



AMRITA
VISHWA VIDYAPEETHAM
(Deemed-to-be University)

School of
Agricultural Sciences

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



ASA BIMONTHLY E-NEWSLETTER

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"Be like the honeybee who gathers only nectar wherever it goes. Seek the goodness that is found in everyone".

Amma, Sri Mata Amritanandamayi Devi
Chancellor, Amrita Vishwa Vidyapeetham

I. STUDENTS' ACTIVITIES

1. POSTER DEMONSTRATION BY THE STUDENTS

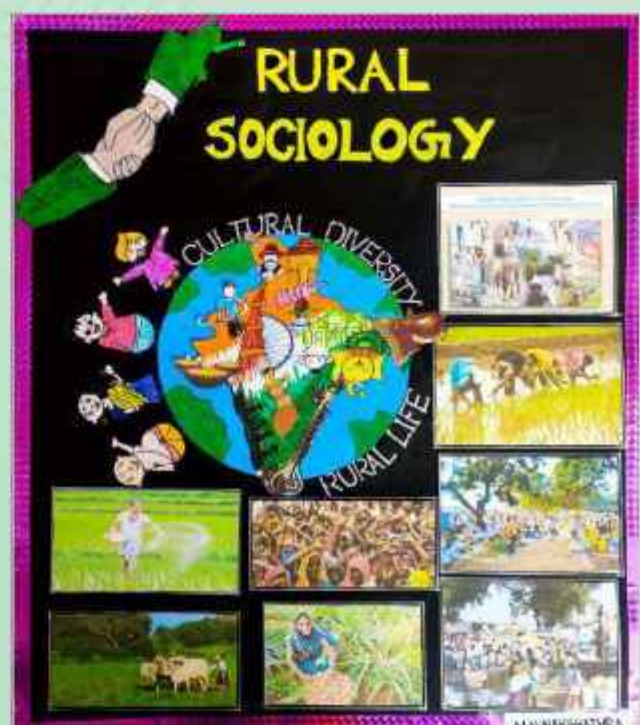
First-year students (2021 batch) exhibited posters on topics such as sociology, Indian agriculture, educational importance, and educational psychology as part of the course 19AEX101- Rural Sociology and Educational

Psychology (2+0), taught by the course teacher Dr. Sivaraj P, Assistant Professor (Agricultural Extension). This hands-on lessons have imparted skills to students in creating attractive visual print ads in the future.



Prepared by Ms. Jeyapriyaa V M,
First Year Student (2021 batch)

Prepared by Ms. M.N. Nakshathra,
First Year Student (2021 batch)



2. EXPOSURE VISIT TO BIOFERTILIZER PRODUCTION UNIT

As part of the course 19AGM111-Agricultural Microbiology (1+1), second-year students (2020 batch) visited M/S. Biofarm Pvt., Ltd., Othakalmanadapam, Coimbatore on 5 April 2022, organized by the course teacher Dr. Iniyakumar M, Assistant Professor (Agricultural Microbiology). Mrs. Smitha, Division Head (Biofertilizer

Production) and Mrs. Elakkiya (Microbiologist and In-charge of the Bio-fertilizer Production Unit) explained the process of biofertilizer production in detail to the students. Students learned how to handle and operate large volume fermenters and spray driers for the preparation and mass multiplication of biofertilizers during the visit.



3. PEST DIAGNOSE IN COCONUT ORCHARD

As part of 19AEN301- Pests of Crops and Stored Grains and their Managements (2+1) course, third-year students (2019 batch) visited Amrita Vishwa Vidyapeetham, Ettimadai campus farm on 8 April 2022. Students collected and reared insects as Dr. Aravind J, Assistant Professor (Agricultural Entomology), discussed how to analyse the symptoms of damage in the coconut orchard and identify the distinct pest symptoms in coconut.



4. VISIT TO NANOTECHNOLOGY, BIOSENSOR, AND GREEN TECHNOLOGY LABS



As part of the 19AGR302 - Geoinformatics, Nanotechnology and Precision Farming (1+1) course, on 8 April 2022, the students visited Amrita Vishwa Vidyapeetham, Ettimadai campus. The students were exposed to the experimental process of producing nanoparticles (zinc oxide) through different methods like reflux, thermal, ball milling, sol-gel, and rotary evaporator. The working principles of the sonication process were also described in the nanotechnology lab.

In the biosensor lab, the students were introduced to a variety of instruments that interact with biological substances, namely molecular compounds. A Fluorescence microscope, a Profilometer, Atomic Force Microscopy (AFM), sensor fabrication facility, and atomic screen-printing machine were among the devices. The biosensor lab was used to focus on developing diagnostic tools for human diseases. Compound Microscope equipment was utilized in the biochemical lab to monitor electrochemical reactions using 15 different methodologies.

The green technology lab dealt with different techniques that separate ions and polar molecules like ion chromatography. The Gas Chromatography Mass Spectrometer (GCMS) instrument separates notable organic compounds and pesticides. GCMS was also used to dilute pollutants in the air through vapour intrusion investigation. A differential scanning calorimeter instrument measured the physical properties of sample change and the temperature against time. X-ray diffractometry instrument was used in materials services to determine the structure. The visit was a success in terms of providing knowledge and valuable information about nanotechnology, biosensors, and green technologies. This exposure tour was organised by Dr. V.S. Manivasagam, Assistant Professor (Agriculture Informatics).



