

# Curriculum Vitae

## Professor Rana Pratap Singh



**Specialization: Water and Air Pollution, Bioremediation**

**Former Chairman, UP State Environmental Impact Assessment Authority, Lucknow  
(Period - Oct. 2017 to June 2021)**

**Former Member, UP State Environmental Impact Assessment Committee  
(Period - 2010 to 2013)**

**Dean Academic Affairs**

**Director, Internal Quality Assurance Cell (IQAC)**

**Chairman, Research Project Advisory Committee, Environmental Science,  
UPCST, Lucknow.**

**Professor, Deptt. of Environmental Science**

**Coordinator Centre for Industry Institution Partnership program**

**Former Dean Research and Development**

**Former Dean, School for Environmental Sciences**

**Former Head, Deptt. of Environmental Science**

**Babasaheb Bhimrao Ambedkar University (A Central University) Vidya Vihar, Rae Bareilly Road,  
Lucknow-226025**

**President, The Society for Science of Climate Change and Sustainable Environment, New Delhi**

**President, The Society for Environmental Sustainability, Lucknow**

**Vice President, Academy of Environmental Biology, India**

**Editor-in-Chief, Physiol. Mol. Biol. Plants ([www.springer.com/journal/12298](http://www.springer.com/journal/12298))**

**Hon. Editor, Climate Change & Environmental Sustainability (<http://ssceonline.wordpress.com>)**

**Editor-in-Chief, Kahaar; A multilingual magazine ([www.kahaar.in](http://www.kahaar.in))**

## Contact Details

### Office

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Babasaheb Bhimrao Ambedkar University,

Lucknow-226025, India

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[www.ranapratap.in](http://www.ranapratap.in)

<http://www.bbau.ac.in/new/dept/des/CV%20of%20Prof.%20Rana%20Pratap%20Singh.PDF>

### Residence

House No. 247,

Eldeco-(Udyan)-II, Sector-II

Raebareilly Road, Lucknow-226025

## Brief CV

Professor Rana Pratap Singh ([www.ranapratap.in](http://www.ranapratap.in)) was born on 1st February, 1959 at Prithvipur district Kushinagar, Uttar Pradesh (India) and educated initially in Kushinagar, graduated from DDU Gorakhpur University, Gorakhpur and earned a Ph.D. in Life Sciences in the field of Nitrogen Metabolism in Plants from Devi Ahilya University Indore in 1985. Dr. Singh is Professor in Environmental Science, Director IQAC, Dean Academic Affairs and Coordinator Center for Industry University Partnership Program in the Central University: Babasaheb Bhimrao Ambedkar University, Lucknow, India. He is Chairman, State Environmental Impact Assessment Authority, UP; An statutory body of MoEF, New Delhi.

He has Worked as faculty of Bioscience and Biotechnology at Maharshi Dayanand University, Rohtak during 1986-2005 and from 2005 working as Professor of Environmental Science at BBAU, Lucknow. He has successfully guided 32 scholars for their Ph.D Degree, 3 students for M.Phil Dissertation about 100 students for their Master's dissertation. He has Worked as visiting scientist at AIIMS, New Delhi, University of Guelph, Ontario, Canada and Yunnan Agriculture University, Kunming, PR China. Earned 8 National and State Awards for research and academic contributions i.e. Maharshi Samman, (2020), RASSA, New Delhi, Panjab Singh Vishisth Krishi Vaigyanik Puraskar, Uttar Pradesh Academy of Agricultural Sciences, Lucknow, India (2016), Scientist of Excellence Award, Society for Plant Research, Meerut, India (2008), AEB Honour Academy of Environmental Biology India, Lucknow, India (2012), R. D. Asana Medal, Indian Society for Plant Physiology, New Delhi, India (1992), JEB Young Scientist Award, Academy of Environmental Biology India, Lucknow, India (1992), First prize award on Poetry Book, Haryana Sahitya Academy, Chandigarh, India (1988-89), First prize award on Children's Book Haryana Sahitya Academy, Chandigarh, India (1994-95) and other awards i.e. NSERC Biotech Visiting Fellowship - University of Guelph, Canada (1996), UNESCO ST Biotech Fellowship by UNESCO, Paris, France (1994), INSA Visiting Fellowship Indian National Science Academy, New Delhi, India (1992), Co-edited 18 books and published over 176 research publications which have been highly cited by the peers worldwide. His Google Scholar citation index show a total citation of over 6134 for his research publications with a H index of 42 and i10 index of -101

Professor Rana Pratap is Editor-in-Chief of an International monthly Research Journal Physiology and Molecular Biology of Plants (PMBP, Thomson Reuters IF-3.04, NAAS I-Fover 8), Co-published by Springer Nature and Professor HS Srivastava Foundation for Science and Society ([www.phssfoundation.org](http://www.phssfoundation.org)). He is also Editor and Editorial board Members of 3 more International journals. Presently he is President of Two National Academic Societies "The Society for Science of Climate change and Sustainable Environment" and "Society of Environmental Sustainability" and General Secretary of PHSS Foundation for Science and Society. He has contributed significantly in the field of nitrogen metabolism and heavy metal toxicity in Plants. His present research interests are "Understanding biodiversity and ecological behaviour of rhizospheric microbes, Development of novel Climate Resilient Multifunctional microbial stimulants and Rhizo engineering of beneficial soil inoculants for sustainable agriculture and to design novel below ground and above ground agro-ecosystems for enhanced ecological and economic benefits. Professor Singh is actively involved in promoting innovation, technology, cultural built-up, education and MSMEs for Rural upliftment. He is fellow of Indian Water Resources Fellowship by Indian Water Resources Society (IWRS) (HQ: IIT, Roorkee), Fellow of International Society for Environmental Botanists, (ISEB), CSIR-NBRI, Lucknow, Fellow of Indian Society for Plant Physiology, New Delhi (HQ: ICAR - IARI, New Delhi), Fellow of Academy of Environmental Biology of India (HQ: CSIR - IITR, Lucknow).

During 17 years tenure of Professorships he worked as officiating VC, Dean Research and Development, Dean School for Environmental Science, Dean School for Management Studies, Dean School for Physical Sciences, Head, Department of Environmental Science and Department of Mathematics, Proctor, Controller of Examination incharge Registrar and at Babasaheb Bhimrao Ambedkar University, Lucknow time to time.

## Vision and Mission

Considers education, research and environmental management as most significant wealth for progress of the nation and a cutting edge tool for the development of contemporary knowledge based society. Environmental Management is key for the sustainability of the human age and to meet the United Nations sustainable development goals in era of climate change and global warming. The education and research are known as most authentic tool to understand our problems and to resolved it. Higher education has challenges to accommodated a large number of youth with different socio-economical background for equity, quality and global competitiveness. The rural masses are left over group and require special attention for their formal and functional education and sustainable development.

## Basic Information

<b>Name</b>	<b>Dr. Rana Pratap Singh, M.Sc. Ph.D.</b>
<b>Designation</b>	<b>Professor</b>
<b>Father's name</b>	Late Shri Vikram Singh
<b>Date of Birth</b>	01-02-1959
<b>Grade Pay</b>	Rs. 10,000 (+)
<b>Basic pay</b>	Rs. 1,93,800/ p.m. (Revised Basic pay)
<b>Research Experience</b>	39+ years
<b>Teaching Experience</b>	34+ years (Post-graduate Teaching)

## Personal Details

Born on 1st Feb., 1959 in village Prithvipur (presently in Kushinagar District of Uttar Pradesh, India), and initially educated in village schools and graduated from St. Andrews College under the Gorakhpur University, Gorakhpur. Obtained a Ph.D. in Life Sciences at Devi Ahilya Vishwavidyalaya, Indore and started a career as university teacher in 1986 at Maharshi Dayanand University, Rohtak (Haryana, India) as Lecturer and Reader in Department of Biosciences, before joining BBA University, Lucknow, as Professor of Environmental Science in 2005.

