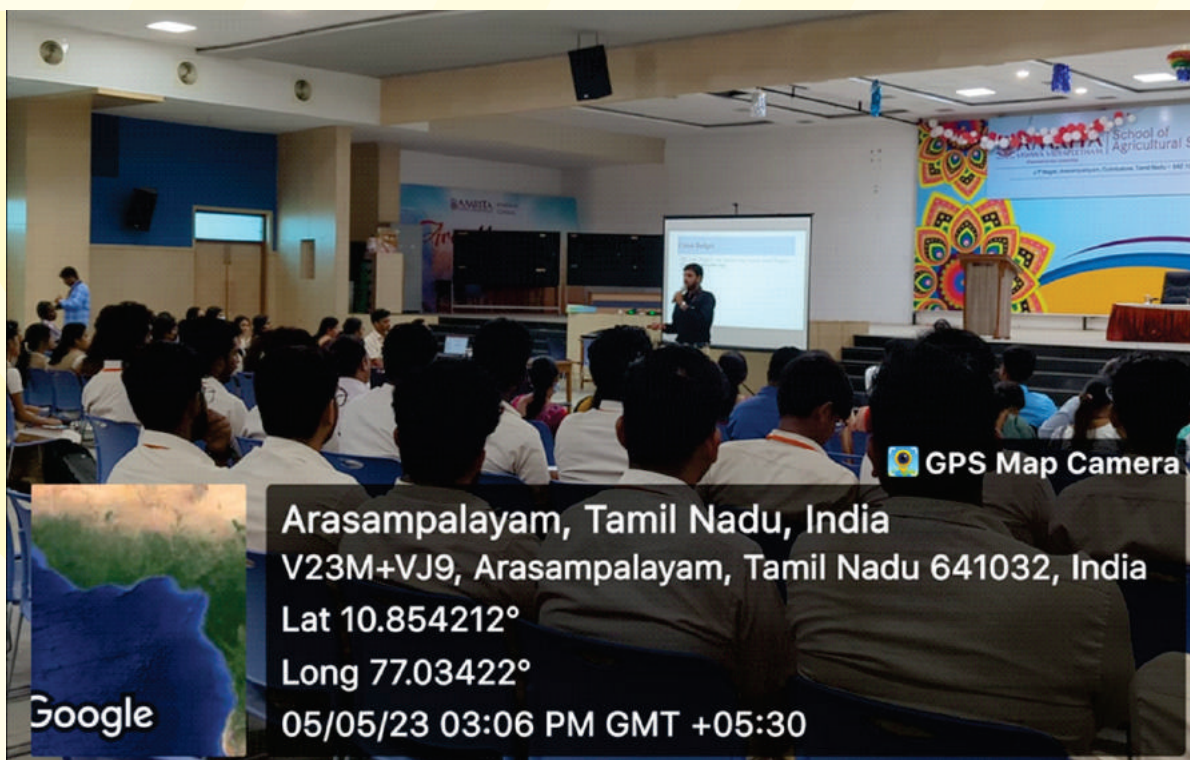
The Career Development Committee of ASA is making special efforts to ensure students' competence in career-related exams. Final-year students (2019 batch) have presented their valuable resource collections as brainstorming and revisions in front of committee members and students. Also, Agro-Industrial Attachment teams presented their practical experience and techniques learned in the industries. Dr. Parthasarathy S and Dr. Aravind J, Co-ordinators of the Career Development Committee, facilitated the event.



Inauguration of Debate Club

With Amma's blessings, Amrita School of Agricultural Sciences inaugurated the Debate Club on May 3, 2023, at ASA Auditorium to inculcate a flair for language among students and to unleash their creative and literary skills. The program commenced with lighting the lamp. The Club was officially inaugurated and offered introductory remarks by Dr. Sudheesh Manalil, Associate Dean, ASA. In his speech, he emphasized the need for literary clubs where students can share their insights and exhibit their intellectual, independent thinking skills. Dr. P. Naveen Kumar, the Debate Club Co-ordinator, gave glimpses of the Budget. Students received detailed information on a nation's income, expenses, and GDP.