5. EXPOSURE VISIT TO COIR PITH INDUSTRY

As part of the courses, 19AEC301- Agri-business Management (2+1) and 19AEX301- Entrepreneurship Development and Business Communication (1+1), third-year students (2019 batch) visited M/S Sri Ram Fibre industry and Sri Hariharasudan Coir Pith Industry at Thoppampatti block of Negamam in Coimbatore district of Tamil Nadu on 22 April 2022. The visit aimed to know about coconut husk processing, coir pith making, entrepreneurial traits and marketing of products. Mr. Ganeshmoorthy, Director (Sri Ram Fibre industry), explained the hurdles and opportunities of new generation entrepreneurs, government schemes to promote entrepreneurship, and different units/ activities such as defibring, curling of fibres, briquetting of Coir Pith and exporting opportunities of the products. Mr. Pirabu, Manager (Sri Hariharasudan Coir Pith Industry), clearly shared the information about the production, marketing

and constraints of this unit and industry. The industry visit helped the students to startup new enterprises and explored the skills of entrepreneurs. This visit was organized by the course teachers Dr. P. Naveen Kumar, Assistant Professor (Agricultural Economics) and Dr. E. Sathyapriya, Assistant Professor (Agricultural Extension).



6. STUDENT EXPOSURE VISIT TO FARMERS FIELD



As part of GPB301 Crop Improvement - I Kharif crops course, third-year students (2019 batch) were taken for a field visit to Kurunellipalayam village near Pollachi on 22 April 2022, by the course teachers Dr. D. Dhivyapriya, Assistant Professor (GPB) and Dr. V. Marthandan, Assistant Professor (SST). This field trip provided good exposure about different intercrops like viz., brinjal and cauliflower as well as drip irrigation for the intercrops. Students observed the pests and disease infestation in the field like sap-sucking insects in brinjal, phytoplasma infestation in brinjal, Alternaria leaf spot and nematode infestation in cauliflower.

7. CROP SCOUTING DEMONSTRATION

Dr. Parthasarathy S, Assistant Professor (Plant Pathology) organized an on-farm crop scouting demonstration and awareness campaign for pests and disease management in coconut field at Vellalapalayam Village, Pollachi Taluk as part of the course 19PAT302 – Principles of Integrated Pests and Disease Management (2+1). This field demonstration extended the students' skill in field-level detection and diagnosis of pests, diseases, deficiency and disorders.



8. VISIT TO AGRICULTURAL RESEARCH STATION (ARS), TNAU, BHAVANISAGAR

As part of the GPB301 Crop Improvement - I Kharif crops course, third-year students (2019 batch) visited ARS, Bhavanisagar, TNAU, Erode on 26 April 2022. Students learned more about breeding techniques in various crops, viz., Rice, Black gram, Green gram, Red gram, Maize and Groundnut. Dr. Utharasu, Assistant Professor (TNAU), explained seed production stages, certification, and processing. The course teachers Dr. D. Dhivyapriya, Assistant Professor (GPB) and Dr. V. Marthandan, Assistant Professor (SST) organized this field trip.





9. FIELD VISIT TO ETTIMADAI FARM

As part of III semester courses for the 2020 batch, a field visit was organized on 23 April 2022 to Amrita Vishwa Vidyapeetham, Ettimadai campus. Mr. Ramadurai, farm supervisor explained the nursery and its maintenance. Students were exposed to various amenities such as Gymnasium, Indoor Badminton stadium, and Swimming pool. They visited rainwater harvesting structures. The students identified different tree specieses. Pandal system and azolla cultivation were evaluated. The students found the field visit to be interesting and informative.



II. COLLEGE EVENTS

1. ONLINE AGRICULTURAL FULL-TEXT PLATFORM: CAB ABSTRACTS WITH FULL TEXT

The National Digital Library of India (NDLI) club of Amrita School of Agricultural Sciences organized a session on "Online Agricultural Full-Text Platform: CAB Abstracts with Full Text" on 7 March 2022, through MS Teams. The event commenced with a prayer song by Ms. Aparna S, of the third-year (2019 batch). Dr. Sudheesh Manalil, Principal, Head Research and PGP Chair, gave the introductory remarks and discussed the importance of CABI and EBSCO. Dr. N. Udayashankar, Campus Director, extended his warm welcome to the guest speaker. The guest speaker of the day was Mr. Stani Jude John, Business Manager, South EBSCO Information Services India Pvt. Ltd., Chennai. He enlightened the participants by discussing the components of CABI and CAB abstracts, the quality of journals in CABI, the numerous publications accessible in it, the variety of themes available, and so on. The session ended with a vote of thanks by Mr. R. Saravanan, Librarian. This session was coordinated by Dr. E. Sathyapriya, Assistant Professor (Agricultural Extension).



