M S RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE-AUTONOMOUS

MICROBIOLOGY INSIGHTS MAY-JULY 2024



Principal

Dr. Vatsala G

Vice Principal

Dr. Pushpa H

Editorial Board

Dr. Prasanna SrinivasDr. Vemula Vani

Dr. Vishal M

Dr. Prasanna SrinivasDr. Vemula Vani

Mrs. Soumya Satyanand Shanbhag

Advisory Board

Dr. Pushpa H

Dr. Savitha J

Dr. Snehalatha V

Dr. Dr. Juliya Rani Francis

Dr. Bhanupriya CH

Dr. Nimitha Venugopal C

Dr. Prashanthi Rajaram

Dr. Vidya Jagadeesan

Dr. Swathi D

Dr. Arvindganth

Vision of the Department

To Prepare Men and Women for the Service of the Country

Mission of the Department

Ramaiah College of Arts, Science and Commerce shall deliver global quality educations by nurturing a conductive learning environment for a better tomorrow through continuous improvement and customization

Objectives of the Department

- To Provide Skill based Scientific and Technical Knowledge to Students
- To Train Students in the Field of Microbiology, Provide Value-based Education with Innovative Research
- To Undertake Research Activities Relevant to Present Day Needs

ABOUT THE DEPARTMENT



The Department of Microbiology was established in 1999, offers a wide range of undergraduate and postgraduate courses, ensuring comprehensive education and research opportunities in this field. The department boasts a faculty of highly qualified experts who bring with them vast experience and expertise in various domains of Microbiology. Their commitment to teaching and research is reflected in their active involvement in cutting-edge research projects and their contributions to scientific publications and conferences. The department is equipped with state-of-the-art infrastructural facilities, including modern laboratories and research equipment, creating an ideal environment for teaching, experimentation, and innovation. Additionally, the department maintains strong collaborations with industry partners, providing students with valuable industry exposure and internship opportunities. The emphasis on research, professional development workshops, and a collaborative atmosphere nurtures the overall growth of students, preparing them for successful careers in academia, research, or the industry.

VICE PRINCIPAL'S MESSAGE

Greetings from M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru, an institution with excellence in the fieldof education. The college has a State-of-the-art infrastructure, with well-equipped laboratories and smart classrooms. We have dedicated experienced and well-qualified faculty members who give their best to curricular, co-curricular, and extracurricularactivities in the college.



To bridge the gap between industry and academia the college has collaborated with various industries, research institutes, and corporates to train and make the students industry ready. The syllabus prescribed by the university is enriched with add-on courses, workshops, training programs, additional practical, outreach activities, Industrial visits, and cutting-edge research, internships, soft skills training makes MSRCASC unique

HOD'S MESSAGE

"I would like to highlight that our theory and practical classes place a strong emphasis on problem-based learning, ensuring that students gain knowledge that holds utility value and can be applied in real-life scenarios, keeping them updated with the latest developments in the field. Moreover, the department is actively engaged in research projects in the major thrust areas of microbiology, and we have successfully secured funds from various agencies to support our research endeavors.



Dr. Prasanna Srinivas R, Head (PG)

I take great pride in our dedicated faculty, who not only

conduct multidisciplinary research programs but also foster a culture of research among our students. We encourage them to undertake in-house research projects, present papers and publish their research work. Additionally, we encourage students to actively participate in co-curricular and extra- curricular activities, creating a well-rounded and enriched learning experience for all".

Welcome to the Department of Microbiology at MSRCASC-AUTONOMOUS. It is my pleasure to extend a warm greeting to all our BSc students.

Our department is dedicated to fostering a dynamic and supportive learning environment. As you embark on your academic journey in microbiology, you will have the opportunity to explore the fascinating world of microorganisms and their impact on health, environment, and industry. Our curriculum is designed to provide you with a comprehensive understanding of microbiological principles, combined with practical skills through laboratory sessions and research projects.



Mrs. Soumya S Shanbhag, Head (UG)

We pride ourselves on our distinguished faculty, who are not only passionate educators but also active researchers contributing to advancements in various fields of microbiology. You will have the chance to engage with cutting-edge research and benefit from their expertise and mentorship.

I encourage you to take full advantage of the resources and opportunities available to you. Participate in seminars, workshops, and departmental activities to enhance your learning experience. Your journey here will be challenging yet rewarding, and we are here to support you every step of the way.

We are committed to your success and to helping you achieve your academic and professional goals. Let us work together to make your time in the Microbiology Department both enriching and enjoyable.