## Academics

<b>Degree</b>	<b>Name of the University</b>	<b>Year of Passing</b>	<b>Subjects</b>
B. Sc.	Gorakhpur Univ. Gorakhpur (UP)	1977	Zoology, Botany, Chemistry
M.Sc.	Gorakhpur Univ. Gorakhpur (UP)	1979	Botany
Ph.D.	Devi Ahilya University, Indore	1985	Life Science

Ph. D Topic		Assimilation of Inorganic Nitrogen and Primary Amination Reactions in Maize Seedlings	
Post-Doctoral	AIIMS, New Delhi	1992	INSA Visiting Fellow
	University of Guelph, Ontario, Canada	1994	UNESCO ST Biotech Fellow
	University of Guelph, Ontario, Canada	1996	NSERC, Biotech Visiting Fellow

### Positions Held

#### Administrative Responsibilities and Membership of the Statutory Bodies in the University:

- **Chairman**, State Environmental Impact Assessment Authority, U.P. (For Three Years w.e.f. November, 2017 to June, 2021)
- **Vice-Chancellor**, Babasaheb Bhimrao Ambedkar University, Lucknow (08.07.2022 to 09.07.2022)
- **Vice-Chancellor**, Babasaheb Bhimrao Ambedkar University, Lucknow (7<sup>th</sup> December, 2018 to 10<sup>th</sup> December, 2018)
- **Vice-Chancellor**, Babasaheb Bhimrao Ambedkar University, Lucknow (28<sup>th</sup> December, 2018)
- **Dean Academic Affairs**, Babasaheb Bhimrao Ambedkar University, Lucknow, (2017.....contd.)
- **Director, IQAC**, Babasaheb Bhimrao Ambedkar University, Lucknow, (2021.....contd.)
- **Chairman, Research Project Advisory Committee**, Environmental Science, UPCST, Lucknow. (2021 and 2022)
- **Dean Research and Development (R&D)**, Babasaheb Bhimrao Ambedkar University, Lucknow, (2019 to 2021)
- **Professor-in-Charge Academic**, Babasaheb Bhimrao Ambedkar University, Lucknow, (2015-2017).
- **Director, IQAC**, Babasaheb Bhimrao Ambedkar University, Lucknow, (2017 to 2019)
- **Dean**, School for Environmental Science, BBAU, Lucknow ( 2009 to 2012 )
- **Dean**, School for Management Studies, BBAU, Lucknow, (2013-2014).
- **Registrar**, Babasaheb Bhimrao Ambedkar University, Lucknow (26.02.2007 to 02.03.2007, 20.04.2007, 08.07.2022 to 09.07.2022).
- **Registrar and Finance Officer**, Babasaheb Bhimrao Ambedkar University, Lucknow (19.10.2005).
- **Controller of Examination**, Babasaheb Bhimrao Ambedkar University, Lucknow (Sept. 2009 – Dec. 2010).
- **Proctor**, Babasaheb Bhimrao Ambedkar University, Lucknow (2005 – 2007)

- **Head**, Department of Environmental Science, BBAU, Lucknow Since August, 2006- August 2009
- **Coordinator**, Centre for Industry Institution Partnership Program BBAU, Lucknow (2013.....contd.)
- **Coordinator**, FIST Program-2005 Babasaheb Bhimrao Ambedkar University, Lucknow (2006-2011)
- Member, **Board of Management**, Babasaheb Bhimrao Ambedkar University (2008-2011)
- Member, **Board of Management**, Babasaheb Bhimrao Ambedkar University (, 2011 to 2014)
- Member, **Academic Council**, Babasaheb Bhimrao Ambedkar University, Lucknow. (2005 to till date)
- Member, **Academic Council**, Maharshi Dayanand University, Rohtak Haryana (India) (As Lecturer and Reader before 2005).
- Member, **Planning Board**, Babasaheb Bhimrao Ambedkar University, Lucknow. (2008-2011)
- **Chairman, School Board**, School for Environmental Science, Babasaheb Bhimrao Ambedkar University, Lucknow. (July, 2009-2012)
- Member, **School Board**, School for Environmental Science, Babasaheb Bhimrao Ambedkar University, Lucknow. (2005 till date)
- **Chairman**, Board of Studies, Department of Environmental Science, Babasaheb Bhimrao Ambedkar University, Lucknow. (2006-2009).
- Member, **Board of Studies**, Babasaheb Bhimrao Ambedkar University, Lucknow. (2005 to till date)
- Member, **Board of Studies**, Maharshi Dayanand University, Rohtak Haryana (1996 – 1999)
- Member, **Board of Studies**, Maharshi Dayanand University, Rohtak Haryana. (2002 – 2005)
- Member, **Research Degree Committee**, Department of Environmental Science, Babasaheb Bhimrao Ambedkar University, Lucknow (2005 – Till Date)
- Member, **Board of Studies**, Dr. Ram Manohar Lohiya Avadh University, Faizabad. (2016-2017)
- Member, **Board of Studies**, Department of Environmental Science, Jiwaji University, Gwalior (One Term)
- Member, **Board of Studies**, Department of Environmental Science, Central University of Jharkhand, Ranchi (One Term)
- Member, **Research Degree Committee**, Department of Life Science, Awadesh Pratap Singh University, Reeva (M.P.)

### Other Positions Held

S. No.	Position held	Institution/ University	Duration

1	JRF and SRF CSIR, New Delhi	D A University, Indore and M. D. University, Rohtak, India	1981- 1986
2	Scientific Officer, Biochem	U. P. Council of Sugarcane Research, Shahjahanpur, India	1988*
3	INSA Visiting Fellow	AIIMS, New Delhi, India	1992**
4	UNESCO ST Biotech Fellow	University of Guelph, Ontario, Canada	1994**
5	NSERC, Biotech Visiting Fellow	University of Guelph, Ontario, Canada	1996**
6	University Faculty	M. D. University, Rohtak, India	1986-2005
7	University Faculty	B.B.A. University, Lucknow, India	2005- till date
* Lien from M.D. University, Rohtak			
** Duty/ Academic leave from M. D. University, Rohtak			

### Expert in Different Committees

- Chairman, Teacher selection committee in Kendriya Vidyalaya, Gomti Nagar Lucknow.
- Member of the Library Advisory Committee, BBA University, Lucknow, February, 2012 to February, 2014
- Expert in the screening committee for **Lecturer, Department of Environmental Science**, BBAU, 2014
- Expert in the screening committee for **Technical Assistant, Lab Assistant, Lab Attendant and Library Assistant**, BBAU, 2014
- Expert in the screening committee for **Hindi Officer, Hindi Translator, Hindi Typist**, BBAU, 2014
- Expert in the screening committee for **Assistant Registrar, Senior Assistant and Lower Division Clerk**, BBAU, 2014
- Chairman, Departmental Promotion Committee, BBA University, Lucknow, 2013
- Evaluation of Ph.D. thesis & practical examination of post-graduate under graduate courses of various Universities

### Awards and Honors

- **Prof. G. Panigrahi Memorial Lecture Award** The indian Botanical Society (2022)
- **Panjab Singh Vishisth Krishi Vaigyanik Puraskar** Uttar Pradesh Academy of Agricultural Sciences, Lucknow, India (2016)
- **Scientist of Excellence Award** Society for Plant Research, Meerut, India (2008)
- **AEB Honour** Academy of Environmental Biology India, Lucknow, India (2012)
- **R. D. Asana Medal** Indian Society for Plant Physiology, New Delhi, India (1992)



- **JEB Young Scientist Award** Academy of Environmental Biology India, Lucknow, India (1992)
- **First prize award on Poetry Book** Haryana Sahitya Academy, Chandigarh, India (1988-89)
- **First prize award on Children's Book** Haryana Sahitya Academy, Chandigarh, India (1994-95)

### **Other Honours**

- **UNESCO ST Biotech Fellowship** by UNESCO, Paris, France (1994)
- **NSERC Biotech Visiting Fellowship** - University of Guelph, Canada (1996)
- **INSA Visiting Fellowship** Indian National Science Academy, New Delhi, India (1992)

### **Fellow of Academic Societies**

- **Indian Water Resources Fellowship** by Indian Water Resources Society (IWRS) (HQ: IIT, Roorkee)
- **Fellow of International Society for Environmental Botanists, (ISEB)**, CSIR-NBRI, Lucknow
- **Fellow of Indian Society for Plant Physiology, New Delhi** (HQ: ICAR - IARI, New Delhi)
- **Fellow of Academy of Environmental Biology of India** (HQ: CSIR - IITR, Lucknow).

### **In Leadership of Academic Societies**

- President (Elected) The Society for Science of Climate Change and Sustainable Environment, New Delhi ([www.ssceonline.wordpress.com](http://www.ssceonline.wordpress.com)) (2018 – contd.)
- President (Elected) of Society for Environmental Sustainability, Lucknow. (2018 – contd.)
- President UP, (Elected) Royal Association for Science Led Socio-cultural Advancement (RASSA), New (2017 – contd.)
- Vice-President (Elected) of the Academy of Environmental Biology (India), Lucknow. (2014 – contd.)
- General Secretary (Elected), Professor H.S. Srivastava Foundation for Science and Society, Lucknow. (2008 – contd.)
- Secretary (Elected), The society for Science of Climate Change and Sustainable Environment, New Delhi (2009 - 2017)
- Joint Secretary, Clean and Green Environmental Society, Lucknow. (2017 – contd.)
- Member Executive Committee International Society of Environmental Botanists, CSIR-National Botanical Research Institute, Lucknow. (2015 – contd.)

