

SWATI SHARMA

M.Sc., Ph.D.

Assistant Professor, Department of Biosciences

Integral University, Lucknow

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<https://scholar.google.co.in/citations?user=0oPff9YAAAAAJ&hl=en> 0000-0003-2518-5374

Area of interest : BOTANY/ MICROBIOLOGY/ AGRICULTURAL MICROBIOLOGY/ PLANT PATHOLOGY/ MICROBIAL TECHNOLOGY/ POSTHARVEST TECHNOLOGY

Education and Qualifications

- **Doctor of Philosophy in Botany** under the guidance of **Dr.(Mrs.) Neeta Sharma**, Prof. Mycology and Plant Pathology Unit, Botany Department, Lucknow University, Lucknow (Awarded 10.04.2013)
- Qualified **CSIR-NET** for Lectureship and JRF in Life Sciences, July 2001
- M.Sc. Plant Science from **Lucknow University** with **I Div.**
- B.Sc. from Lucknow University (**I T College**) with **I Div.**

Experience Teaching

Currently working as Assistant Prof in **Department of Biosciences in Integral University (from July 2013)** teaching in M. Sc Microbiology and B. Sc (H) Biotechnology/Life Sciences/ZBC/Biochemistry along with administrative, co-curricular and extracurricular activities.

Research

Key areas: Plant microbe interaction, Plant growth promotion, Postharvest biology and technology.

Publications

Research experience as CSIR JRF and SRF in NBRI & Botany Dept, LU and at Department of biosciences, Integral University, Lucknow.

19 research papers in International Journals

09 book chapters

Editing

01 book (Edited)

01 research collection

Patents

01 (awarded) 01 (published)

PhD students

08 awarded,

01 submitted thesis

01 currently supervising PhD students in Microbiology/Biotechnology.

Dissertation/Training

Guided B. Sc (H) Biotechnology/Life Sciences/ZBC and MSc Microbiology/Biotechnology dissertations

Conducted Summer internship Training for UG and PG students

Projects

CST UP (2018-2020) final UC submitted) **10.4 Lakhs**

Integral University **Intramural** Project (Completed) **1.27 Lakhs**

Administrative Responsibilities

UG Coordinator in Department of Biosciences and Member of various committees as **Depart. NEP implementation, Faculty board, BOS, Depart. IQAC, Depart. Dicipinary Commettiiee**

Other roles

External examiner for other universities as RMLU, CSMU, Amity University, Era University

Reviewer in many National/International Journals

Resource person many workshops/PDP

RESEARCH PAPERS

SNo	Title	Journal with Vol	Page No/Year	ISSN/ISB NNo.,	Impact Factor,
1.	CONTROL OF FOLIAR DISEASES OF MUSTARD BY <i>BACILLUS</i> FROM RECLAIMED SOIL.	MICROBIOLOGICAL RESEARCH;613	2008 408-413	0944-5013	PEER REVIEWED, IF:5.7
2.	ELICITATION BASED ENHANCEMENT OF SECONDARY METABOLITES IN <i>RAUWOLFIA SERPENTINA</i> AND <i>SOLANUM KHASIANUM</i> HAIRY ROOT CULTURES	PHARMACOGNOSY MAGAZINE; 16	2016 S315- S3120	9753575	PEER REVIEWED, IF:0.98
3.	PHYTOCHEMICAL EVALUATION, ANTIOXIDANT ASSAY, ANTIBACTERIAL ACTIVITY AND DETERMINATION OF CELL VIABILITY (J774 AND THP1 ALPHA CELL LINES) OF <i>P. SYLVESTRIS</i> LEAF CRUDE AND METHANOL PURIFIED FRACTIONS	EXCLI JOURNAL ;15	85-94 2016	1611-2156	PEER REVIEWED, IF:4.068
4.	AGRO-MORPHOLOGICAL DESCRIPTION, GENETIC DIVERSITY AND POPULATION STRUCTURE OF SUGARCANE VARIETIES FROM SUB-TROPICAL INDIA	3 BIOTECH; 8	2018 469	2190-5738	PEER REVIEWED, IF:2.893
5.	PGPR: RENEWABLE TOOL FOR SUSTAINABLE AGRICULTURE.	INTERNATIONAL JOURNAL OF CURRENT MICROBIOLOGY AND APPLIED SCIENCES., 8 (1)	2019 525 530	2319-7706	PEER REVIEWED
6.	EXPLORING OF SALT TOLERANT BIOCONTROL AGENT (STBA) AGAINST PHYTOPATHOGEN OF MUSTARD CROP (<i>BRASSICAE JUNCEA</i>)	INTERNATIONAL JOURNAL OF CURRENT MICROBIOLOGY AND APPLIED SCIENCES., 8 (9)	2019 21322141	2319-7706	PEER REVIEWED
7.	ELICITATION ENHANCED THE YIELD OF GLYCYRRHIZIN AND ANTIOXIDANT ACTIVITIES IN HAIRY ROOT CULTURES OF <i>GLYCYRRHIZA GLABRA</i> L.	JOURNAL OF PLANT GROWTH REGULATION, 38,,	373-384 2019	1435-8107	PEER REVIEWED, IF:4.6
8.	ACC DEAMINASE PRODUCING PLANT GROWTH PROMOTING RHIZOBACTERIA ENHANCE SALINITY STRESS TOLERANCE IN PISUM SATIVUM	3 BIOTECH; 11 12	514 2021	2190-5738	PEER REVIEWED, IF:2.893
9.	A SUSTAINABLE AGRICULTURE TO RESCUE THE VEGETATION FROM THE EFFECT OF BIOTIC STRESS: A REVIEW	LETT. APPL. NANOBIOSCI, 10	2459-2465 2021	2284-6808	PEER REVIEWED
10.	ELUCIDATION OF BIOACTIVE POTENTIAL OF TWO COMMONLY GROWN NORTH INDIAN <i>PSIDIUM GUAJAVA</i> VIZ., LALITA AND SHWETA AGAINST PATHOGENIC FOODBORNE AND MDR BACTERIA	BIOINTERFACER RESEARCH IN APPLIED CHEMISTRY V 11	2021 14090- 14102	2069-5837	PEER REVIEWED