2. WOMEN'S DAY -2022 CELEBRATION AT ASA

The NDLI club, IQAC and AYUDH unit of ASA jointly celebrated "International Women's Day" on 8 March 2022, with the theme of "Gender Equality Today for a Better Tomorrow". The programme was conducted online and offline for students, faculty, staff, and technical workers. The online event began with a prayer song performed by Ms. Aparna S, of the third-year (2019 batch). The special address on women's day was given by Dr. Sudheesh Manalil, Principal, Head Research and PGP Chair. He shared the importance of women's equality and empowerment. Dr. N. Udayashankar, Campus Director, extended his warm welcome and delivered the women's day note. Dr. Reena S, Assistant Professor (Agri. Biotechnology), delivered a presentation on women scientists who made a significant contribution to agricultural science. Following that, students took part in online quiz and drawing competition. The offline programme games such as "water filling, musical chair and tug of war" were conducted for all the women employees of ASA. Finally, the winners of the game were appreciated by token of gifts. The entire session was coordinated by Dr. Reena S, Dr. Dhivyapriya D and Dr. E. Sathyapriya.



3. NSS SPECIAL CAMP AT ARASAMPALAYAM VILLAGE



Day 1 - 21.03.2022

The NSS special camp (NSS Unit 6) of Amrita School of Agricultural Sciences was inaugurated on 21 March 2022 at Government High School, Arasampalayam. The inaugural programme began with a prayer song, and it was compered by Ms. A.V. Kavya and Ms. Deetchanya of the second-year (2020 batch) Dr. K. Murugasridevi, NSS Programme Officer, NSS Unit 6, welcomed the gathering and delivered NSS special camp activities plan. The introductory remark was given by Dr. D. Venkataraman, NSS Programme Coordinator. He encouraged the students to participate in the NSS special camp activities actively. Dr. Sudheesh Manalil, Principal, Head Research and PGP Chair, inaugurated the NSS special camp and delivered the inaugural address. He emphasized the various social activities related to agriculture, such as parthenium eradication, kitchen garden preparation and survey on agricultural problems among farmers. He motivated the students to actively involved in the NSS special camp. Campus Director, Dr. N. Udayashankar delivered the special address and encouraged the students to participate in all the events actively. The special address was delivered by Mrs. B. Revathi, Head Master and Mr. M. Venkatachalam, Assistant Head Master, Government High School, Arasampalayam. Finally, Ms. Madhurabashene, of the second year (2020 batch) delivered the vote of thanks. The inaugural programme ended with a rendition of National Anthem. The inaugural programme was organised with the help of Dr. P. Sivaraj, Mr. V. Karthik Raja, and Ms. D. Mahalakshmi. On behalf of the NSS unit of ASA, two computers were gifted to the Government High School, Arasampalayam, for the benefit of students.



In view of celebrating the International Day of Forests on 21st March, three tree saplings were planted in the Government High School campus by NSS student volunteers. NSS student volunteers were involved in cleaning the bushes and collecting plastic garbage within the school premises. Basics in Spoken English and computer applications were taught to school students by NSS student volunteers.

Day 2 - 22.03.2022

A group of NSS student volunteers cleaned the compound wall of Government High School, Arasampalayam, for painting and prepared the land for establishing a kitchen garden. They cleaned the bushes, removed the stones, and levelled and pulverized the soil for cultivation. Dr. D. Vinodhini and Dr. P. Naveen Kumar facilitated in organizing the activities. NSS student volunteers conducted a Tamil speech competition for school students. A survey on identifying agricultural problems and training need assessment among Arasampalayam farmers were undertaken by six NSS student volunteer groups with the help of a facilitator. Dr. P. Sivaraj, Dr. J. Aravind, Dr. K. Murugasidevi, and Ms. Keerthana Krishna Kumar facilitated the survey conducted by the students.

Day 3 - 23.03.2022

NSS student volunteers painted the compound wall of Government High School, Arasampalayam. NSS student volunteers made ridges, furrows and beds for transplanting vegetable seedlings. Mr. Abi Adhityan, PIL development officer, delivered an awareness session on postal schemes. He explained the various postal schemes for college students, school students and faculty and motivated them to follow the savings habit. Principal, Dr. Sudheesh Manalil distributed 68 notebooks for students of Government Primary School, Arasampalayam. Events were conducted for school students such as lemon in spoon, music chair, balloon fighting, drawing, and running competition. NSS student volunteers of ASA conducted race, singing competition, poster making, and quiz competition. They distributed leaflets on the "Awareness session on Parthenium Eradication Programme" in Arasampalayam village. The events were organized by Dr. P. Sivaraj, Dr. A. M. Radhika, Dr. G. Boopathi, and Dr. E. Sathyapriya.