FACULTY MEMBERS

Dr. Pushpa H

Professor and Vice Principal Qualification: M.Sc, M.Phil, Ph.D Area of Specialisation: Mycology, Biodiversity, Bioremediation,

Molecular taxonomy, Bioprospecting



Dr. Prasanna Srinivas R

Assistant Professor and Head (PG) Qualification: M.Sc, M.Phil, Ph.D Area of Specialisation: Medical Microbiology, Immunology and

Enzymology



Dr. Savitha J

Research Advisor, R&D Cell Qualification: M.Sc, Ph.D Area of Specialisation:

Environmental

Microbiology, Microbial

Biotechnology



Dr. Snehalatha V

Associate Professor

Qualification: Msc(Ag).,Ph D, NET **Area of Specialisation:** Agriculture

Microbiology



Mrs. Soumya Satyanand Shanbhag

Assistant Professor & Head (UG)
Qualification: MSc Microbiology,

SET, (Ph.D) VTU

Area of Specialisation: Environmental

Microbiology



Dr. Vemula Vani

Associate Professor Qualification: M. Tech., PhD

Area of Specialisation: Drug

Discovery



Dr. Juliya Rani Francis

Assistant Professor Qualification: M. Sc., Ph. D. Area of Specialisation: Microbial Ecology, Host-pathogen interaction



Dr. Nimita Venugopal C Assistant Professor

Assistant Professor Qualification: M.Sc., Ph.D

Microbiology

Area of Specialization: Microbiology (Antimicrobial

Resistance)



Dr. Bhanupriya C.H

Assistant Professor

Qualification: MSc Microbiology, PhD Plant Biotechnology, Indian Institute

of TechnologyKharagpur Area of Specialisation: Plant

Biotechnology



Dr. Swathi D

Assistant Professor Qualification: MSc, PhD

Microbiology

Area of Specialization: Medical Microbiology & Immun

Dr. Vishal M

Assistant Professor

Qualification: MSc, Ph.D. **Area of Specialisation:** Medical Microbiology, Enzymology,

Phytochemistry



Dr. Arvindganth

Assistant Professor Qualification: MSc, PhD Biotechnology

Area of Specialization: Nanotechnology in drug delivery

systems



Dr. Prashanthi Rajaram

Assistant Professor Qualification: MSc, Ph.D

Area of Specialisation: Environmental Biotechnology, Phytochemistry



Dr. Vidya Jagadeeshan

Assistant Professor Qualification: MSc, Ph.D Area of Specialisation: Plant

Biotechnology & Plant Metabolomics



DEPARTMENTAL ACTIVITIES

1. Guest Lecture:

Department of microbiology conducted guest lecture on "Principle & Applications of Spectroscopy" on 30th of April 2024 at Mother Theresa Auditorium for I and II year of BSc students

The main aim of this guest lecture was to introduce students to the fundamental principles of spectroscopy and to explore different spectroscopic techniques and their applications in chemistry, physics, and other fields. The guest lecture will inspire students to pursue further study or research in spectroscopy-related areas.

99 students from BSc I and II year participated in the guest lecture.

The resource person for this lecture was **Dr. Sudeeksha HC**, Application Scientist, Head-Application and Business Support (Life Sciences), HORIBA India Pvt. Ltd. Bangalore.

Outcome:

This guest lecture sparked interest and curiosity among the students and highlighted the relevance of spectroscopy in advancing scientific knowledge and addressing real-world challenges.

Glimpse of the event













2. National Conference:

The National Conference on "Trends in Multi-Disciplinary Research: Challenges and Applications" was organized by the Dept. of Sciences, M S Ramaiah College of Arts, Science and Commerce on the 15th and 16th of May. This conference was a resounding success, fostering insightful discussions and collaborations in the realm of science.

The objectives of the conference were

- To bring together adverse community of active researchers from India and create a professional environment conducive to learning, collaboration, and networking.
- This event is poised to facilitate the exchange of ideas and the exploration of cuttingedge developments in various scientific disciplines.

The National Science Conference witnessed robust participation from 9 universities and 15 colleges located across Karnataka, including esteemed institutions such as ICAR, JSS, and CSIR. The event also attracted colleges from regions beyond Karnataka, with representations from Calcutta, Lucknow, Pune, and Mumbai. Notably, an ex-student from the University of Massachusetts, US, who graduated with a B.Sc., contributed to the conference, showcasing its international appeal. Furthermore, the conference received an abstract submission from the University of Sri Lanka, adding a global perspective to the discussions and exchanges of scientific knowledge.