### **Science-led Social Contributions**

- Worked as Volunteer Resource Person during 1981-1984 as Ph. D. Scholar at Devi Ahilya University, Indore in Innovative Science Education Programs of Eklavya in Rural Middle Schools of Madhya Pradesh.
- Worked as Science Communicator in Villages and Towns of Haryana during 1987-2005 for Development of Scientific Awareness, Awareness against Superstition and Use of STI in Socio-Economic Development of Rural Population as University Faculty of M.D. University, Rohtak.
- Working for a Program Rural Initiative for Inclusive Development in Eastern Uttar Pradesh to Organize and Support Small and Marginal Farmers and Agricultural Labourers to Enhance their Income and Socio-Economic Conditions Using Emerging Technologies and Cooperative Efforts for Organic Food Production and Green & Clean Surroundings.

### **Life Membership of Academic Societies**

- National Academy of Sciences, Allahabad India
- Indian Science Congress Association, Calcutta
- International Society for Environmental Botanist, Lucknow
- Asian PGPR Society for Sustainable Agriculture, Hyderabad
- Academy of Environmental Biology India, Lucknow
- Indian Society for Plant Physiology, New Delhi
- The Society for Plant Research, Meerut
- Society for Plant Physiology and Biochemistry, New Delhi
- Society for Plant Biochemistry and Biotechnology, New Delhi
- Professor H.S. Srivastava Foundation for Science and Society, Lucknow
- The Society for Science of Climate Change and Sustainable Environment, New Delhi
- Indian Botanical Society (IBS), Lucknow
- Clean and Green Environmental Society, Lucknow
- Uttar Pradesh Academy of Agricultural Science, Lucknow
- Uttar Pradesh Academy of Sciences, Lucknow
- Haryana Vigya Manch (HVM), Rohtak
- Association of Microbiologists of India (AMI), New Delhi
- Royal Association for Science-led Socio-cultural Advancement (RASSA), New Delhi
- UP Association for the Science and Technology Advancement
- The Society for Conservation of Wild Life , Lucknow
- Hindi Vigyan Sahitya Parishad, Mumbai
- The Society for Environmental Sustainability, Lucknow
- International Society for Noni Science, Chennai
- Indian Academy of Social Sciences, Allahabad
- International Union for Conservation of Nature, Gland, Switzerland -2016-2020



### **Editor/ Reviewer**

- Editor-in-Chief of an International Journal “Physiology and Molecular Biology of Plants [PMBP ([www.springer.com/journal/12298](http://www.springer.com/journal/12298))] since 2002
- Editor of an International Research Journal “Climate Change and Environmental Sustainability”[CCES([www.indianjournals.com/ijor.aspx?target=ijor:cces&type=home](http://www.indianjournals.com/ijor.aspx?target=ijor:cces&type=home))], since 2013
- Editor-in-Chief of an International Journal of Science, Technology and Society (IJSTS) since 2015 ([http://www.bbau.ac.in/new/research\\_journal.aspx](http://www.bbau.ac.in/new/research_journal.aspx)).
- Editor-in-Chief of a multilingual quaternary magazine "Kahaar " ([www.kahaar.in](http://www.kahaar.in)), since 2014

### **Science Communication and Literature**

During stay in Madhya Pradesh and Haryana, has been actively involved in the activities of literacy, science literacy and science communication through the NGOs like Eklavya, Bhopal and Haryana Vigyan Manch (HVM), Professor H. S. Srivastava Foundation for Science and Society, Lucknow ([www.phssfoundation.org.in](http://www.phssfoundation.org.in)) and Prithvipur Abhyadaya Samiti, Lucknow ([www.prithvipur.org](http://www.prithvipur.org)). The HVM was honoured with best science popularizing agency to children in early nineties when working as Secretary. Worked as member, Joint Secretary, Secretary and President for about 1½ decades with HVM and worked as Editor for its two Hindi monthly magazines namely Haryana Science Bulletin (From 1991 to 1996) and Parasmani, Children’s magazine (from 1997-2000). Wrote books for children “Ek Tha Suraj, Ek The Ped” and “Pahale Murgi Ayee Ya Anda” which witnessed many editions, awarded by Haryana Sahitya Academy ( Ek Tha Suraj, Ek Tha Ped) , and was transcribed in Telegu and Malayalam. Wrote other books also for children and neo-literates and transcribed books of Prof. S. Sivadas from Malayalam through English. He wrote script for a Hindi serial “Sare Jahan Se Achha” broadcasted by DD-2 and anchored by Mr. Gauhar Raza. Presently, he is editing a multilingual magazine Kahaar ([www.kahaar.in](http://www.kahaar.in)) for science communication to common masses and working with a rural library network for knowledge exposure of rural people.

### **Research Publications**

Total Publications – 204  
Research article -137  
Review Article – 21  
Book Chapters -28  
Book- 18  
ISI Impact Factor – 192.127  
NAAS Impact Factor – 401.285

#### **Google Citation**

Cited By	All	Since 2017
Citation	6024	3011
h- index	42	29
I <sub>10</sub> index	97	63

### **Research Contributions**

Professor Singh has made significant contributions in understanding of ammonia assimilation and N- metabolism in plants, uptake and removal of toxic heavy metals from soil and water and isolation, characterization and application of novel microbes as well as microbial consortia immobilized in organic carriers for growth promotion and bio-control of plants in non-stressed and stressed conditions. His research works are well received by peers (*Google Citation Indices; Total citation: 5262, H-index: 40 and i10: 91*) which include 05 papers cited between 100 to 150 times and 03 papers cited for over 200 to 289 times. His one of the papers, which established role of GDH in ammonia assimilation in plants under stressed conditions has received 289 citations. To replace the toxic chemical fertilizers, which are impacting the soil fertility and human health, he has developed organic matrix based slow release formulations by immobilizing microbes and lower amount of synthetic fertilizers and demonstrated their efficacy in rice, wheat, mustard and moongbean. Besides, contributed new knowledge on remediation of toxic metals from soil and water ecosystems and demonstrated that castor is a better value added phytoremediator than Indian mustard in semi arid Indian conditions. The research work done have provided new insights in understanding of ammonia assimilation, N- metabolism, heavy metal toxicity and ecological nutrition in non-stressed and stressed conditions as well as bio-control of the diseases in plants. His novel findings reveal the knowledge and understanding of role of Ammonia assimilation pathways in non-stress and stressed agro-climatic conditions, role of nitrogenous molecules in *in-vitro* morphogenesis and development and application of low cost organic matrix based granular slow release fertilizers for rice, wheat, mustard and other crops, and toxicity and remediation of soil and water ecosystems.

He has 33 years of PG teaching and 38 years of research experience as well as 14 years of administrative experiences in MD University, Rohtak and Babasaheb Bhimrao Ambedkar University, Lucknow. He has Guided **08 Post Doctoral Fellows, 32 Ph.D. students, 03 M.Phil Students and over 100 M.Sc. Students (Dessertation)** and **published more than 120 original research papers, 18 review articles and 25 book chapters (Cumulative Impact factor of Research Publications (Thomas Reuters) Impact Factor is about : 200 )** and 17 books published from CAB International Kluwer, Springer, IBH Oxford, Studium Press etc. Guided about 250 M.Sc. and M. Phil students for their Dissertations.

### Research Project

- Completed / Ongoing Research projects funded by Department of Science & Technology, Government of India, CSIR, New Delhi and University Grant Commission, New Delhi, etc.

