

Name : PROFESSOR SUNITA FARKYA

Before joining NCERT, Dr Sunita Farkya worked as Senior Post-Doctoral Associate (Under CSIR Pool Scientist Scheme) in Indian Institute of Technology - DELHI. She has worked on different biological systems; Plant-microbes-interaction. Her primary skills span across Biological Control of Weeds, Plant Biotechnology, Biological Control of weeds, Production of Secondary metabolites. Plant Cell Culture and Fermentations, Industrial Biotechnology. Experimental Techniques and Skills include; **Plant tissue culture techniques:** Development of cultures, genetic transformation, production of secondary metabolites from plant cell cultures, cultivation in bioreactors; **Phytochemistry:** Extraction, isolation and structure elucidation of phytoconstituents; **Molecular Biology Techniques:** Genomic DNA extraction, Polymerase Chain Reaction (PCR), plasmid isolation, genetic confirmation; **Microbial Techniques:** Aseptic culture handling, in-vivo efficacy testing; **Miscellaneous:** Chromatography – TLC, HPLC, Column chromatography, Electrophoresis – Gel and Paper electrophoresis, enzyme extraction and activity assay, toxicity studies; etc. Professor Farkya has also worked on multidimensional projects aiming at Science Education in NCERT.

Research Projects Completed as PI/CoPI:

1. “Studies on the management of Parthenium hysterophorus L. through fungal pathogens” (CSIR, Completed in 1996)
2. “Integrated management of Parthenium hysterophorus L; through some indigenous strains of F. solani and F. oxysporum” (CSIR, completed in 2000)
3. Studies on the production of secondary metabolites from plant cell culture (CSIR, completed in 2004)
4. Investigation on the effect of elicitors on production of Anticancer drug Podophyllotoxin by Plant cell culture (2006)
5. Study of Post Graduate Teachers’ (PGTs) understanding of Plant tissue culture and genetic engineering (Biotechnology) and their application to human welfare. (NCERT, 2008)
6. Studies on the production of anticancer drugs in cell and hairy root cultures of Thuja spp. (UGC, 2009)
7. Study of Biology Curriculum at the Higher Secondary Stage (NCERT, PAC No. 6.01/2012-2013)
8. Study of Textbooks of Biology at the Higher Secondary Stage. (NCERT, 2015)
9. Status study of usability of secondary level Science kit by students. (NCERT, 2017)

10. Improving Learning of Science at Upper Primary Level in two Scheduled Tribes dominated districts of Chhattisgarh (NCERT, 2017)
11. Promoting quality learning in Science and Mathematics in Varanasi and Mirzapur divisions of Uttar Pradesh (NCERT, 2018)
12. Study of Biology syllabi at Higher Secondary Stage. (NCERT, 2019)
13. A Study of the Traditional Indigenous Practices followed by select Scheduled Tribes for Conservation of Natural Resources in different climatic regions of India. (NCERT, 2020)
14. A Study on the efficacy of games, toys and fun activities in teaching-learning of science at upper primary stage (NCERT, 2021)
15. Evaluation of textbook in Biology for class XII. (NCERT, 2021)

Teaching :

1. Postgraduate level (M. Sc. Botany; Taxonomy) at the Department of Biological Science, RD University, Jabalpur (M.P.)
2. B.Tech + M. Tech dual degree course at Indian Institute of Technology (Delhi)
3. B.Sc. B.Ed. professional four-year degree course in Regional Institute of education, Ajmer (NCERT Constituent Unit) India. (Pre-service Teacher Education Program)

Development: Development of several textual materials and e-content and QR code mapping and books

Books : Member Coordinator and Author of Development team in approx. 30 books published by NCERT

Teacher Training Program: Coordinated several in-service teacher training programs in school education

Extension Programs: Team Member in organizing National and State Level Science Exhibitions;

Executive Editor of Journal School Science published by NCERT,

Major Achievements in NCERT:

1. **International Participations:** Attended and participated in the workshop on “New Trends in Science Dissemination” jointly sponsored by ICTP, IAEA and UNESCO held at ICTP, Trieste, ITALY
2. **Development of Herbal Garden (Approx. 200 plant species) in NCERT Campus for learning beyond classroom**
3. **Member 20th Joint Review Mission (SSA)**
4. **Resource Material on Disaster Management; five small booklets**
5. **Organic Farming Text Material for Classes VI, VII and VIII.**
6. **Organization of National Conference on Ancient Indian Knowledge: Science and Technology**

7. Documentation of Traditional Indigenous Practices followed by select Scheduled Tribes of India for Conservation of Natural Resources (under progress)

Research Publications and Presentations: Several Research Publications in National and International Journals and in proceedings of International conferences; Papers presentations in in national and international conferences.

Evaluator of Thesis : Several M. Phil and Ph. D. Thesis of Delhi University and BHU

Reviewer: reputed journals including Current Biotechnology; Plant Omics Journal; African Journal of Science, Technology, Innovation and Development

Administrative Experiences:

Head, Department of Education in Science and Mathematics, NIE, NCERT, New Delhi (1st Oct 2019 -till date);

In-charge Head in the absence of Regular Head since 2013;

In-charge Botany Section, Department of Education in Science & Mathematics at Regional Institute of Education Ajmer (5 Years, 1 and half Months);

Chairperson and member of several academic and administrative committees at RIE & NIE;

Joint Advisor Students at Regional Institute of Education, Ajmer (3 Years);

Hostel Warden, Laxmi Bai Ladies Hostel, Regional Institute of Education, Ajmer (5 Years)