3. Guest Lecture:

Department of microbiology conducted guest lecture on "Diagnostic Enzymology" on 1st June 2024 at Visveswaraiah Auditorium for II & III year of BSc and MSc students

The lecture, held at Visveswaraiah auditorium, was part of a Guest Lecture Series and aimed at enhancing the understanding of students with basic diagnostic importance of enzymes and significance of these enzyme testing for diagnosis of diseases.

109 students from BSc II and III year and MSc Microbiology students participated in the guest lecture.

The resource person for this lecture was **Dr. Nagaraja MR**, Associate Professor, East Point College of Medical Sciences and Research Centre, Bangalore.

Outcome:

This guest lecture sparked interest and curiosity among the students and highlighted the relevance of enzymes in diagnosis of diseases. Students are empowered with the knowledge, skills, and confidence needed to utilize enzymatic assays effectively in diagnostic settings and contribute to advancements in healthcare.

Glimpse of the event













4. World No Tobacco Day-31st May 2024

On 31st May 2024, the Department of Microbiology, in collaboration with the National Service Scheme (NSS) and under the auspices of the DBT-STAR College Scheme, successfully conducted an awareness programme in recognition of World No Tobacco Day. The event took place at Mathikere Market, Bengaluru, Karnataka, from 10:30 AM to 12:30 PM

The Programme saw the active participation of approximately 30 students, comprising both undergraduate (UG) and postgraduate (PG) students from the Microbiology Department. The enthusiastic involvement of the students contributed significantly to the success of the event

Outcomes:

- Increased Awareness: The event successfully raised awareness among the local community about the adverse effects of tobacco use.
- **Student Engagement:** The involvement of students in organizing and conducting the programme fostered a sense of responsibility and provided them with practical experience in public health advocacy.
- Community Interaction: The interactive nature of the event allowed for meaningful exchanges between students, faculty, and the public, enhancing the overall impact of the awareness campaign.

Conclusion:

The World No Tobacco Day awareness Programme was a resounding success, thanks to the dedicated efforts of the Students of Department of Microbiology, the support from the NSS, and the backing of the DBT-STAR College Scheme. The collaborative effort not only educated the public on the perils of tobacco use but also inspired a collective commitment towards a healthier, tobacco-free future.









5. Guest Lecture:

Department of microbiology conducted guest lecture on "Effect of Microbial Behaviours and Population" on 7th June 2024 at Dr. A P J Abdul Kalam Auditorium for I, II & III year of BSc students. **Prof. Upendra Nongthomba,** Professor, Developmental Biology and Genetics, Indian Institute of Science (IISc), Bengaluru, delivered the guest lecture.

The Objectives of guest lecture were:

- To share knowledge, expertise, or insights on microbial behaviours and population.
- To provide valuable information to the audience, enhancing their understanding of the topic.

The guest lecture delivered by Prof. Upendra Nongthomba focused on the intricate behaviors of microbial populations and their impacts on various ecosystems. Prof. Nongthomba provided deep insights into microbial interactions and recent trends in science, especially microbiology. He further encouraged the students to achieve their dreams and expressed openness to collaboration with both students and faculty members.

Outcomes:

- The lecture encouraged critical thinking and analytical skills among students.
- Students were motivated to explore research in the field of microbiology and pursue related interests in the future.

The guest lecture on "Effect of Microbial Behaviours and Population" was a resounding success, fulfilling its objectives and providing a platform for students to gain advanced knowledge and inspiration for future research endeavors









6. Dengue Awareness Program:

The awareness program on Dengue and Malaria aimed to educate participants about the prevention, symptoms, and management of these vector-borne diseases. It sought to enrich the localities and shopkeepers, shop vendors with knowledge to combat the spread of these diseases in the community. 35 students of second semester M.Sc Microbiology, faculty members of M.S. Ramaiah College of Arts, Science and Commerce-Autonomous, Bengaluru. The faculty coordinators for the program were Dr. Prasanna Srinivas, Dr Nimita Venugopal C. The students had distributed various pamphlets to public in the residential streets of Mathi Kare and market area and created awareness among the public by making attractive charts on causes of dengue and malaria, transmission modes, prevention control strategies. Various slogans related to dengue and malaria control and prevention in Kannada language were also read aloud by students as a part of awareness.









7. Student Orientation Program:

Orientation program was conducted for I semester BSc students from 15th July 2024 to 20th July 2024. The inauguration ceremony for the 1st year UG autonomous batch was held on 15th July 2024. The event aimed to welcome the new batch of students and provide them with essential information and inspiration as they embark on their academic journey.