Day 4 - 24.03.2022

As part of the NSS special camp, a Yoga session was conducted for school students by Ms. D. Mahalaksmi, Physical Instructor, ASA. With an enormous effort and interest, NSS student volunteers painted the school's compound wall and wrote the board for the school. Vegetable seedlings such as tomato, chilli, and brinjal were transplanted in ridges and irrigated. Cowpea, bhendi and amaranthus seeds were sown in beds and irrigated. Awareness of the harmful effects of plastic usage was given to school students, and a hands-on training was given on the preparation of paper bags, which is a better alternative to plastic bags. An awareness session on Parthenium eradication was conducted at the Primary Agricultural Cooperative Bank, Arasampalayam. Dr. Sudheesh Manalil, Principal, Head Research and PGP Chair, addressed the meeting and shared his research experiences about this noxious weed in Australia. Dr. Sureshkumar R, Assistant Professor (Agronomy), delivered an awareness cum training session on the ill effects of Parthenium and different management tactics to eradicate this weed. Totally, 38 farmers participated in this awareness session and got benefitted. Dr. P. Sivaraj, Dr. K. Sivasabari and Ms. D. Mahalakshmi facilitated in organizing the training session.

Day 5 - 25.03.2022

The valedictory function of the NSS special camp was conducted on 25 March 2022 at Government High School, Arasampalayam. The valedictory programme commenced with a prayer song. The programme was compered by Ms. Abirami Nair and Ms. Abermaa of the second year (2020 batch). Dr. K. Murugasidevi, NSS Programme Officer, NSS Unit 6, welcomed the gathering and summarized the NSS special camp activities during the five days. Dr. D. Venkataraman, NSS Programme Coordinator, delivered the closing comments. Following that, Dr. Sudheesh Manalil, Principal, Head Research, and PGP Chair, delivered the valedictory address, and appreciated the NSS student volunteers for their enthusiastic participation. Campus Director, Dr. N. Udhayashankar, delivered the special address and motivated the students. Then, the special addresses were delivered by Mr. M. Venkatachalam, Assistant Head Master and Mr. Ilavarasan, Teacher of Government High School, Arasampalayam. The dignitaries in the forum distributed the prizes for the winners of various events conducted for school students and also distributed the NSS special camp certificates for NSS student volunteers. Finally, Dr. P. Sivaraj, Assistant Professor (Agricultural Extension), delivered the vote of thanks. The programme ended with a National Anthem. Dr. M. Iniyakumar, Dr. V. S Manivasagam, Dr. D. Dhivyapriya, Dr. P. Sivaraj and Ms. D. Mahalakshmi facilitated in organizing the valedictory function. As part of the NSS special camp, two portable dust bins were contributed to Arasampalayam village.

Glimpses of NSS Special Camp (2020 batch students)



Inauguration of NSS Special Camp



Tree Planting at Govt. High School, Arasampalayam.



Cleaning of School Compound Wall



Computer Awareness Session for the Students



Survey with the Farmers



Field Preparation for Kitchen Garden

Glimpses of NSS Special Camp (2020 batch students)



Tamil Speech Competition for School Students



Painting of School Compound Wall



Painting



Awareness Session on Postal Schemes



Events for School Kids



Awareness cum Training Session on Parthenium Eradication



Drawing Competition for School Students



Valedictory Function of NSS Special Camp

were provided to the students for carrying out this work. All the uprooted parthenium plants were made as a heap for further burning. Dr. K. Murugasidevi, NSS Programme Officer, NSS Unit 6 of ASA, and faculty members successfully organized the event.



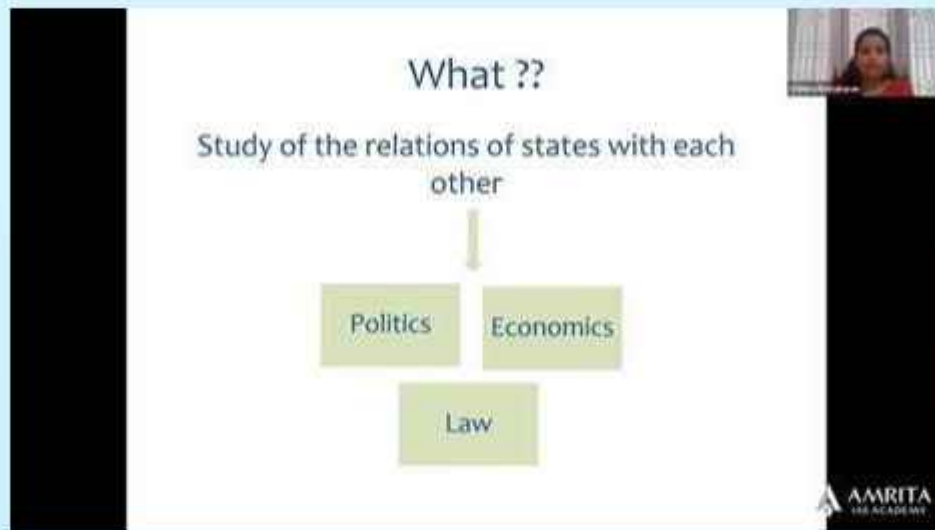
6. WEBINAR ON “FOOD SECURITY IN A CHANGING WORLD” - SUSTAINABILITY AND BEYOND COLLOQUIUM SERIES