11.	COMPARATIVE EVALUATION OF DIFFERENT SALT-TOLERANT PLANT GROWTH-PROMOTING BACTERIAL ISOLATES IN MITIGATING THE INDUCED ADVERSE EFFECT OF SALINITY IN <i>PISUM SATIVUM</i>	BIOINTERFACER RESEARCH IN APPLIED CHEMISTRY V 11;5	13141 - 13154 2021	2069-5837	PEER REVIEWED
12.	MICROBIAL ENDOPHYTES: A HIDDEN PLANT RESIDENT, APPLICATION AND THEIR ROLE IN ABIOTIC STRESS MANAGEMENT IN PLANTS	JOURNAL OF ECOPHYSIOLOGY AND OCCUPATIONAL HEALTH, 22(3)	127-140 2022	0974-0805	PEER REVIEWED
13.	BIOPOLYMERIC NANOPARTICLES BASED EFFECTIVE DELIVERY OF BIOACTIVE COMPOUNDS TOWARD THE SUSTAINABLE DEVELOPMENT OF ANTICANCEROUS THERAPEUTICS	FRONTIERS IN NUTRITION	2022 2022.9634 13	15862022	PEER REVIEWED, IF:6.59
14.	MECHANISTIC INSIGHTS OF PLANT-MICROBE INTERACTION TOWARDS DROUGHT AND SALINITY STRESS IN PLANTS FOR ENHANCING THE AGRICULTURE PRODUCTIVITY	PLANT STRESS	100073 2022	2667-064X	PEER REVIEWED
15.	SELECTION OF CARRIER MATERIALS TO FORMULATE BIOINOCULANT PACKAGE FOR PROMOTING SEED GERMINATION	LETTERS IN APPLIED NANOBIOSCIENCE	12, ISSUE 3, 2022, 65	ISSN: 2284-6808	PEER REVIEWED
16.	BIOACTIVE COMPOUNDS, ANTIOXIDANT, AND ANTIBACTERIAL ACTIVITY AGAINST MDR AND FOOD-BORNE PATHOGENIC BACTERIA OF <i>PSIDIUM GUAJAVA</i> . L FRUIT DURING RIPENING	MOLECULAR BIOTECHNOLOGY	1-19, 2023	1073-6085	PEER REVIEWED IF 2.6
17.	ASSESSING THE POTENTIAL OF CHITOSAN BASED COATINGS IN MODULATION OF BACTERIOME ON TOMATO CARPOSPHERE	POSTHARVEST BIOLOGY AND TECHNOLOGY	209, 112684, 2024	0925-5214	PEER REVIEWED IF 7.0
18.	A NOVEL GREEN SYNTHESIS OF CU ₂ O NPS FROM <i>CISSUS ROTUNDIFOLIA</i> FOR PHOTOCATALYTIC AND ANTIMICROBIAL ACTIVITY EVALUATION	JOURNAL OF ALLOYS AND COMPOUNDS	174020, 2024	1873-4669	PEER REVIEWED IF 6.2
19.	QUANTUM MECHANICAL CALCULATION OF GRAPHENE OXIDE NANOSHEET PREPARED VIA MODIFIED HUMMER METHOD: ROLE IN DYE DEGRADATION AND ANTIBACTERIAL ACTIVITY	RUSSIAN JOURNAL OF GENERAL CHEMISTRY	94(03):1-9, 2024	1070-3632	PEER REVIEWED IF 0.9
20.					