S. No.	Client/Organizat ion's name	Nature of project	Duratio n of project	Amount of grant (Rupees)	Salient outcomes
1.	CSIR, New Delhi, Involved as PI	PQQ-binding of Cu- Amine-oxidase isolated lentil/pea seedlings	1991-94	Rs. 4,80,163/-	Isolated and characterized PQQ- binding amine oxidase involved in polyamine metabolism

2.	UGC Major Project, Involved as PI	Role of proline in TDZ-induced somatic embryogenesis in chickpea	1998-2000	Rs. 4,66,012/-	Studied mechanism of involved in <i>in-vitro</i> regeneration of somatic embryogenesis in chickpea by L-proline
3	UNESCO sponsored short term Bio-Tech. Fellowship to work in University of Guelph, Ontario, Canada	Response of some nitrogen compounds on TDZ-induced somatic embryogenesis in peanut, geranium and chickpea	May, 1994-September, 1994	US\$ 5,000	Studied mechanism of <i>in-vitro</i> regeneration of legumes and geranium induced by Thiadiazuron
4	NSERC Canada sponsored research project, Visiting Fellow	Role of proline in TDZ-induced in vitro regeneration of grain legumes; pea, bean, mung bean and pigeon pea	May, 1996-September, 1996	US\$ 6,000/-	Studied mechanism of in-vitro regeneration of legumes and geranium induced by Thiadiazuron
5	DBT, New Delhi, Involved as Co-PI	Transgenic of mung bean for yellow mosaic resistance	1998-2002	Rs. 35,000,00/-	Developed transgenic mung bean with yellow mosaic resistant gene of yellow mosaic virus
6	DST Major Project, Involved as PI	Role of proline and ABA in regulation of ammonia assimilation and accumulation of nitrogenous metabolites in mung bean differing in salt tolerance	1999-2003	Rs. 16,39,792/-	Studied ammonia assimilation in mung bean under the stress
7	CST, UP Project, Involved as PI	Entrapment of biofertilizers in an organic matrix to enhance efficacy for wheat productivity	2011-2013	Rs. 4,08,000/-	Developed organic matrix entrapped efficient biofertilizer for wheat
8	UGC, New Delhi, Involved as PI	Nutrient use efficiency in wheat on application of conventional chemical fertilizers, bio-fertilizers and organic matrix entrapped	2016-2018	Rs. <b>15,50,000/-</b>	Developed organic matrix based fertilizers for drought tolerance

		granular fertilizers at different irrigation levels			
9	DST-PRC Project, DST, New Delhi , Involved as Co-PI	Policy Development on inclusive growth in Agriculture, Water and Health	2015-Continuing	Rs. 5,00,00,000/-	Working on inclusive policies for sustainable agriculture

### **National/International Scientific Exchange/Training, Collaboration**

- Course in Protein Biochemistry organized by Department of Biotechnology Govt. of India, Govt. of India in 1991 at AMU, Aligarh (Three weeks).
- Indian National Science Academy, New Delhi visiting fellowship to work in Department of Biophysics, All India Institute of Medical Sciences, New Delhi in 1992 to work on a research project on enzyme Amine Oxidase (two months).
- UNESCO ST Biotechnology fellowship by UNESCO, Paris to work on a collaborative project on somatic embryogenesis in geranium, peanut and chickpea at University of Guelph, Ont, Canada in 1994(three months).
- NSERC Biotechnology fellowship to visit the same laboratory at University of Guelph, Ont, Canada in 1996 (four month).
- Visited Yunan Agricultural University Kunming, China for a International workshop cum training course on Molecular technique in Disease resistance of Crop Plants in 2002 (15 day).
- Hosted three Senegalese scientists from three different Research Institutes of Thies-Escale, Daker and Kolda of Senegal in own laboratory to develop collaborative research projects on Sesamum indicum in 2002(10 days)
- Visited Universiti Teknologi MARA Cawangan Sarawak, Malaysia for chaired session and delivering lecture in International Conference in 2017.
- Delivered invited talk on “Food and Nutritional Security for Mounting Indian population” in Indo-US Bilateral Workshop on Water-Food-Energy-Climate Nexus: A Perspective Towards a Sustainable Future (WFEC-2018) on 16-21 November, 2018 organized by University of Nebraska Lincoln, USA, Banaras Hindu University, Varanasi and Institute of Environment & Sustainable Development, BHU, Varanasi.
- Delivered present a talk on “Designer ecosystems: a new hope to sustain biosphere in Anthropocen” in the International Conference on Advances in Biological and Environmental Research for Human Welfare (ICABERHW) – 2018 on 16-18 November, 2018 organized by DDU Gorakhpur University, Gorakhpur with collaboration of ICAR-NBFGR, Lucknow and Society of Life Sciences, Satna, M.P.
- Delivered invited lecture on Microbes in Agriculture in National Seminar on Rural Empowerment for New India (Mission-2022) on 10th August, 2018 organized by JNU, New Delhi.

- Chaired Session and delivered talk on Rhizospheric microbes for multipurpose ecosystem services in 4th National Conference on Plant Growth-Promoting Rhizobacteria (PGPR) for Sustainability of Agriculture and Environment from 11-12 May, 2018 organized by Mizoram University, Aizawl, Mizoram, India.
- Chaired Session and delivered talk on Peri-Urban Ecosystem and Climate Change in National Workshop on Urban Climate Resilience: The Context of River Basins: Urban-Peri-urban-Ecosystems, Inclusive Governance and Partnerships on 27-28 November, 2018 organized by National Institute of Disaster Management (NIDM), New Delhi, Bihar State Disaster Management Authority (BSDMA), Bihar and Gorakhpur Environmental Action Group (GEAG), Gorakhpur.
- Delivered invited talk on Designing new agro-ecosystems for enhancing farmer's economy and restoring agro-ecosystems in the 88th Annual Session of NASI and Symposium on Science, Technology and Ecosystem for Sustainable Rural Development on 6-8 December, 2018 organized by National Academy of Sciences (NASI), India in collaboration with MGCGV and DRI Chitrakoot, Satna, M.P. India.
- Delivered invited lecture on Social Responsibility of Scientists in Brain Storming Session on Scientific Social Responsibility (SSR) on 13-14 July, 2018 organized by Pacific university, Udaipur.
- Delivered talk on Microbes in Agro-ecosystems in National Workshop and Discussion to report about and review a pedagogical action research program in Agro-ecology on 6-7 April 2018 organized by University of Calcutta in collaboration with Budhan Chandra Krishi Viswavidyalaya.

### **Invited Lectures and Chairmanships**

#### **Convener/Chairman: Seminar and symposium**

- Chaired session and Invited and delivered Lecture in regional workshop on climate change on June, 16-17, 2011, Organized by Delhi Science Forum, Delhi, TISS Mumbai and BGVS, U.P.
- Chaired technical session on 20th Sept, 2012 in 32nd National Seminar on "Emerging Pollutants and Pathogenes: Challenges and Risk Reductions" held on 20-22 September, 2012 organized by The Academy of Environmental Biology, India at Indian Institute of Toxicology Research (IITR), Lucknow
- Chaired technical session in national conference organized by Department of Botany DDU Gorakhpur University Gorakhpur on 26-28 Nov.2012.
- Chaired technical session in international seminar held at National Academy of Agricultural Sciences New Delhi 26-27 Dec.2012 and organized by Society for Plant research as BTBS-2012
- Chaired technical session in International conference on Chemistry and Materials: Prospects and Perspectives-2012, organized by Department of Applied Chemistry, BBAU during 13-14 Sept.2012
- Chaired session in National Seminar organized by Department of Botany, DDU Gorakhpur University, Gorakhpur on 26-28 Nov., 2012.

- Chaired session in BTBS-2012 at National Academy of Agricultural Sciences, New Delhi 26-27 Dec., 2012.
- Chaired session in Symposia on “Emerging pollutants and pathogens: Challenges and Risk Reduction” organized by The Academy of Environmental Biology at Indian Institute of Toxicology Research Lucknow, 20-21 Sept, 2012.
- Chaired session in International Conference on Chemistry and Materials: Prospects and Perspectives-2012 organized by Department of Applied Chemistry, BBAU University during 13-14 Dec, 2012.
- Chaired session in XXXIV All India Conference organized by Indian Botanical Society and held at Lucknow University on Oct, 10-11, 2012.
- Delivered invited lecture on phytoremediation of degraded environment; emerging issues and challenges on 20<sup>th</sup> Sept, 2012 in 32<sup>nd</sup> National Seminar on "Emerging Pollutants and Pathogenes: Challenges and Risk Reductions" held on 20-22 September, 2012 organized by The Academy of Environmental Biology, India at Indian Institute of Toxicology Research (IITR), Lucknow
- Delivered invited lecture on Phytoremediation of degraded land in national conference organized by Department of Botany DDU Gorakhpur University Gorakhpur on 26-28 Nov. 2012.
- Delivered invited lecture on Organic matrix based slow release fertilizers for crop cultivation in international seminar held at National Academy of agricultural sciences New Delhi 26-27 Dec.2012 and organized by Society for Plant research as BTBS-2012
- Delivered invited lecture on Issues and challenges of climate change in context of Uttar Pradesh in regional workshop on Climate Change on June 16-17, 2012, organized by Delhi Science forum, TISS Mumbai and BGVS UP and held at BBAU Lucknow.
- Attended and chaired session in National Seminar organized by Department of Botany, DDU Gorakhpur University, Gorakhpur on 26-28 Nov., 2012.
- Attended and chaired session in BTBS-2012 at National Academy of Agricultural Sciences, New Delhi 26-27 Dec., 2012.
- Attended in Symposia on “Emerging pollutants and pathogens: Challenges and Risk Reduction” organized by The Academy of Environmental Biology at Indian Institute of Toxicology Research Lucknow, 20-21 Sept, 2012.
- Attended in International Conference on Chemistry and Materials: Prospects and Perspectives-2012 organized by Department of Applied Chemistry, BBAU University during 13-14 Dec, 2012.
- Attended in XXXIV All India Conference organized by Indian Botanical Society and held at Lucknow University on Oct, 10-11, 2012.
- Participated in one day workshop on Placement and Employment Prospects in Indian Patent Offices and Hands on Training for Patenting the Research Work organized by BBAU University during 18th March 2013.
- Participated in National Workshop on Crime Against Women: Legal Issues, organized by BBAU University during 7th March 2013.
- Chaired session and attended in Ist Lucknow Science Congress, held at BBAU, Lucknow during 20-21, April, 2013.