As part of World Water Day, International Day of Forests and World Meteorological Day, to highlight the importance of agriculture in the changing climate, Dr. Sudheesh Manalil, Principal, Head Research and PGP Chair, invited a distinguished Prof. John Hammond, Head of Sustainable Agriculture and Food Systems, Professor, Crop Science, University of Reading, UK, to deliver a webinar on Food Security in a changing World on 7 April 2022, through virtual mode. This webinar was organised by the School of Sustainable Development as part of colloquium series. Prof. Hammond, highlighted the sustainable agricultural solutions for future climate threats such as drought and heat stress in this webinar. Also, he emphasized the importance of developing varieties with high root density to cope up the future climate stress. Further, he explained the role of organic inputs, beneficial microbes in sustainable agriculture in the changing climate. He also stressed the use of Struvite (extracted from wastewater) as alternative to Phosphorus fertilizer to save the environment from excessive depleting fossil resources. Besides, he suggested ways in implementing the conservation agriculture, rejuvenated agriculture, and their impact on surviving the changing agriculture and food security scenario. Students and Faculty members of Amrita Vishwa Vidyapeetham attended the session and clarified their doubts with the guest speaker.



7. ASA CIVIL SERVICE FOUNDATION COURSE

Political science deals with systems of governance and power and the analysis of political activities, political behavior, and associated constitutions and laws. Our ASA IAS aspirants are learning political science principles in order to gain a better understanding of the political milieu in which they live.



III. RESEARCH AND DEVELOPMENT

STUDENTS RESEARCH: SECOND TRIAL ON POT CULTURE

Student research on the application of AMC in mitigating drought stress of Cowpea VBN 3 research experiment trail two has been initiated. Third - year students (2019 batch) Ms. Gowry Parvathy, Mr. Pranav and Ms. Soundharya Sivakumar and Ms. Ashwini Sureshbabu, SRF are placing the i-button data loggers to estimate the moisture in the soil under the guidance of Dr. Iniyakumar M, Assistant Professor (Agricultural Microbiology).



IV. PUBLICATIONS

1. **Dr. Parthasarathy S**, Assistant Professor (Plant Pathology), has published a research article entitled "Bioactive potential of invertase by yeast *Saccharomyces cerevisiae* from the honey bee gut: isolation and characterization" in Springer – Biomass Conversion and Biorefinery. 2022. <https://doi.org/10.1007/s13399-022-02499-w>

Biomass Conversion and Biorefinery
<https://doi.org/10.1007/s13399-022-02499-w>

ORIGINAL ARTICLE



Bioactive potential of invertase by yeast *Saccharomyces cerevisiae* from the honey bee gut: isolation and characterization

Shunmugiah Mahendran¹ · Subbiah Sankaralingam² · Selvaraj Tamilarasi¹ · Pandiaraj Maheswari¹ · Durairaj Kathiresan² · Subramanian Sivasangari Ramya³ · Parthasarathy Seethapathy⁴ · Loganathan Kousalya⁵ · Balasundaram Harinathan⁶ · Selvam Palpperumal⁶

2. **Dr. Sathyapriya E**, Assistant Professor (Agricultural Extension), has published a research article entitled "Critical Retrospection of Performance of Emerging Mobile Technologies in Health Data Management". Journal of Health Engineering. 2022. <https://doi.org/10.1155/2022/8903604>

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Journal of Healthcare Engineering
Volume 2022, Article ID 8903604, 12 pages
<https://doi.org/10.1155/2022/8903604>



Research Article

Critical Retrospection of Performance of Emerging Mobile Technologies in Health Data Management

Sonali Vyas¹,² Deepshikha Bhargava³,² Jyoti Bhola³,³ Javed Ahmed Ujjan⁴,⁴ Sathyapriya Eswaran⁵,⁵ and Abdul Wahab Rahmani⁶,⁶

¹University of Petroleum and Energy Studies, Dehradun, India

²School of Computing, DIT University, Dehradun, India

³Electronics & Communication Engineering Department, National Institute of Technology, Hamirpur, India

⁴College of Animal Sciences & Technology, Northwest A&F University, Xianyang, China

⁵Agricultural Extension, Amrita School of Agricultural Sciences, Arasampalayam, Coimbatore, Tamil Nadu, India

⁶Isteqlal Institute of Higher Education, Kabul, Afghanistan

3. **Dr. Sathyapriya E**, Assistant Professor (Agricultural Extension), has published a research article entitled "Design and Evaluation of a hybrid Techniques for Detecting Sunflower Leaf Disease Using Deep Learning Approach. Journal of Food Quality.2022. <https://doi.org/10.1155/2022/9211700>

Hindawi
Journal of Food Quality
Volume 2022, Article ID 9211700, 12 pages
<https://doi.org/10.1155/2022/9211700>

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Research Article

Design and Evaluation of a Hybrid Technique for Detecting Sunflower Leaf Disease Using Deep Learning Approach

Arun Malik¹,^{*} Gayatri Vaidya², Vishal Jagota³, Sathyapriya Eswaran⁴,
Akash Sirohi¹, Isha Batra¹, Manik Rakhra¹ and Evans Asenso⁵

¹Department of Computer Science and Engineering, Lovely Professional University, Phagwara, Punjab 144411, India

²Department of Studies in Food Technology, Davangere University, Davangere, Karnataka, India

³Department of Mechanical Engineering, Madanapalle Institute of Technology & Science, Madanapalle, Andhra Pradesh, India

⁴Department of Agricultural Extension, Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore 642109, India

⁵Department of Agricultural Engineering, School of Engineering Sciences, University of Ghana, Accra, Ghana

4. **Dr. Deepak Chandran, Dr. Sureshkumar R, Dr. Naveen Kumar P, Dr. Sabareeshwari V**, Assistant Professors and **Ms. Keerthana Krishna Kumar**, SRF have published a research article entitled "Analysis of Milk Production Performance of Attappadi Black, Malabari and Cross-Bred Goats Under Organized Farm Conditions of Kerala". The Indian Veterinary Journal. 2021, 98 (5): 13-18.