Following this, Ms. Maria of the 2020 batch and Ms. Anjoya of the 2022 batch presented the topic 'Implication of Budget on Economy and Agriculture.' In their presentation, they discussed the Priorities of the Budget, like Inclusive Development, Infrastructure, and Investment, Unleashing the Potential, Green Growth, Youth Power, and the Financial Sector: The Debate Club Co-ordinator, Dr. Vanitha. V, Assistant Professor (English), convened the club activities. Eventually, the program ended with the national anthem.



EXTENSION OUTREACH AND DEVELOPMENT

Sadivayal Tribal Farmers Visiting ASA campus

Tribal farmers from Sadivayal Village in Coimbatore visited Amrita School of Agricultural Sciences to learn about research innovations and techniques developed in ASA on May 31, 2023. About 27 tribal farmers attended the event. The program started with a welcome address by Dr. Sudheesh Manalil, Associate Dean, ASA. In his speech, he briefly explained the various farming methods and the research attempts by ASA to the farmers. Further, he highlighted the importance of Pancha Krishi (translated as mixed cropping without row orientation), the traditional farming practice followed by most of the Irular communities of Attappady, Kerala. The farming practice consists of mixing the seeds, namely, millets (Ragi, Eleusine coracana, Cholam, Sorghum bicolor, Thiai, Setaria italica), pulses (Red gram, Cajanus Cajan, Cowpea, Vigna unguiculata, Beans, Phaseolus vulgaris, and Groundnut, Arachis hypogea), traditional varieties of red amaranthus, and wild varieties of tomato, in the field without any row orientation at ASA demo unit.



Further, they visited various successful models developed by final-year students (2019 batch) at the ASA campus as part of their Experiential Learning Programme (ELP) module course. The students elaborated on each component about their experience, methods, and the benefits of mushroom production, Azolla cultivation, and preparation of organic solutions such as Panchgavya, egg extract, and vermicomposting. The farmers visited the Pisciculture unit, where they witnessed the benefits of fish production. They also visited the mulberry orchard, and students explained the sericulture production in the sericulture unit. Later, students demonstrated the module on flowers, fruits, and plantation crop nurseries on campus. The program ended with the distribution plant saplings to the participants by Dr. Sudheesh Manalil, Associate Dean, and Students of the 2019 batch. The visit was organized and accompanied by final-year students (2019 batch) and Dr. Sivaraj P, Assistant Professor (Agricultural Extension).



World Environmental Day Celebrations: Planting Palmyra Saplings

World Environment Day is celebrated every year on June 5, 2023, to commemorate the importance of conserving the environment and raise global awareness to promote positive environmental action to protect nature and the earth. This year's theme is "Solutions to Plastic Pollution." In this regard, Amrita School of Agricultural Sciences and Amrita Vishwa Vidyapeetham celebrated World Environment Day on June 5, 2023, at Sadivayal tribal village. The function started with a special address by Dr. Sudheesh Manalil, Associate Dean, ASA. He highlighted the importance of environmental health and Palmyra bio fence against wild animal attacks, economic benefits for Palmyra, and carbon sequestration per unit area. Further, Dr. Sudheesh Manalil and the Students of ASA (2021 batch) were planting Palmyra trees (*Borassus flabellifer*) saplings at Sadivayal village with the villager's participation. This program was organized by Second-year students (2021 batch) and Dr. Sivaraj P, Assistant Professor (Agricultural Extension).



Comprehensive Mushroom Cultivation Training for Individuals

Based on the interest of individuals, SHG, rural youth, and women in mushroom entrepreneurship, our ASA ELP team in Mushroom Production Technology we offered the orientation and hands-on training to the individuals on July 8, 2023, as an extension activity to the rural people for their empowerment.



1. **Dr. Mageshen. VR**, Assistant Professor (Soil Science and Agricultural Chemistry), has published a research article entitled "Effect of chitosan iodate complex bio-fortification on nutrient uptake in 'Shivam' hybrid of tomato (*Solanum lycopersicum* L.)." Journal of Applied and Natural Science, 15(2), pp.549-554. <https://doi.org/10.31018/jans.v15i2.4461>



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Research Article

Effect of chitosan iodate complex biofortification on nutrient uptake in 'shivam' hybrid of tomato (*Solanum lycopersicum* L.)