Outcome of the program:

By establishing clear attendance criteria and promoting a culture of responsibility and accountability, institutions can support the academic success and holistic development of students while maintaining discipline within the academic environment.





































































8. Industrial Visit (PG) GKVK:

As a part of institutional visit, students of both first and second year M.Sc Microbiology visited GKVK, Bangalore on 30 th July 2024. The students visited department of Soil Science and Agriculture Chemistry where they got exposure to understand the role of different types of soils kept in a museum of paedology. Students were also shown Atomic Absorption Spectrometer (AAS) and other soil testing related instruments in lab. Department of Entomology had a museum with all life cycle of various preserved insects that were beautifully displayed and the beneficial role of insects in agriculture were also well explained by the scientist of the department. Visit to department of sericulture was very enlightening with display of different types of silk worms, where students learnt about mulberry cultivation, life cycle of silk worms, types of silk like Muga silk, Eri silk and Mulberry silk. Various handicraft materials were displayed in sericulture museum. Visit to department of microbiology gave insight about various ongoing research in the department. Also, students visited biofertilizer unit where students gained knowledge on different types of bioinoculants, their production and application. The cultivation of azolla motivated students to enter into entrepreneurship. A visit to department of mycology helped the students in learning about various steps involved in mushroom cultivation. The final visit to GKVK museum gave the complete idea about the institution.





9. Industrial Visit (PG) IIHR

Students of both first and second year M.Sc Microbiology visited Indian Institute of Horticulture Research (IIHR), Hesserghata, Bangalore as a part of institutional visit on 25th July 2024. The students got the knowledge of all scientific inventions happening at the institute which motivated the students to plan their future related to research in horticulture field. Visit to department of Biotechnology gave the practical exposure to plant tissue culture starting from media preparation to callus culture and tissue culture plants which were explained by the scientist of the department. Visit to department of pathology, and mushroom cultivation were also made. Also visit to nursery helped the students to view different saplings of plantation crops.





STUDENTS' & CHIEVEMENTS

- 1. **Abishek S** from BSc VI semester cleared IITJAM, GATE XL AND TIFR-JGEEBILS examination.
- 2. **Abishek S** from BSc VI semester attended the one-year course of Research Programme (Bio-REAP) in Life Sciences during 2023-24
- 3. **Kruthi N Sharma** of BSc VI semester participated in Two-day National Workshop on "Intellectual Property Rights" on 26th & 27th April 224
- 4. **Ms. Emani Akhila** from BSc VI semester attended 2 days lecture workshop on "Recent Advances in Agriculture Microbiology and Biotechnology" organized by Department of Microbiology, School of Life Sciences, St. Josephs University, Bengaluru in association with Indian Academy of Sciences, Allahabad on 7th and 8th May 2024.
- 5. **Ms. Archana M** from BSc VI semester presented paper on "Mucor janssenii and Cladosporium oleaginous fungi for Biodiesel Production" in National Conference on 16th May 2024 at MSRCASC.
- 6. **Ms. Ananya G** from BSc VI semester won 2nd prize in NITTE college fest (Anaadyanta) in solo instrumental category on May 2024
- 7. **Ms. Ananya** G from BSc VI semester won Runner-up prize for state wide talent hunt "Kalahabba" organised by Rotary district 3192 on May 2024.
- 8. **Ms. Ananya G** from BSc VI semester was selected to participate in the undergraduate lecture series organised by NCBS from May-July 2024.
- 9. **Ms. Muktha Shree K R** from BSc VI semester participated in the BCU Inter-Collegiate Powerlifting (76Kg) Competition 2024 and won the Gold Medal at Seshadripuram College, Bengaluru.
- 10. **Abishek S** from BSc VI semester received NPTEL Star Motivated Learner Certificate from NPTEL Swayam Platform.
- 11. **Lavanya AK** from BSc VI semester have participated in intercollegiate Archery Competition and won gold medal. (certificate is pending)
- 12. **Anushka Y S** from BSc VI semester has walked as a Model at "Mysore Yuva Dussehra 2023"
- 13. **Varsh S R** from BSc VI semester attended the one-year course of Research Programme (Bio-REAP) in Life Sciences during 2023-24
- 14. **Deeptangi P** from BSc VI semester attended the one-year course of Research Programme (Bio-REAP) in Life Sciences during 2023-24
- 15. **Tejaswini** from BSc VI semester attended the one-year course of Research Programme (Bio-REAP) in Life Sciences during 2023-24
- 16. **Tejaswini** from BSc VI semester cleared TIFR-JGEEBILLS examination in May 2024.
- 17. **Trupti Hugge Patil** from BSc VI semester cleared GATE BT examination.
- 18. **Trupti Hugge Patil** from BSc VI semester attended the one-year course of Research Programme (Bio-REAP) in Life Sciences during 2023-24
- 19. Ms. Sneha V from BSc VI semester qualified IITJAM examination.