- Delivered two lectures in Refresher course in Life Sciences on 12-9-2014 at DDU Gorakhpur University, Gorakhpur
- Delivered invited lecture in DBT Sponsored Short Term Training Course on Plant transgenic Technologies on October 3, 2014 at Centre for Biotechnology, MD University, Rohtak.
- Participated as a panelist in a Seminar Knowledge Creation, Extraction, Discovery and Delivery by Informatics Publishing Limited, Bangalore on September 16, 2014 at Hotel Golden Tulip, Lucknow.
- Nominated and Participated as external expert in Research Degree Committee of Awadhesh Pratap Singh University, Rewa and MJP Rohelkhand University, Bareilly.
- Judged the exhibits in CBSE Regional Level Science Exhibition on 7-7-2014 at RLB Memorial School, Lucknow.
- Chaired Session in International Symposium on Innovations in Horticulture for Nutritional, Conserving Biodiversity and Poverty Alleviation on October, 16-18, 2014 at BBA University, Lucknow.
- Chaired Session in National Conference on Challenges for Sustainability of Natural Resources and Environment with Emphasis on Aquatic Eco System for Livelihood Security, on October, 10-12, 2014 at G.B. Pant University of Agriculture and Technology, Pant Nagar.
- Delivered lecture on Innovative Teaching Techniques on October, 14, 2014 at College of Biotechnology, Sardar VallabhBhai Patel University of Agricultural and Technology, Meerut.
- Participated as member organizing committee in International Symposium on Biodiversity: Status Utilization and Impact of Challenging Climatic Conditions on October, 30-31, 2014 at BBA University, Lucknow.
- Organized a National conference on Climate Change and Sustainable Development: Emerging issues and mitigation strategies 23 to 24 Nov, 2015.
- Chaired a special Session, Judge Poster Session and delivered a lecture on 5th International Conference on Plants and Environmental Pollution on February, 24-27, 2015 at CSIR, NBRI, Lucknow
- Chaired Session in BRIDGES, 2015, International workshop on Bridging Development Divide for Inclusive Growth to Science, Technology and Innovation on January, 16-17, 2015 at BBA University, Lucknow
- Presented invited lecture in National Conference on Sustainable Water Resources Management: Challenges and Opportunities, on January, 20-21, 2015 at Rani Durgawati University, Jabalpur.
- Delivered invited Talk in 102nd Indian Science Congress and Symposium Science and Technology for Human Development on January, 3-7, 2015 at University of Mumbai, Mumbai.
- Guest Speaker in "National Workshop on Scientific Paper Writing and Effective Communication" at DDU Gorakhpur University, Gorakhpur on 17-18 September, 2016.
- Chief Guest and Key Speaker in "Swatchhta ka manav jivan mein mahatva" at NBFGR, Lucknow on 16 May, 2016.

- Delivered Talk in "Consultation on Strategies for Managing Droughts-Need for Aligning Science and Public Policy" at NISTAD-CSIR, New Delhi, on 3rd June, 2016.
- Chaired Session in National Conference on "Wetland and River Ecosystem" at Lucknow on 2nd May, 2017.
- Chaired Session and Delivered Talk in "104rd Indian Science Congress" S.V. University, Tirupati, on 3-7 January, 2017.
- Chaired and Co-chaired Session in 58th Annual conference of Association of microbiologists of India (AMI) in International symposium on Microbes for sustainable development: Scope & Application (MSDSA-2017) on November, 16-19, 2017 organized by Association of microbiologists of India.
- Chaired Session in International Conference on Emerging trends in integrated pest and disease management for quality food production on July, 25-27, 2017 organized by Universiti Teknologi MARA Cawangan Sarawak, Malaysia.
- Delivered Lecture in "Strategies for Combating Climate Change Impacts on Agriculture" at U.P. Council of Agricultural Research, Lucknow on 21 March, 2017.
- Delivered Lecture in "Breakthrough Science Society" Lucknow, on 16 July, 2017.
- कार्यालय महानिदेशक, दीनदयाल उपाध्याय राज्य ग्राम्य विकास संस्थान में " **Climate Risk Management in Rainfed Eco-System**" में व्याख्यान दिनांक ६ जून , २०१७.
- Participated in Brainstorming on Safe Water and Sanitation, on September, 15-17, 2017 organized by NASI, Allahabad.
- Delivered lecture in National Symposium on Biodiversity and Natural Resources for Sustainable Development (NBRSD-2017) on November, 24-26, 2017 organized by CCS University, Meerut.
- Participated as Judge in Exhibition in Flower show on December, 9th 2017 organized by CSIR-NBRI, Lucknow.
- Delivered lecture in International Conference on Emerging trends in integrated pest and disease management for quality food production on July, 25-27, 2017 organized by Universiti Teknologi MARA Cawangan Sarawak, Malaysia.
- Chaired Session in National Conference on Impact of Climate Change on Indian Agriculture and Plant Productivity on March, 23-24, 2018 organized by JNU, New Delhi, in collaboration with SSCE, PHSS Foundation, SEARCH foundation and GRC India.
- Participated National Seminar and National Science day celebration on Fostering Scientific temper for welfare of society and surroundings on February, 27-28, 2018 organized by BBA University, Lucknow.
- Delivered lecture in National Conference on Plant Science Research in 21st Century: Challenges and Strategies on February, 2nd and 3rd 2018, organized by Saraswati Vidya Mandir Mahila P.G. College, Gorakhpur.
- Deliver lecture in the Department of Industrial Microbiology, DDU Gorakhpur University, Gorakhpur, in 2018.
- Delivered invited talk on "Food and Nutritional Security for Mounting Indian population" in Indo-US Bilateral Workshop on Water-Food-Energy-Climate Nexus: A Perspective Towards a Sustainable Future (WFEC-2018) on 16-21 November, 2018

organized by University of Nebraska Lincoln, USA, Banaras Hindu University, Varanasi and Institute of Environment & Sustainable Development, BHU, Varanasi.

- Delivered present a talk on “Designer ecosystems: a new hope to sustain biosphere in Anthropocen” in the International Conference on Advances in Biological and Environmental Research for Human Welfare (ICABERHW) – 2018 on 16-18 November, 2018 organized by DDU Gorakhpur University, Gorakhpur with collaboration of ICAR-NBFGR, Lucknow and Society of Life Sciences, Satna, M.P.
- Delivered invited lecture on Microbes in Agriculture in National Seminar on Rural Empowerment for New India (Mission-2022) on 10th August, 2018 organized by JNU, New Delhi.
- Chaired Session and delivered talk on Rhizospheric microbes for multipurpose ecosystem services in 4th National Conference on Plant Growth-Promoting Rhizobacteria (PGPR) for Sustainability of Agriculture and Environment from 11-12 May, 2018 organized by Mizoram University, Aizawl, Mizoram, India.
- Chaired Session and delivered talk on Peri-Urban Ecosystem and Climate Change in National Workshop on Urban Climate Resilience: The Context of River Basins: Urban-Peri-urban-Ecosystems, Inclusive Governance and Partnerships on 27-28 November, 2018 organized by National Institute of Disaster Management (NIDM), New Delhi, Bihar State Disaster Management Authority (BSDMA), Bihar and Gorakhpur Environmental Action Group (GEAG), Gorakhpur.
- Delivered invited talk on Designing new agro-ecosystems for enhancing farmer’s economy and restoring agro-ecosystems in the 88th Annual Session of NASI and Symposium on Science, Technology and Ecosystem for Sustainable Rural Development on 6-8 December, 2018 organized by National Academy of Sciences (NASI), India in collaboration with MGCGV and DRI Chitrakoot, Satna, M.P. India.
- Delivered invited lecture on Social Responsibility of Scientists in Brain Storming Session on Scientific Social Responsibility (SSR) on 13-14 July, 2018 organized by Pacific university, Udaipur.
- Delivered talk on Microbes in Agro-ecosystems in National Workshop and Discussion to report about and review a pedagogical action research program in Agro-ecology on 6-7 April 2018 organized by University of Calcutta in collaboration with Budhan Chandra Krishi Viswavidyalaya.