Indian Vet. J., May 2021, 98 (05) : 13 - 19

Analysis of Milk Production Performance of Attappadi Black, Malabari and Cross-Bred Goats Under Organized Farm Conditions of Kerala

A.S.Lejaniya¹, Deepak Chandran², Thirupathy Venkatachalapathy³, Bimal P Bashir⁴, Manoj Kumar⁵,
Arjun Shanavas⁶, R.Sureshkumar⁷, P.Naveen Kumar⁸, V.Sabareeshwari⁹,
Keerthana Krishna Kumar⁷ and Pran Mohankumar⁶

¹UCSI University, Department of Food Science and Nutrition, Faculty of Applied Sciences, 1, UCSI Heights, Jalan Puncak Menara Gading, Taman Connaught, 56000Cheras, Wilayah Persekutuan Kuala Lumpur, Malaysia

²Department of Veterinary Sciences and Animal Husbandry, Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore, Tamil Nadu, India - 642109.

³Goat and Sheep Farm, Kerala Veterinary & Animal Sciences University, Mannuthy, Thrissur, Kerala, India - 680651.

⁴Department of Veterinary and Animal Husbandry Extension, College of Veterinary & Animal Sciences, Kerala Veterinary & Animal Sciences University, Pookode, Wayanad, Kerala, India - 673576.

⁵Chemical and Biochemical Processing Division, ICAR – Central Institute for Research on Cotton Technology, Mumbai, India - 400019.

⁶Division of Medicine, Indian Veterinary Research Institute, Bareilly, 243122, India - 243122.

⁷Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore, India - 642109.

⁸School of Agriculture and Bio-Sciences, Karunya University, Coimbatore, India - 641114.

3. Dr. Sureshkumar R, Dr. Deepak Chandran, Dr. Marthandan V, Dr. Sabareeshwari V, Assistant Professors and Ms. Keerthana Krishna Kumar, SRF have published a research article entitled "Yield and quality of multi-cut forage sorghum (*Sorghum bicolor* (L.) Moench) as influenced by various organic manure and nitrogen levels. The Indian Veterinary Journal. 2022, 99(1): 34-41.

Indian Vet. J., January 2022, 99 (01) : 34 - 41

Yield and Quality of Multi-Cut Forage Sorghum (*Sorghum Bicolor* (L.) Moench) as Influenced by Various Organic Manure and Nitrogen Levels

Karthika N¹, Raja Priya R¹, Sureshkumar R², Deepak Chandran², Marthandan V², Sabareeshwari V², Keerthana Krishna Kumar², Yasodha M³, Talha Bin Emran⁴, Manoj Kumar⁵, Saikat Mitra⁶, Luiz Everson da Silva⁷ and Pran Mohankumar²

¹Agricultural College & Research Institute, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India

²Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore – 642109, Tamil Nadu, India

³Department of Agriculture, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India

⁴Department of Pharmacy, BGC Trust University Bangladesh, Chittagong 4381, Bangladesh.

⁵Chemical and Biochemical Processing Division, ICAR – Central Institute for Research on Cotton Technology, Mumbai - 400019, India

⁶Department of Pharmacy, Faculty of Pharmacy, University of Dhaka, Dhaka 1000, Bangladesh.

⁷Post-graduate Program in Sustainable Territorial Development, Universidade Federal do Paraná, Marinhos, Brazil – 832600-00.

4. Dr. Deepak Chandran, Assistant Professor (Veterinary Sciences and Animal Husbandry), has published a review article entitled "Potential herbs for the management of urolithiasis in veterinary medicine - A mini-review". The Indian Veterinary Journal. 2021, 98(6): 9-16.

Indian Vet. J., June 2021, 98 (06) : 09 - 16

Potential Herbs for the Management of Urolithiasis in Veterinary Medicine - A Mini Review

Khan Sharun¹, C. V. Haritha², Kaveri Jambagi³, Deepak Chandran⁴, Mohd. Iqbal Yatoo⁵, Hardeep Singh Tuli⁶, and Kuldeep Dhama⁷

¹Division of Surgery, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

²Division of Pharmacology and Toxicology, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

³Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

⁴Department of Veterinary Sciences and Animal Husbandry, Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore, Tamil Nadu, India

⁵Mycoplasma Laboratory, Division of Veterinary Clinical Complex, Faculty of Veterinary Sciences and Animal Husbandry, Shuhama, Alusteng Srinagar, Sher-E-Kashmir University of Agricultural Sciences and Technology of Kashmir, Shalimar, Srinagar-190006, Jammu and Kashmir, India

⁶Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala 133207, Haryana, India

⁷Division of Pathology, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

7. **Dr. Deepak Chandran**, Assistant Professor (Veterinary Sciences and Animal Husbandry), **Mr. Mahesh S V** and **Mr. Maneesh S V**, third year students, have published a review article entitled "Major health effects of casein and whey proteins present in cow milk - A narrative review". The Indian Veterinary Journal. 2021, 98(11): 9-19.