1	RECENT ADVANCES AND APPROACHES FOR CROP IMPROVEMENT AND SUSTAINABLE AGRICULTURE	Dr. Swati Sharma and Dr. Amita Dubey	ISSN/ISBN No. 978-93-94070-08-0	Publisher Aargon Press 2021
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BOOK CHAPTERS

S.N	TITLE	Book Title	ISSN/ISBN No.	Publisher
1	Commercial use of fungi as biocontrol agent.	<i>Biocontrol of plant diseases</i>	ISBN : 8179102053	Avishkar Publishers, Distributers, Jaipur, India.
2	Postharvest biocontrol-New concepts and application.	<i>Crop stress and its management : Prospectives and strategies</i>	ISBN: 978-94-007-2219-4 (Print) 978-94-007-2220-0)	Springer Netherlands;
3	Potential of PGPR Bacteria in Plant Disease Management.	<i>Biological Controls for Preventing Food Deterioration: Strategies for Pre- and Postharvest Management</i>	ISBN978-1-4939-7060-5 Print ISBN978-1-4939-7059-9	John Wiley & Sons, Ltd
4	Exploiting microbial enzymes for augmenting crop production, Enzymes in Food Biotechnology	Enzymes in Food Biotechnology	Accepted	Elsevier
	Aluminum oxide nanoparticles: plant response, interaction, phytotoxicity and defense mechanism		978-981-99-2419-6	Springer
5	Green Synthesis of Metal-Oxide Nanoparticles from Fruits and Their Waste Materials for Diverse Applications	Nanomaterials from Agricultural and Horticultural Products	81-119, 2023	Springer Nature Singapore
6	Biobased Coatings: An Alternative Approach in Managing Postharvest Diseases	Bio-management of Postharvest Diseases and Mycotoxigenic Fungi, CRC Press	71-88, 9781003089223 2020	Taylor and Francis

PATENTS REGISTERED

TITLE	PATENT APPLICATION			
1. BIOGENIC ANTIMICROBIAL CHITOSAN-BASED NANOPARTICLES AND PROCESS OF THEIR SYNTHESIS USING 2 PLANT (OCIMUMSANCTUM) LEAF EXTRACT	20221	28-APR-	06-MAY-	No.
	10248	2022	2022	202211024871
	71 A			A
LAGENARIA SICERARIA BASED LOW-FAT FUNCTIONAL MAYONNAISE	20231	22-APR-	22-APR-	No.
	10292	2023	2023	202311029273
	73			

ORIENTATION/REFRESHER COURSE/ QIP Attended

Title	PLACE	YEAR	AGENCY
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1	INDUCTION TRAINING PROGRAMME PHASE - I	THROUGH ICT MODE/NITTER KOLKATA	2022	12 DAYS	NITTER KOLKATA
2	AICTE SHORT TERM COURSE ON FREE SOFTWARE AND RESOURCES FOR TECHNICAL EDUCATION THROUGH ICT	INTEGRAL UNIVERSITY	2022	6 DAYS	NITTTR, CHANDIGARH
3	TWO-WEEKS BLENDED QIP WORKSHOP ON "SPREADSHEET APPLICATIONS IN ACADEMICS AND ADMINISTRATION: INTERMEDIATE LEVEL	INTEGRAL UNIVERSITY	2021	12 DAYS	INTEGRAL UNIVERSITY
4	ONLINE TRAINING PROGRAMME ON ACADEMIC LEADERSHIP	INTEGRAL UNIVERSITY	2021	7 DAYS	CALEM, AMU, ALIGARH

ADMINISTRATIVE SUPPORT

DETAILS

• MEMBER,	FACULTY BOARD, FACULTY OF SCIENCES, IU
• MEMBER	BOARD OF STUDIES, BIOSCIENCES, IU
• MEMBER	DQAC, BIOSCIENCES, INCHARGE CRITERIA II
• COORDINATOR	COORDINATOR, BIOSCIENCES STUDENT COUNCIL, IU
• COORDINATOR	DEPARTMENT OF BIOSCIENCES, MANAV PROGRAM (ISSER PUNE)
• FACULTY INCHARGE	ARTISTIC COMMITTEE, DEPARTMENT OF BIOSCIENCES
• TEACHER MENTOR,	BIOSCOPE, STUDENT NEWSLETTER, DEPARTMENT OF BIOSCIENCES, IU
• FACULTY INCHARGE	DEPARTMENTAL INCHARGE FOR SPOKEN TUTORIALS (IIT BOMBAY PROJECT)
• DEPARTMENTAL COORDINATOR	NPTEL SWAYAM