CENTUM SCORERS IN UG MICROBIOLOGY

These students have achieved remarkable academic excellence by securing a centum in their V Semester B.Sc. Paper 5 - Molecular Biology (January-February 2024 Examination):

Sneha Varadaraj: U18EV21S0004

• **Abishek S**: U18EV21S0006

• **Shilpy Chandra**: U18EV21S0010

• **Bindu Vaishnavi M**: U18EV21S0012

• Kavya M: U18EV21S0139

Archana M: U18EV21S0141

• Ranjitha Rajendra: U18EV21S0163

• Lekshmi Gopal: U18EV21S0192

• Shri Hari M Mayya: U18EV21S0196

• Emani Akhila: U18EV21S0212

• Sony Sosa Varghese: U18EV21S0215

• **Aathira S**: U18EV21S0221

• Afran Pasha: U18EV21S0260

• Meghana Kondaraju: U18EV21S0271

• **Mythri M**: U18EV21S0282

• Ria Raghu: U18EV21S0283

• **Ananya G**: U18EV21S0306

• **Ujjwal**: U18EV21S0346

FACULTY ACHIEVEMENTS

PATENT:

1. Dr. Pushpa H & Dr. Ramesha A-Published- 2023

Title of the invention: "Novel Fungal Growth Medium-Samanea Saman Pod Extract Agar (SSEA)"

2. Dr. Vishal M

Title of the invention: "A Hydrogel Composition and a Process for the Preparation Thereof"

FACULTY PUBLICATIONS

• We are pleased to feature the latest publication by **Ch Bhanupriya** and **Satarupa Kar**, titled "Callus-mediated organogenesis and regeneration of Sorghum bicolor under the influence of natural and synthetic growth regulators." Published in In Vitro Cellular & Developmental Biology - Plant (2024), ISSN: 1054-5476, and indexed in **Scopus (Q2)**, this research offers significant contributions to plant biotechnology.

The study investigates the use of both natural and synthetic growth regulators in enhancing the regeneration of *Sorghum bicolor* through callus-mediated organogenesis. You can access the full paper here: https://doi.org/10.1007/s11627-024-10427-y.

OUR NEWSLETTER TEAM

- Dr. Prasanna Srinivas R, Head (PG), Department of Microbiology, MSRCASC
- Dr. Vemula Vani, Associate Professor, Department of Microbiology, MSRCASC
- Mrs. Soumya S Shanbhag, Head (UG), Department of Microbiology, MSRCASC
- Dr. Vishal M, Assistant Professor, Department of Microbiology, MSRCASC

STUDENTS CO-ORDINATORS:

- Mr. KARTHIK. U, V SEM BSC, Department of Microbiology, MSRCASC
- Ms.Kavya M, V SEM BSC, Department of Microbiology, MSRCASC
- Ms.Tejaswini, V SEM BSC, Department of Microbiology, MSRCASC
- Ms. Vasavi, V SEM BSC, Department of Microbiology, MSRCASC
- Ms. Hastha D, III SEM BSC, Department of Microbiology, MSRCASC
- Ms.Nihaarika III SEM BSC, Department of Microbiology, MSRCASC
- Ms.Swapna Sahoo, III SEM BSC, Department of Microbiology, MSRCASC
- Ms. Laya N, III SEM BSC, Department of Microbiology, MSRCASC
- Ms. Manasa V, III SEM BSC, Department of Microbiology, MSRCASC
- Ms.Priyadarshini, I SEM BSC, Department of Microbiology, MSRCASC
- Ms. Manasa S, I SEM BSC, Department of Microbiology, MSRCASC

As the department college newsletter comes to an end, we hope that this edition has provided

valuable insights, updates, and highlights from our vibrant academic community. We extend

our gratitude to the Management, all the contributors, faculty members, staff, and students

who have made this newsletter possible.

We encourage everyone to stay engaged with the department's activities, upcoming events, and

research endeavours. Let us continue to foster a culture of collaboration, innovation, and

excellence in our pursuit of knowledge and academic growth.

We welcome your suggestions, feedback, and contributions for future editions of the newsletter.

Together, let us celebrate our achievements, share our stories, and inspire one another to reach

new heights.

Thank you for being a part of our dynamic department and we look forward to the next edition

of the newsletter.

Best wishes,

Department of Microbiology, Newsletter Team

MSRCASC-Autonomous, Bangalore.