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2. **Parvathy S. Nair, Sivani Menon, Shreya Suresh, Sreekanth A J, Adithya Krishnan S, Anuranj P R, Nayana Krishnan, Parvathy S.** students, and **Dr.K.Sivasabari**, Assistant Professor (Soil Science and Agricultural Chemistry) have published a review article entitled "Beneficial impacts of biochar as a potential feed additive in animal husbandry" in the Journal of Experimental Biology and Agricultural Sciences. [https://doi.org/10.18006/2023.11\(3\).479.499](https://doi.org/10.18006/2023.11(3).479.499)

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Beneficial impacts of biochar as a potential feed additive in animal husbandry

Parvathy S Nair^{1†}, Sivani Menon P S^{1†}, Shreya Suresh^{1†}, Sreekanth A J^{1†},
Sivasabari K¹, Adithya Krishna S¹, Anuranj P R¹, Nayana Krishnan¹, Parvathy S¹,
Sandip Chakraborty² , Hitesh Chopra³ , Shophnil Akash⁴ , Ruhul Amin⁵ , Abhijit Dey⁶ ,
Mahmoud Alagawany⁷ , Deepak Chandran^{8†} , Kuldeep Dhama^{9*} 

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²Department of Veterinary Microbiology, College of Veterinary Sciences and Animal Husbandry, R.K. Nagar, West Tripura, Tripura, Pin-799008, India

3. **Ankitha Indu J, Meenakshy S, Sreelakshmi M, Amrithendhu V R, Khanza Ahamed, Gopika Ram, Devika Mohan, Anamika P** students, and **Dr.K.Sivasabari**, Assistant Professor (Soil Science and Agricultural Chemistry) have published a review article entitled "Potential benefits and therapeutic applications of "Panchgavya" therapy (cowpathy) for human and animal health: Current scientific Knowledge in the Journal of Experimental Biology and Agricultural Sciences. [https://doi.org/10.18006/2023.11\(3\).520.533](https://doi.org/10.18006/2023.11(3).520.533)



Potential benefits and therapeutic applications of "Panchgavya" therapy (Cowpathy) for human and animal health: Current scientific knowledge

Deepak Chandran^{1*} , Ankitha Indu J^{2†}, Sivasabari K^{2†}, Meenakshy S^{2†}, Sreelakshmi M², Amrithendhu V R², Khanza Ahamed², Gopika Ram², Devika Mohan², Anamika P², Sandip Chakraborty³ , Hitesh Chopra⁴ , Shopnil Akash⁵ , Ruhul Amin⁶ , Sirwan Khalid Ahmed⁷ , Abhijit Dey⁸ , Anil K Sharma⁹ , Kuldeep Dhama^{10*}

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³Department of Veterinary Microbiology, College of Veterinary Sciences and Animal Husbandry, R.K. Nagar, West Tripura, Tripura, Pin-799008, India

4. **Dr. V.S. Manivasagam** and **Prof. Sudheesh Manalil** have published a book chapter entitled "*Rice Cultivation and water sustainability in Peninsular India: Examining the challenges of climate change through extreme rainfall events with the Markov chain approach.*" *Developments in Environmental Science* 14 (2023): 17-30.

<https://www.sciencedirect.com/science/article/abs/pii/B978044318640000002X>



Developments in Environmental Science

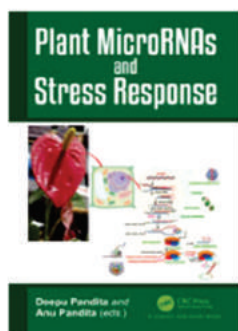
Volume 14, 2023, Pages 17-30



Chapter 2 - Rice cultivation and water sustainability in peninsular India: Examining the challenges of climate change through extreme rainfall events with the Markov chain approach

Masoud K. Barati ^a, V.S. Manivasagam ^b, B. Soundharajan ^c, Sudheesh Manalil ^b

5. **Dr. Parthasarathy S, Dr. Reena S, and Dr. D. Dhivya priya**, Assistant Professors, have published a book chapter entitled "Micro-RNA: A Versatile Tool as Molecular Markers in Plants. Plant MicroRNAs and Stress Response", 2023 302-328. <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003322214-17>