### **Webinar Attended**

- 1) Facebook Live ,BBA University, Lucknow, 15 May,2020,1 PM, Carbon Credit :A future global trade
- 2) Facebook Live , Hindi Deptt.BBAU, □□□□ □□ □□□□□□, 22 May,2020 1,PM
- 3).Zoom based Seminar in Noida International University, Noida, on Nature's turn to reclaim Mother Earth,Lead Speaker,23rd May,2020.3-5 PM.
- 4).Zoom meeting:4th June,2020,11 AM-1 PM, Mainstreaming Biodiversity for Sustainable Food and Environment, Presidential Address, Department of Botany,Ayya Nadar Janaki Ammal College, Sivkasi, Tamilanadu & SSCE ,New Delhi

- 5). Zoom Meeting: 5th June, 11 AM-1 PM, World Environment Day special lecture, Doon University, Dehradun & SSCE, New Delhi, Presidential address by Governor Uttarakhand, Hon'ble Smt Baby Rani Maurya ji.
- 6). Zoom Meeting :5th June 2020, 2-3.30 PM, World Environment Day, Environment , Biodiversity, Deptt of Zoology and Environmental Science,DDU Gorakhpur University, Gorakhpur,Chief Guest and Key note speaker
- 7). Zoom meeting : 5th June ,2020, 4-6 PM, National Seminar on Role of Biodiversity in Global Prosperity, Chief Guest and key note speaker, Department of Botany ,Sacred Heart Degree College, Sitapur,UP
- 8). Google Meet : 6th June ,2020, AKS University, Satna,(MP), 3 day International Seminar on Covid -19 , Challenges and opportunities for Sustainable development,11 AM- 2 PM , Technical Session,1st Eminent Speaker-Thinking on Earth's Environment in post lockdown period,11.15-11.40 AM.
- 9) . Google Meet :6th June,2020, Kurukshetra University, Kurukshetra,UIET, Chief Guest and Speaker,4-6 PM , Sustainable Food Production and Environmental Protection during Covid -19 .
- 10). Organizer: National Institute of Disaster Management,NIDM, Ministry of Home Affairs,Govt.of India,New Delhi, Google Meet: Topic:Covid-19 :A Pandemic of Mistreated Nature, Luminary Speaker,15th June,2020,11 AM to 12.30 PM.
- 11). Organizer-Chemistry Department, Bareilly College, Bareilly,UP,Topic-Covid-19: Global Lockdown vs Global Environment, Eminent Speaker, Zoom Meeting,14th June,2020,11 AM-2 PM.

### Other Recognition

- Invited as Guest of Honour in the Annual Day Function of Pheroze Gandhi P.G. College, Raebareilly 2010
- Invited as Chief Guest in a function organized by National Bureau of Fish Genetic Resources (ICAR), 2009
- Invited as Guest of Honour in the National Seminar organized by Bareilly P.G. College, Bareilly.
- Invited as Special Guest for “Jal Sammelan- Lokadesh 2014”, on 2<sup>nd</sup> March, 2014 organized by Rajendra Singh, ‘JalPurush’
- Key speaker in a workshop Organized by National Institute of Disaster Management, New Delhi (28 Jan., 2014)

### Books Published

1. *Ecological and Practical Applications for Sustainable Agriculture* (2020) Baudh, Kuldeep, Kumar, Sanjeev, **Singh, Rana Pratap** and Korstad, John (Ed.) Springer.
2. *Biotechnological Approaches for Mitigation of Climate Change* (2015) Jaiwal P.K., **Singh, Rana Pratap** and Dhankher O.P. (Ed.) Springer

3. *Plant Membrane and Vacuolar Transporter* (2008).Jaiwal P.K., **Singh, Rana Pratap** and Dhanker O.P. CAB International ([www.cabi.org](http://www.cabi.org)), U.K.
4. *Nitrogen Nutrition and Plant Productivity*( 2006). **Singh, Rana Pratap**, Shankar,N. and Jaiwal, P.K. Studium Press, LLC, Houston, USA.
5. *Molecular Strategies for Improving Nitrogen use efficiency in Plants.* (2006) **Singh, R.,P.**, Shankar,N.and Jaiwal, P.K Studium Press, LLC, Houston, USA.
6. *Plant Genetic Engineering Vol 8: Metabolic engineering and molecular farming.* (2006)Jaiwal, P.K.and **Singh, Rana Pratap** Studium Press, LLC, Houston, USA, 2006.
7. *Nitric Oxide Signaling in Higher Plants* (2005) Jose R. Magalhaes, **Rana Pratap Singh** and Leonidas P.Passos. Studium Press, LLC, Houston, USA
8. *Plant Genetic Engineering Vol 1: Applications and Limitations* (2003) **Singh, Rana Pratap** and Jaiwal, P.K. Sci-Tech. Pub. Co. Houston, USA.
9. *Plant Genetic Engineering Vol 2: Improvement of Food Crops* (2003) Jaiwal, P.K. and **Singh, Rana Pratap** Sci-Tech. Pub. Co. Houston, USA.
10. *Plant Genetic Engineering Vol 3: Improvement of Commercial Plants-1* (2003) **Singh, Rana Pratap** and Jaiwal, P.K. Sci-Tech. Pub. Co. Houston, USA.
11. *Plant Genetic Engineering Vol 4: Improvement of Commercial Plants-II.* (2003) Jaiwal, P.K.and **Singh, Rana Pratap** Sci-Tech. Pub. Co. Houston, USA.
12. *Plant Genetic Engineering Vol 5: Improvement of Vegetables* (2003) **Singh, Rana Pratap** and Jaiwal, P.K. Sci-Tech. Pub. Co. Houston, USA.
13. *Plant Genetic Engineering Vol 6: Improvement of Fruits.* (2003) Jaiwal, P.K. and **Singh, Rana Pratap** Sci-Tech. Pub. Co. Houston, USA.
14. *Focus on Biotechnology10A: Improvement Strategies for Leguminosae Biotechnology.* (2003) Jaiwal, P.K. and **Singh, Rana Pratap** Kluwer Academic publishers, The Netherlands.
15. *Focus on Biotechnology10B: Applied Genetics of Leguminosae Biotechnology.* (2003) Jaiwal, P.K. and **Singh, Rana Pratap** Kluwer Academic publishers, The Netherlands.

16. *Nitrogen Nutrition and Plant Growth* (1999) Srivastava, H.S. and **Singh, Rana Pratap** Science Publishers, Enfield, USA/ Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi (Dual Edition)
17. *Strategies for Improving Salt Tolerance in Higher Plants*. (1997) Jaiwal, P.K., **Singh, Rana Pratap** and Gulati, A Science Publishers, Enfield, USA/ Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi (Dual Edition)
18. *Nitrogen Nutrition in Higher Plants* (1995) Srivastava, H.S. and **Singh, Rana Pratap** Associated Publishing Co. New Delhi

### Books Chapter

1. Kumar, P. and Singh, **Rana Pratap Singh** (2021). Microbial diversity and Multifunctional microbial bio-stimulants for Agricultural Sustainability. *Kausik, A, Kausik, C.P., Attri S.D. (eds) Climate resilience and Environmental sustainability Approaches, Springer Singapore*, pp: 141-184, ISBN: 978-981-16-09015(P) <https://doi.org/10.1007/978-981-16-0902-2>
2. Sachdeva, Swati and **Singh, Rana Pratap**. (2020). *Trichoderma: A multifaceted fungus for sustainable agriculture.*, Kuldeep Baudh et. al. (eds), *Ecological and Practical Applications for Sustainable Agriculture*, Springer Nature, Singapore, ISBN: 978981153371-6, DOI: <https://doi.org/10.1007/978-981-15-3372-3>, pp: 261-304.
3. Ashima Singh, **Rana Pratap Singh**, and Nandkishor More (2020). Challenges to Organic Farming in Restoration of Degraded Land in India. Pratibha Singh et al. (eds.), *Plant Responses to Soil Pollution*, Springer Nature Singapore Pte Ltd. ISBN : 978-981-15-4963-2, DOI: <https://doi.org/10.1007/978-981-15-4964-9>, pp: 27-38.
4. Singh, Kripal, Awasthi, Ashutosh, **Singh, Rana Pratap**, Tewari, S.K. (2020). Current Developments in Biotechnology and Bioengineering., Rpm Katakai et al. (eds.), *Merging the margins for beneficial biofuels: An Indian perspective*, Elsevier, Netherlands DOI <https://doi.org/10.1016/B978-0-444-64309-4.00007-6> pp: 163-178
5. **Singh, Rana Pratap**., Kumar, Sanjeev., Sainger, Manish., Sainger, Poonam A., Barnawal, Deepti, (2017). Eco-friendly Nitrogen Fertilizers for Sustainable Agriculture., Amitava Rakshit et al. (eds.), *Adaptive Soil Management: From Theory to Practices*, Springer, Singapore DOI 10.1007/978-981-10-3638-5 Pp: 227-246.
6. Baudh K., Sainger M., Kumar S., Sainger P.A., Jaiwal P.K. and **Singh, Rana Pratap** (2016). Biotechnological Approaches to Mitigate Adverse Effects of Extreme Climatic Factor on Plant Productivity, in P.K. Jaiwal et al. (eds.), *Genetic Manipulation in Plants for Mitigation of Climate Change*, Springer, DOI 10.1007/978-81-322-2662-8\_9 in press.