Fellowships/ Awards:

1	Awarded JRF/NET CSIR-UGC	National	CSIR-UGC	2001
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Details of Research Experience

Organization	Designation	Period
Department of Biosciences, Integral University, Lucknow	Assistant Professor	July 2013 till now
Botany Department, Lucknow University, Lucknow.	Research Scholar	April 2007-2011
Botany Department, Lucknow University, Lucknow.	Senior Research Fellow (CSIR)	May 2005- April 2007
Botany Department, Lucknow University, Lucknow.	Junior Research Fellow (CSIR)	Feb 2005- April 2005
National Botanical Research Institute, Lucknow.	Junior Research Fellow (CSIR)	April 2003-Feb 2005
Botany Department, Lucknow University, Lucknow.	Project Trainee (For the partial fulfillment of M. Sc. II year)	2000

Research Guidance-

S.No	Name of Scholar	Title of thesis	Supervisor/co supervisor	Status
1	Dinesh Chandra Sharma	Biochemical analysis, molecular characterization of wild Indian date palm, <i>Phoenix sylvestris</i> Roxb.	Supervisor	Awarded
2	Mrinalini Srivastava	Enhancement of secondary metabolites with the use of biotic and abiotic elicitor in hairy root cultu	Supervisor	Awarded
3	Archana Siraree	Characterisation of commercially important sugarcane varieties of subtropical India by morphological	Supervisor	Awarded
4	Kusum Sharma	Evaluation of halophillic bacteria from Purvanchal region to enhance the growth and yield of Indian mustard.	Supervisor	Awarded
5	Anmol Gupta	Characterization of ACC Deaminase producing bacteria and Bio-inoculant formulation for plant growth promotion (April 11, 2022)	Supervisor	Awarded
6	Ambreen Bano	Biochemical and molecular changes during guava (<i>Psidium guajava</i> . L) fruit ripening (May 30, 2022)	Supervisor	Awarded
7.	Tasueef Fatima	Isolation, characterization, and application of rice endophytes in upland rice cultivation under abiotic stress conditions. (October 12, 2023)	Supervisor	Awarded
8	Shruti Rai	Genome wide association study (GWAS) to dissect the key metabolite (mqtls) underling the thebaine content in opium poppy (<i>Papaver somniferum</i> l.)	Supervisor	Submitted
9	Smita Rai		Supervisor	
10	Shefali Singh		Supervisor	

Papers Presented in National and International Symposia:

1. **Sharma, S.** and Sharma, N. (2005). Exploitation of bioagents as an alternative strategy to control post harvest fungal rotting of fruits and vegetables. *Proc. Third International Conference on plants and Environmental pollution*, NBRI, Lucknow. Abstract No. SV-P-21.
2. **Sharma, S.,** Rai, P. and Sharma, N. (2006). Formulation of *Bacillus* sp. for biological control of *Alternaria* leafspot of Mustard. *Proc. Annual meeting Indian Phytopathological Society (M. E. Zone) and National Microbial Diversity and plant health problems*, Gorakhpur.
3. Rai, P., **Sharma, S.** and Sharma, N. (2006). Antibiotic activity of an endophytic fungal isolate *Trichoderma atroviride* P. Karsten. *Proc. Annual meeting Indian Phytopathological Society (M. E. Zone) and National Microbial Diversity and plant health problems*, Gorakhpur.
4. Basant Prabha, **Sharma, S.** and Sharma, N. (2007). Combining yeast and chitosan treatment to control blue mold disease of apple. *Proc. 94th Indian science congress (Part II) Sec XIV* Abstract No. 52.
5. **Sharma, S.,** Agnihotri, S. and Sharma, N. (2007). Protein profile of different *Bacillus* isolates used as bioagents. *Proc. 94th Indian science congress (Part II) Sec XIV* Abstract No. 53.
6. **Sharma, S.,** Tripathi, A., Vaish, A. and Tiwari, A. (2007). *Bacillus*: A Biocontrol agent. *Proc. Annual meeting Indian Phytopathological Society (M. E. Zone) and National Symposium on Advancing frontiers of plant disease management*, N. D. Univ. of Agri and Tech, Kumarganj, Faizabad. Pp. 92.
7. Awasthi, P. and **Sharma, S.** (2007). Post-harvest application of yeast as biocontrol agents. *Proc. Annual meeting Indian Phytopathological Society (M. E. Zone) and National Symposium on Advancing frontiers of plant disease management*, N. D. Univ. of Agri and Tech, Kumarganj, Faizabad. Pp. 36.
8. Sharma, D. C., Shukla, R., **Sharma, S.,** Bajpai, P., Pathak, N. (2015). Evaluation of phytochemicals, free radical scavenging and antibacterial activity of *Phoenix sylvestris*. *International Conference on Medicinal Plants: Resource for Affordable New Generation Healthcare 2015*. CIMAP
9. Sharma, D. C., Shukla, R., Singh, A., Naureen, S., **Sharma, S.,** Bajpai, P., Pathak, N. (2015). Isolation and identification of partially purified compounds for free radical scavenging activity from *Phoenix sylvestris*. *National Level Conference on Nano-sciences, Nano-toxicology and Nano-informatics present and future prospective-2015*
10. Sharma, D. C., Tiwari, R., Shukla, S., Shukla, R., **Sharma, S.,** Bajpai, P., Pathak, N. (2015). Increasing shelf life of fruits by using nanotechnology. *National Level Conference on Nano-sciences, Nano-toxicology and Nano-informatics present and future prospective-2015*.
11. Upadhyay, T.K., Sharma, R., **Sharma, S.,** Fatima, N., Sharma, D., Misra, A., (2015) Reparation and characterization of mushroom derived biopolymeric microparticles for improved targeting of alveolar macrophage. *International conference on Biotechnological Advancements in free radical biology and medicine*, IU, 14-16 Nov 2015
12. Sharma, D. C., Shukla, R., **Sharma, S.,** Bajpai, P., Pathak, N. (2015). Evaluation of phytochemicals, free radical scavenging and antibacterial activity of *Phoenix sylvestris*. *International Conference on Medicinal Plants: Resource for Affordable New Generation Healthcare 20nd-22nd March 2015 held at CIMAP Lucknow..*
13. Sharma, D. C., Shukla, R., **Sharma, S.,** Bajpai, P., Pathak, N. (2016). A correlative study of total phenolic and flavonoids content of *Phoenix sylvestris* fruit responsible for free radical scavenging activity. *Advances in Plant Science Frontier: Development and Environment*, At G. F. College, Shahjahanpur (UP), 26th-27th November 2016.
14. Sharma, D. C., Shukla, R., **Sharma, S.,** Bajpai, P., Pathak, N. (2017). *Phoenix sylvestris* leaf extract: An *In-silico* study of alpha amylase inhibition involved in Diabetes. *National Seminar on Innovations & Challenges in Basic & Applied Sciences*. March 04, 2017 at Maharaja Agrasen University, Solan, Himanchal Pradesh.

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- Organized International Conference on Biotechnological Advancements in Free Radical Biology and Medicine as **Resource person** (ICBAFM-2015)
 - Organized national Workshop on Nanomedicine -2014 as **Resource person**
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Special Workshops attended

- Training workshop on research methodology and statistical methods in biomedical research July 26-28, 2004, ITRC, Lucknow.
 - Workshop on Tools and Technique in Bioinformatics December 28-29, 2010, Centre of Excellence in Bioinformatics, Biochemistry Dept., University of Lucknow.
 - Workshop on IPR 2014, IU.
 - National workshop on nanomedecine 2014, IU.
 - National Level Conference on Nano-sciences, Nano-toxicology and Nano-informatics present and future prospective-2015.
 - “Institutional Workshop on oil Conservation” PCRA, Gov of India, IU 01 Aug 2015
 - FDP on “Prospective Modern Teaching Techniques and uses of case studies through experimental learning” IU, 22 Aug 2015
 - International conference on Biotechnological Advancements in free radical biology and medicine, IU, 14-16 Nov 2015
 - FDP on METLAB, IU, 1-7th Feb 2016
 - CALAM Course on ‘How to teach effectively’ by HRD AMU.
 - Refresher Courses in Botany/ Biotechnology/Chemistry
 - Induction Course from NITTER Kolkata
 - QIP in Excel
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Details of Software Proficiency

- Tools used in Bioinformatics;
 - Statistical software as Sigma Stats, Sysstat, SPSS etc;
 - Photoshop, Pagemaker, Coral Draw;
 - MS Office (Word, Excel, PowerPoint),
 - RDBMS - SQL Server 7, Core Java Programming
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