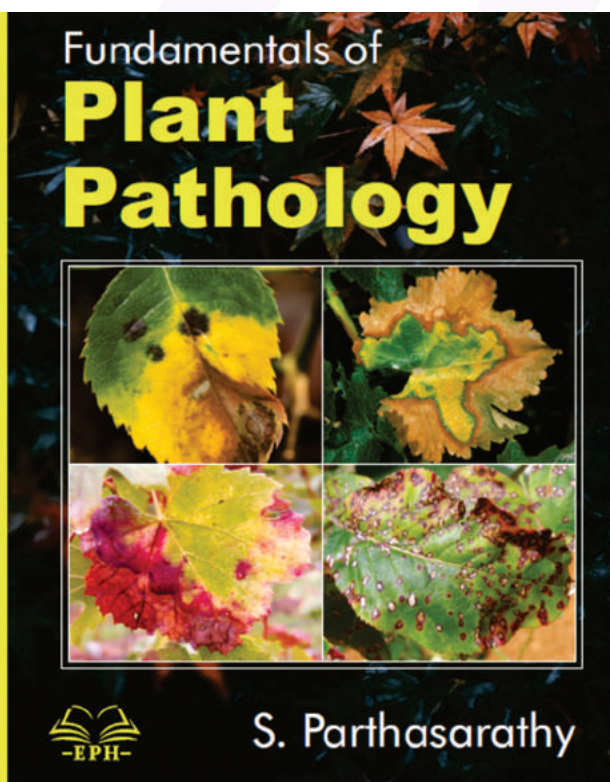
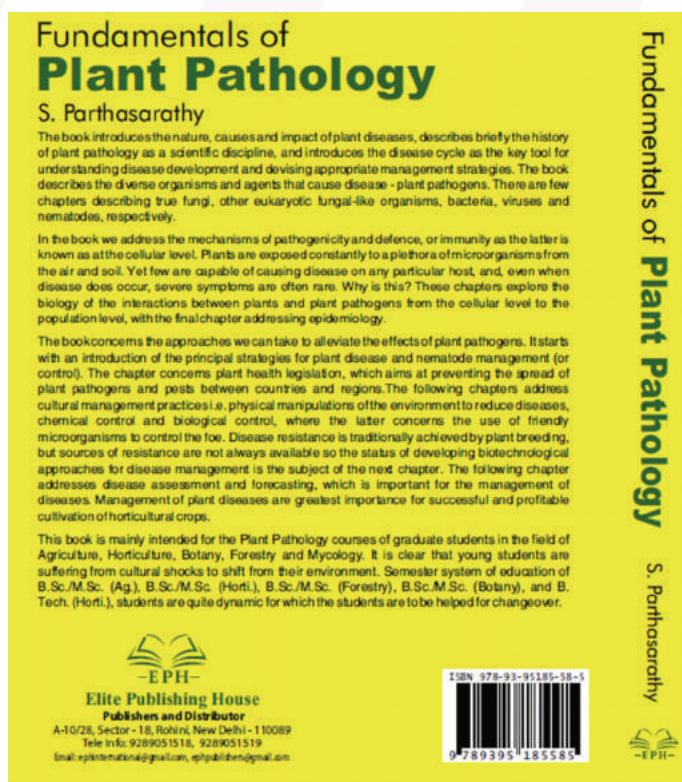
Chapter

Micro-RNA: A Versatile Tool as Molecular Markers in Plants

By Parthasarathy Seethapathy, Reena Sellamuthu, Dhivya priya Dharmaraj, Harish Sankarasubramanian, Anandhi Krishnan, Anu Pandita, Deepu Pandita

Book [Plant MicroRNAs and Stress Response](#)

6. **Dr. Parthasarathy S**, Assistant Professor (Plant Pathology), has published a book entitled "Fundamentals of Plant Pathology" (2023). as per the syllabus of ICAR Vth Deans Committee report for the fundamental course in Plant Pathology, pp. 1-418.



AWARDS AND ACHIVEMENTS

1. **Dr. Sivaraj P**, Assistant Professor (Agricultural Extension), has participated in a Collaborative online training programme on Faculty Development Program for Extension, 13-16 June, 2023 organized by National Institute of Agricultural Extension Management (MANAGE), Hyderabad & Tamil Nadu Agricultural University, Coimbatore.



2. **Dr. Sathyapriya E**, Assistant Professor (Agricultural Extension), has participated in a Collaborative online training programme on Faculty Development Program for Extension, 13-16 June 2023, organized by the National Institute of Agricultural Extension Management (MANAGE), Hyderabad & Tamil Nadu Agricultural University, Coimbatore.



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