7. **Singh, Rana Pratap**, Bauddh K., Sainger M., Sainger, P.A., Singh, J. and Jaiwal P.K. (2011). Nitrogen use efficiency in higher plants under drought, high temperature, salinity and heavy metal contaminations. Jain, V. and Kumar, P.A. (Eds). 2010. Nitrogen Use Efficiency in Higher Plants. New India Publishing Agency (India) Pvt. Ltd. Pp: 99-123.
8. **Singh, Rana Pratap**, Sainger M., Bauddh K., Senger R.S. and Jaiwal P.K. (2010). Sustained nutrient supply reduced nutrient loss and high plant productivity with slow release fertilizers. Senger R.S. and Sharma A.K. (Eds). 2010. Stable Food Production and Sustainable Agriculture. Studium Press (India) Pvt. Ltd. Pp: 62-79.
9. **Singh, Rana Pratap**, Sainger M., Singh D.P. & Jaiwal P.K. (2008). Nitrate and ammonium transporters in plants. *In: Plant Membrane and Vacuolar Transporters* (Eds Jaiwal P. K., **Singh, Rana Pratap** & Dhankhad O.P.) CAB International pp: 83-103.
10. Dahiya S. Choudhary, D. Jaiwal R., Dhankher, O.P., **Singh, Rana Pratap** and Jaiwal, P.K. (2008). Elemental biofortification of crop plants. *In: Plant Membrane and Vacuolar Transporters* (Eds Jaiwal P. K., **Singh, Rana Pratap** & Dhankhad O.P.) CAB International pp: 345-371.
11. **Singh, Rana Pratap**, Sainger M. & Sharma V. (2007). Genetic engineering of plants for environmental cleanup In: Biotechnology in Plant Improvement. (Ed Trivedi P.C.) Pointer publishers Jaipur, pp 316-337.
12. **Singh. R.P** , Sharma, V and Jaiwal, P.K. (2007) Genetic engineering and biotechnology: book on plant physiology and biochemistry by National Institute of Science Communication and Information Resources (NISCAIR, CSIR), New Delhi, [www.niscair.res.in](http://www.niscair.res.in)
13. **Singh, Rana Pratap**, Dhanania G., Sharma A. & Jaiwal P.K. (2006). Biotechnological Approach to Improve Phytoremediation Efficiency for Environment Contaminants. *In: Environmental Bioremediation Technologies* (Eds Singh S.N. & Tripathi R.D. ) Springer 223-258
14. Jaiwal, P.K. and **Singh, Rana Pratap** (2006) Genetic manipulations of nitrogen assimilation to improve nitrogen use efficiency and yield of plants. In Biotechnological Approaches Improve Nitrogen Use Efficiency in Plants (Eds. **Singh, Rana Pratap** . and Jaiwal, P.K. ) Studium Press, LLC, Houston, USA Pp 257-284
15. Sharmila P., **Singh, Rana Pratap** and Pardha Sardhi, P. (2006) Nitrogen in interaction with sulfur metabolism in plants. In. Biotechnological Approaches

Improve Nitrogen Use Efficiency in Plants (Eds. **Singh, Rana Pratap** and Jaiwal, P.K. ) Studuim Press, LLC, Houston,USA.Pp 241-256

16. **Singh, Rana Pratap**, Usha, Shankdhar, N. and Jaiwal, P.K. (2006) Nitrogen utilization in plants under salinity stress. In: *Nitrogen Nutrition and Plant Productivity*. (Eds. **Singh, Rana Pratap**, Shankar N. and Jaiwal, P.K.) Studium Press, LLC, Houston, USA. Pp 203-276.
17. Srivastava H.S., Shankar N., Yamaya T. and **Singh, Rana Pratap** (2006). Glutamatesynthese, ammonia assimilation and plant productivity. (Eds. **Singh, Rana Pratap** . and Jaiwal, P.K. ) Studuim Press, LLC, Houston, USA. Pp 135-166.
18. **Singh, Rana Pratap**, Dahiya, S., Usha, and Jaiwal, P.K. (2004) Slow release fertilizers for sustained nitrogen supply and high plant productivity. In: *Nitrogen Nutrition and Plant Productivity*. (Eds. **Singh, Rana Pratap**, Shankar N. and Jaiwal, P.K.). Studium Press, LLC, Houston, USA. Pp 329-349.
19. **Singh, Rana Pratap**, Usha, Rizvi, S.M.H., Sonia and Jaiwal, P.K. (2003) Biotechnological strategies for enhancing abiotic stress tolerance in legumes. In: *Focus on Biotechnology10A: Improvement Strategies for Leguminosae Biotechnology*. Kluwer Academic publishers, The Netherlands. pp223-243.
20. Sonia, **Singh, Rana Pratap**, Sharma, K.K, and Jaiwal, P.K (2003) *In vitro* regeneration and transformation of chickpea In: *Focus on Biotechnology10B: Applied Genetics of Leguminosae Biotechnology*. Kluwer Academic publishers, The Netherlands. pp 69-87
21. Sahoo L., Sugla T., Baloda A., **Singh, Rana Pratap**, and Jaiwal, P.K (2003) Engineering abiotic stress tolerance in crop plants. In: *Plant Genetic Engineering Vol.1 Applications and Limitations* (Singh RP and Jaiwal, PK eds) Sci-Tech Publishers, Houston, USA. pp 123-146.
22. Sahoo L., Singh N.D., Sugla T., **Singh, Rana Pratap** and Jaiwal P.K. (2003) Genetic transformation of legumes In: *Plant Genetic Engineering Vol.2 Improvement of food crops* (Jaiwal, PK and Singh RP eds) Sci-Tech Publishers, Houston, USA. pp267-326.
23. **Singh, Rana Pratap**, Murch, S.J. and Saxena, P.K. (1999). The role of nitrogen in plant morphogenesis *in vitro*. In *Nitrogen Nutrition and Plant Growth* (Srivastava H.S. and **Singh, Rana Pratap** Eds.) Science Publishers Enfield USA/Oxford & IBH Publication Co. Pvt. Ltd. New Delhi pp 205-229.

24. Mishra, S.N., Jaiwal,P.K., **Singh, Rana Pratap**,Srivastava H.S. (1999). Rhizobium legume association. In: *Nitrogen Nutrition and Plant Growth* (Srivastava H.S. and **Singh, Rana Pratap** Eds.)Science Publishers Enfield USA/Oxford &IBH Publication Co. Pvt. Ltd. New Delhi. Pp. 45-102.
25. **Singh, Rana Pratap**,Chaudhary A., Gulati,A, Dahiya H.C., Jaiwal,P.K.and Sengar,R.S. (1997).Response of plants to salinity in interaction with other abiotic and biotic factors. In *Strategies for Improving Salt Tolerance in Higher Plants* (Eds. Jaiwal, P.K., **Singh, Rana Pratap** and Gulati,A.) Science Publishers Enfield USA/Oxford &IBH Publication Co. Pvt. Ltd. New Delhi pp 25-41.
26. Jaiwal,P.K. **Singh, Rana Pratap** and Gulati,A(1997). Perception of salt signals by higher plants. In *Strategies for Improving Salt Tolerance in Higher Plants* (Eds. Jaiwal,P.K., **Singh, Rana Pratap** and Gulati,A.) Science Publishers Enfield USA/Oxford &IBH Publication Co. Pvt. Ltd. New Delhi pp 41-54.
27. Jaiwal,P.K. and **Singh, Rana Pratap**(1995). Regulation of nitrogen assimilation by plant Growth hormones. In *Nitrogen Nutrition in Higher Plants* (Eds. Srivastava H.S.and **Singh, Rana Pratap**) Associated Publishing Company, New Delhi, pp401-416.
28. **Singh, Rana Pratap**(1995). Ammonia Assimilation. In *Nitrogen Nutrition in Higher Plants* (Eds. Srivastava H.S.and **Singh, Rana Pratap**) Associated Publishing Company, New Delhi, pp189-203.
29. Singh J. **Singh, Rana Pratap**, Sinha O.K. and Aganihotri, V.P.(1994). Biochemical aspects of diseaseresistance with special refrance to red rot disease of sugarcane. In *Current Trends In Sugarcane Pathology* (Prof. K.S.Bhargava Festschrift) (Eds. Rao,G.P., GillaspieJr. A.G., Upadhyaya, P.P., Bergamin, A., Aganihotri, V.P. and Chen,C.T.),Int.Books and Period.Sup.Serv.Delhi,PP.259-275.