Indian Vet. J., November 2021, 98 (11) : 09 - 19

Major Health Effects of Casein and Whey Proteins Present in Cow Milk: A Narrative Review

Deepak Chandran¹, Lejaniya A S², Mahesh S V¹, Maneesh S V¹, Sureshkumar R¹, Harpal S Buttar³, Harish Kumar⁴, Khan Sharun⁵, Mohd. Iqbal Yatoo⁶, Ranjan K. Mohapatra⁷, and Kuldeep Dhama⁸

¹Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore – 642109, Tamil Nadu, India.

²UCSI University, Department of Food Science and Nutrition, Faculty of Applied Sciences, 1, UCSI Heights, Jalan Pancek Menara Gading, Taman Connaught, 56000 Cheras, Wilayah Persekutuan Kuala Lumpur, Malaysia.

³Department of Pathology & Laboratory Medicine, Faculty of Medicine, University of Ottawa, Ottawa, ON, Canada.

⁴Amity Institute of Biotechnology, Amity University, Jaipur, Rajasthan - 303002, India.

⁵Division of Surgery, ICAR-Indian Veterinary Research Institute, Bareilly, Uttar Pradesh - 243122, India.

⁶Mycoplasma Laboratory, Division of Veterinary Clinical Complex, Faculty of Veterinary Sciences and Animal Husbandry, Shuhama, Alusteng Srinagar, Sher-E-Kashmir University of Agricultural Sciences and Technology of Kashmir, Shalimar, Srinagar - 190006 Jammu and Kashmir, India

⁷Department of Chemistry, Government College of Engineering, Keonjhar - 758002, Odisha, India.

⁸Division of Pathology, ICAR-Indian Veterinary Research Institute, Bareilly, Uttar Pradesh - 243122, India.

8. **Dr. Sabareeshwari V**, **Dr. Deepak Chandran**, **Dr. Sureshkumar R**, **Dr. Marthandan V**, Assistant Professors and **Ms. Keerthana Krishna Kumar**, SRF have published a review article entitled "Soil forming factors and morphological characteristics of soil – A review". The Indian Veterinary Journal. 2021, 98(12): 9-15.

Indian Vet. J., December 2021, 98 (12) : 09 - 15

Soil Forming Factors and Morphological Characteristics of Soil – A Review

Sabareeshwari V¹, Luiz Everson da Silva², Deepak Chandran¹, Sureshkumar R¹, Marthandan V¹, Keerthana Krishna Kumar¹, Naveen Kumar P¹, Sangeetha K S³, Pran Mohankumar⁴, Yashodha M⁴, and Krithiks C⁵

¹Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore, Tamil Nadu - 642109, India.

²Post-graduate Program in Sustainable Territorial Development, Universidade Federal do Paraná, Matinhos, Brazil – 832600-00.

³Department of Plantation Crops and Spices, Kerala Agricultural University, Vellanikkara, Thrissur, Kerala – 680656, India.

⁴School of Agriculture and Biosciences, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu – 641114, India.

⁵Department of Soils and Environment, Agricultural College and Research Institute, Madurai, Tamil Nadu – 625104, India.

9. **Dr. Deepak Chandran**, Assistant Professor (Veterinary Sciences and Animal Husbandry), has published a review article entitled "3-D Bioprinting Technology in Veterinary Medicine: A mini-review". The Indian Veterinary Journal. 2021, 98(12): 16-21.

Indian Vet. J., December 2021, 98 (12) : 16 - 21

3-D Bioprinting Technology in Veterinary Medicine : A Mini-Review

Arjun Shanavas¹, Deepak Subedi², Talha Bin Emran³, Manoj Kumar⁴, Fahadul Islam⁵, Saikat Mitra⁶, Khan Sharun⁷, Firzan Nainu⁸, Saurav Pantha², Luiz Everson da Silva⁹, Pran Mohankumar¹⁰, Abrar UI Haq¹¹, Deepak Chandran¹²

¹Division of Medicine, ICAR-Indian Veterinary Research Institute, Bareilly, India – 243122.

²Institute of Agriculture and Animal Science, Tribhuvan University, Siddharthanagar 32900, Nepal.

³Department of Pharmacy, BGC Trust University Bangladesh, Chittagong 4381, Bangladesh.

⁴Chemical and Biochemical Processing Division, ICAR – Central Institute for Research on Cotton Technology, Mumbai, India - 400019.

⁵Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University, Dhaka 1207, Bangladesh.

⁶Department of Pharmacy, Faculty of Pharmacy, University of Dhaka, Dhaka 1000, Bangladesh.

⁷Division of Surgery, ICAR-Indian Veterinary Research Institute, Bareilly, Uttar Pradesh, India – 243122.

