DEPARTMENT OF STUDIES IN
MICROBIOLOGY

UNIVERSITY OF MYSORE
Manasagangothri, Mysore-570 006 India

FACULTY MEMBERS AND THEIR AREAS OF INTEREST

Dr. RAVISHANKAR RAI V. Professor and Chairman	Agricultural Microbiology, Bioprospecting of Medicinal Plants, Forest Pathology, Cell Culture Technology, Genetic Engineering and Edible Vaccines Biodiversity and Conservation
Dr. SHUBHA GOPAL Reader	Molecular Pathogenesis, Genetic Engineering and Proteomics
Dr. N. LAKSHMI DEVI Senior Lecturer	Agricultural Microbiology, Medical Microbiology, Immunology, Mycology
Dr. S. SATISH Lecturer	Agricultural Microbiology, Medical Microbiology, Environmental Microbiology
Dr. M. Y. SRINIVAS Lecturer	Mycology, Mycotoxicology Molecular Microbiology

ABOUT THE UNIVERSITY

University of Mysore is one of the oldest institutions of higher education in the country that has been in continuous existence since its founding. The University was established on 27th July, 1916 by its founding father His Highness Nalvadi Krishnaraja Wodeyar IV, the then Maharaja of Mysore. University of Mysore was the FIFTH University established in the country and the very FIRST in the State of Karnataka. University of Mysore is recognized as one of the Institutions of Excellence among three Institutions in India for the year 2008-09 by Ministry of Human Resource and Development, Govt. of India.

THE DEPARTMENT OF MICROBIOLOGY

The Department of Studies in Botany during 1980's felt the need for M. Sc., Microbiology course considering the fact that Microbiology will play an increasing central role as a kind of beacon for Biology. Accordingly the Department developed the curriculum and designed the course with expertise available in the Department. It was in 1992, that, this M. Sc. Microbiology was started without any financial burden on the University, but with the sole aim of offering another relevant course, considering the need of the society. During 1999, it was identified as a separate section of the Department and it was housed in the Department of Studies in Botany. Microbiology section is established as a separate Department of Studies in Microbiology on 23rd July, 2008 and it is now housed in the Life Science Building.

MISSIONS AND VISION

The Department seeks to produce scientific and technical manpower necessary for achieving the national goal of trained Microbiologists. The vision of the Department is to be an effective provider of knowledge and skills in Microbiology that will empower the students through awareness of the significance of Microorganisms in plant, animal and human health, environment, industry and general human welfare through a problem based and skill oriented curriculum.

NATIONAL STATUS

The Department has well established research laboratory facilities. The Microbiology Department is offering free consultancy services to the farming community, plantation growers, officials of Forest Department and plant nurseries in identifying the causal organism and suggesting the control measures to overcome and manage the plant diseases through plant clinic programme. This is unique in the country through which several thousands of diseased materials are screened, identified and remedial measures suggested to the farmers.

COURSES OFFERED

M. Sc., MICROBIOLOGY

4 Semester – 2 Years Programme

Microbiology is an important and wide ranging discipline with in the life sciences, covering a range of subjects relevant to both human health and disease, environmental studies and industrial / biotechnological applications. It is a subject that includes traditional aspects such as laboratory culture and isolation of specific microbes alongside more contemporary aspects including molecular biology and genetic engineering

Eligibility for admission :
B.Sc. with Microbiology as one of the major / optional subjects from Mysore University or any other University equivalent there to.

Course fee :
INR Rs. 1,86,000/- (4,000 US $).

COURSE DETAIL

S.N.	I Semester	II Semester	III Semester	IV Semester
1	Virology	Microbial Physiology	Choice Based Paper	Industrial Microbiology
2	Bacteriology	Microbial Genetics	Environmental Microbiology	Molecular Biology
3	Mycology	Immunology	Agricultural Microbiology	Genetic Engineering
4	Biostatistics & Computer Application	Food Microbiology	Medical Microbiology	Project Work

TEACHING STRUCTURE

Teaching of M.Sc. (Microbiology) programme is divided into Four Semesters. In the first three semesters lectures, practicals and tutorials are most important forms of teaching. In the final semester there will be additional project work of about 3 months.

PROJECT WORK

For students, the final semester research project work is one of the most stimulating, challenging and rewarding components of the degree. The students can work in National laboratories like Central Food Technology Research Institute, Mysore; Defense Food Research Laboratory, Mysore or any recognized Institutions, Industries and Laboratories at Bangalore for the project work.

CAREER OPTIONS

The career prospects of Microbiology graduates are good as they can fit into various fields related to their specialization. The direct impact of microbes on health and related fields opens up plethora of career options in industries related to health and pharmaceuticals. Research and Academics due to their knowledge of the subject and hands on experience in practical skills. Our graduates have been placed in the includes industries biotechnology, pharmaceutical manufacture, fermentation industry, food, drinks, brewing and the water industry. They are serving as Microbiologists and technical assistants in clinical laboratories, as clinical research coordinates, quality controllers and quality assurance authorities. Many of them have been into research with fellowships from various agencies like UGC, NMPB, ICMR, DBT, DST etc in the national and international Research Institutions.

Ph.D DEGREE IN MICROBIOLOGY

- The candidate holding recognized master's degree (M.Sc with Microbiology / Biotechnology / Biochemistry or an allied area) to be considered for registration
- With Fellowship supported by UGC / CSIR / Any other Funding Agencies.
- A candidate for Ph. D degree after his registration shall be required to work for minimum period of two full years under the guidance of recognized teacher.

THRUST AREA

- Structural elucidation of bioactive compounds for antimicrobial activity from medicinal plants.
- Fungal diversity and applications of molecular markers.
- Isolation and purification of secondary metabolites from endophytic fungi.
- Forest pathology and management of diseases.
- Genetic transformation and production of edible vaccines.
- Hospital acquired infections.
- Post harvest diseases of Fruits and Vegetables.
- Foodborne diseases and virulence factor against oxidative stress

FACILITY AVAILABLE

- Molecular biology laboratory with facility for working with PCR, Electrophoresis apparatus, Deep Freezer, Bio-photometer, Refrigerated centrifuge, Stereo-microscope.
- Greenhouse and field gene bank for medicinal plants.
- Microbial sample collections with deep freezer, bio-safety cabinet

MAJOR PROJECTS IN THE DEPARTMENT

- Bioprospecting and utilization of medicinal plants of Karnataka for sustainable development (National Medicinal Plant Board, New Delhi.)
- Bioactive compound characterization of Hypericum species of Western Ghats (University Grants Commission, New Delhi)
- Thiol-mediated oxidative stress response of Listeria monocytogenes in particular in biofilms (ICMR-BMBF Indo-German Project)
- The role of glutathione and thioredoxin metabolism in gram positive bacterium *Listeria monocytogenes* (Department of Science and Technology, Govt. of India)
- Structural elucidation and exploitation of antimicrobial agents from plant origin against phytopathogens (Department of Science and Technology, Govt. of India)

COLLABORATION

- Department of Plant Biology, University of Virginia, USA.
- School of Biological Scinces, Murdoch University, Perth, Australia.
- Michigan State University, USA.
- Universiti Sains Malaysia, Penang, Malaysia.
- Agricultural Biotechnology Research Center, Academia Sinica, Taipei, Taiwan.
- University of Wuerzberg, Germany.
- Faculty of Medicine and Allied Sciences, Universiti Putra Malaysia

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