⁸Faculty of Pharmacy, Universitas Hasanuddin, Makassar 90245, Indonesia.

⁹Post-graduate Program in Sustainable Territorial Development, Universidade Federal do Paraná, Matinhos, Brazil – 832600-00.

¹⁰School of Agriculture and Biosciences, Karunya Institute of Technology and Sciences, Coimbatore, India - 641114.

¹¹Department of Veterinary Medicine, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India - 141012.

¹²Department of Veterinary Sciences and Animal Husbandry, Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore, India – 642109.

10. **Dr. Deepak Chandran, Dr. Sureshkumar R and Dr. Marthandan V**, Assistant Professors, have published a review article entitled "Valorization potential of tomato (*Solanum lycopersicum* L.) seed: nutraceutical quality, food properties, safety aspects, and application as a health-promoting ingredient in foods". MDPI – Horticulturae. 2022. 8(3): 265p. <https://doi.org/10.3390/horticulturae8030265>



horticulturae



Review

Valorization Potential of Tomato (*Solanum lycopersicum* L.) Seed: Nutraceutical Quality, Food Properties, Safety Aspects, and Application as a Health-Promoting Ingredient in Foods

Manoj Kumar^{1,*}, Deepak Chandran², Maharishi Tomar³, Deep Jyoti Bhuyan⁴, Simona Grasso⁵, Amanda Gomes Almeida Sá⁶, Bruno Augusto Mattar Carciofi⁶, Radha⁷, Sangram Dhumal^{8,*}, Surinder Singh⁹, Marisennayya Senapathy¹⁰, Sushil Changan¹¹, Abhijit Dey¹², Ravi Pandiselvam¹³, Dipendra Kumar Mahato¹⁴, Ryszard Amarowicz¹⁵, Sureshkumar Rajalingam¹⁶, Marthandan Vishvanathan¹⁷, Lejaniya Abdul Kalam Saleena¹⁸ and Mohamed Mekhemar^{19,*}

11. Dr. Deepak Chandran, Dr. Marthandan V, Dr. Sureshkumar R, Dr. Sabareeshwari V, Dr. Aravind J and Dr. Murugasridevi K, Assistant Professors, have published a review article entitled "Apitherapy and periodontal disease: Insights into in vitro, in vivo, and clinical studies". MDPI – Antioxidants. 2022, 11: 823p. <https://doi.org/10.3390/antiox11050823>



antioxidants



Review

Apitherapy and Periodontal Disease: Insights into In Vitro, In Vivo, and Clinical Studies

Manoj Kumar^{1,4}, Suraj Prakash², Radha², José M. Lorenzo^{3,4}, Deepak Chandran⁵, Sangram Dhumal⁶, Abhijit Dey⁷, Marisennayya Senapathy⁸, Nadeem Rais⁹, Surinder Singh¹⁰, Phillip Kalkreuter¹¹, Rahul D. Damale¹², Suman Natta¹³, Marthandan Vishvanathan¹⁴, Sangeetha Kizhakkumkara Sathyaseelan¹⁵, Sureshkumar Rajalingam¹⁶, Sabareeshwari Viswanathan¹⁷, Yasodha Murugesan¹⁸, Muthamilselvan Muthukumar¹⁹, Aravind Jayaraman²⁰, Murugasridevi Kalirajan²⁰, Samy Selim²¹, Ryszard Amarowicz²² and Mohamed Mekhemar^{23,4}

12. Dr. Deepak Chandran, Dr. Marthandan V, Assistant Professors and Ms. Athulya Rajasekharan, third year student, have published a review article entitled "Potential health benefits of using Aloe vera as a feed additive in livestock: A mini-review". The Indian Veterinary Journal. 2022, 99 (1): 9-18.

Indian Vet. J., January 2022, 99 (01) : 09 - 18

Potential Health Benefits of Using Aloe vera as a Feed Additive in Livestock : A Mini-Review

Deepak Chandran¹, Athulya Rajasekharan¹, Marthandan V¹, Talha Bin Emran², Khan Sharun³, Saikat Mitra⁴, Harpal S Buttar⁵, Harish Kumar⁶, Hardeep Singh Tuli⁷, and Kuldeep Dhama⁸

¹Amrita School of Agricultural Sciences, Amrita Vishwa Vidyapeetham University, Coimbatore, Tamil Nadu, India – 642109.

²Department of Pharmacy, BGC Trust University Bangladesh, Chittagong 4381, Bangladesh.

³Division of Surgery, ICAR-Indian Veterinary Research Institute, Bareilly, Uttar Pradesh, India – 243122.

⁴Department of Pharmacy, Faculty of Pharmacy, University of Dhaka, Dhaka 1000, Bangladesh.

⁵Department of Pathology & Laboratory Medicine, Faculty of Medicine, University of Ottawa, Ottawa, ON, Canada.

⁶Amity Institute of Biotechnology, Amity University, Jaipur, Rajasthan, India – 303002.

⁷Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala 133207, Haryana, India.

⁸Division of Pathology, ICAR-Indian Veterinary Research Institute, Bareilly, Uttar Pradesh, India – 243122.

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