### Published Papers in Journals

#### Review Articles

1. Kripal Singh, **Rana Pratap Singh** and Shri Krishna Tewari (2021). Ecosystem restoration: challenges and opportunities for India. *Restoration Ecology*, doi: 10.1111/rec.13341.
2. Kumar, Pawan and **Singh, Rana Pratap** (2020). Potentials and limitations of multifunctional microbial stimulants in sustainable agriculture. **RASSA Journal of Science for Society**, 2(1), 21-26.

3. Agrawal, Aditya Vikram and **Singh, Rana Pratap (2020)**. Sustainability bottlenecks in technology-led solutions for arsenic mitigation programs in Indian subcontinent. *Environews, January, 2020*.
4. Sachdev, Swati and **Singh, Rana Pratap (2017)**, Sustainable management of soil borne pathogens of tomato. *International Journal of Science, Technology and Society*, 3(2), 36-40.
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### Publication in Popular Magazine and News Papers

S. No.	Date	Title	Name of Magazine/Newspap
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1.	01-10-2019	जलवायु संकट के दौर में खाद्य सुरक्षा और पोषण के उभरते संकट	गांव
2.	29-01-2018	□□□□ □□□□ □□ □□ □□□□□□□□ □□□□□ □□□□□	□□□□□□□□□□
3.	18-01-2017	□□□□□□□□ □□ □□□□ □□□□ □□ □□□□ □□□□	□□□□□□ □□□□□□
4.	01-10-2014	□□□□□ □□□□□□□ □□□□ -□□□□ □□ □□□□□□	□□□□□□□□□□□ □□□□□
5.	01-07-2018	□□□□□ □□□ □□ □□ □□□□□□□ □□ □□□□□□□□	□□□□□ □□□□□□□□□□ □□□□□□□□
6.	01-10-2017	A call for the Nature	□□□□□ □□□□□□□□□□ □□□□□□□□
7.	01-01-2017	□□□□□ □□□□ □□□□□□□□□□ □□ □□□□□□□□□□	□□□□□ □□□□□□□□□□ □□□□□□□□
8.	01-01-2015	□□ □□□□ □□ □□ □□ □□□□	□□□□□ □□□□□□□□□□ □□□□□□□□

## Research Guidance

- Mentored Eight Post Doctoral Fellows.

S. No.	Student Name and Year	Title of Work	Type of Fellowship	University where work was carried out
1.	Dr. Vimal Chandra Pandey 2009-2012	An integrated organic/biotechnological approach using flyash for remediation of solic land and biomass production	UGC-Dr. D. S. Kothari Post-Doctoral Fellowship	BBA University, Lucknow
2.	Dr. Kripal Singh 2012-2013	Understanding Carbon Nitrogen Dynamics and Microbial Activities in Sodic Soils	UGC-Dr DS Kothari Post-Doctoral Fellow	BBA University, Lucknow
3.	Dr. Kamini Narayan 2012-2017	Sustainable Utilization of Distillery Effluent for Wasteland Reclamation and Biomass Production	UGC Post Doctorate Fellowship for Women Candidates	BBA University, Lucknow
4.	Dr. Ashima Singh 2014-2017	Climate mitigation and sustainable agriculture as carbon sequestration under organic farming in sodic soil: An Indian perspective.	UGC-Dr DS Kothari Post-Doctoral Fellow	BBA University, Lucknow
5.	Dr. Ashutosh Awasthi 2018-2020	Disentangling the ecological dynamics of biotic communities under anthropogenic influence	Dr. D.S. Kothari Postdoctoral Fellowship	BBA University, Lucknow
6.	Dr. Dipti Barnwal 2016-2018	Plant beneficial rhizobacteria mediated improvement in plant health and remodelling rhizospheric microbiome of the rice crop during pathogenic attack	National Post Doctorate fellowship (NPDF); SERB, DST	BBA University, Lucknow
7.	Dr. Ashish Kumar Mishra	Impact of Climate on Species Composition and Forest Carbon Allocation	National Post Doctorate fellowship	BBA University,

	2016-2018	along Altitudinal Gradients in High Mountain Forests	(NPDF); SERB, DST	Lucknow
8.	Dr. Aditya Vikram Aggrawal 2019-2020	Evaluation of Arsenic Management in water supply systems in some villages of Uttar Pradesh	DST, New Delhi	BBA University, Lucknow

- **Thirty Four Ph.D. Thesis supervised and awarded and eight under-supervisions.**

S. No.	Student Name and Year	Title of Work/Thesis	University where work was carried out
1.	Dr. Roli Misra (2022)	Developing a novel crop system with microbial inoculants for high income and multiple ecosystem services	BBA University, Lucknow
2.	Dr. Pawan Kumar Maddhesia (2022)	Aromatic grasses based engineered ecosystem for restoration of marginal lands and enhanced carbon sequestration.	BBA University, Lucknow
3.	Dr. N.K.S. More (2022)	Carbon dynamics of different soil types in peri-urban Lucknow, India	BBA University, Lucknow
4.	Dr. Mahesh Kumar (2019)	Efficacy of trichoderma spp. and plant growth promoting rhizobacteria (PGPR) as biofertilizer for wheat ( <i>Triticum aestivum</i> L.) cultivation	BBA University, Lucknow
5.	Dr. Swati Sachdev (2019)	Enhancing efficacy of biocontrol of Fusarium wilt and Early blight of Tomato ( <i>Lycopersicon esculentum</i> Mill.) by <i>Trichoderma</i> and <i>Pseudomonas</i>	BBA University, Lucknow
6.	Dr. Mohd. Baqir (2018)	Carbon Sequestration and Fuel wood Assessment of Kahinure Plantation Forest in Rural Area of District Mau, Uttar Pradesh, India	BBA University, Lucknow
7.	Dr. Rose Pratima Minj (2016)	Enhancing the Efficacy of Azotobacter chroococcum and Bacillus subtilis by Dose Optimization and Immobilization within Organic Carrier for High Wheat ( <i>Triticum aestivum</i> L.) Productivity	BBA University, Lucknow
8.	Dr. Abdul Barey Shah (2015)	Phytoremediation Potential of Some Macrophytes for the Removal of Inorganic Pollutants from Municipal Water Sources	BBA University, Lucknow
9.	Dr. Vishalakcchi Ashok (2014)	Studies on sustainable rice ( <i>Oryza sativa</i> L.) cultivation with eco-friendly granular slow release fertilizers	BBA University, Lucknow
10.	Dr. Amit Kumar (2014)	Responses of Amino acids and Thiol metabolism in rice ( <i>Oryza sativa</i> L.) plant during Arsenic stresses and selenium supplementation	BBA University, Lucknow
11.	Dr. Sanjeev Kumar (2014)	Studies on organic matrix granular slow release fertilizers on sustainable wheat ( <i>Triticum aestivum</i> L.) cultivation	BBA University, Lucknow
12.	Dr. Preeti Tripathi (2013)	Response of Thiol Metabolism and Antioxidive defence system in Rice ( <i>Oryza sativa</i> L.) plant under Aresenic stress	BBA University, Lucknow
13.	Dr. Uma shanker	Carbon sequestration in natural sal ( <i>Shorea</i>	BBA University,

	Singh (2013)	robusta) forest of south kheri forest division, Lakhimpur	Lucknow
14.	Dr. Ritu Singh (2013)	Remediation of soil contaminated with hexavalent chromium and gamma- hexachlorocyclohexane (Lindane) using zero- valent iron nanoparticles	BBA University, Lucknow
15.	Dr. Kuldeep Baudh (2013)	A comparative study on tolerance mechanism and phytoremediation potential of Indian mustard ( <i>Brassica juncea</i> L.) and castor ( <i>Ricinus communis</i> L.) in nickel and cadmium contaminated soil	BBA University, Lucknow
16.	Dr. Surendra Vikram Ghavri (2011)	Studies on phytoremediation of wasteland contaminated with industrial effluent of Sandila Industrial area, District, Hardoi, Uttar Pradesh (India).	BBA University, Lucknow
17.	Dr. Pankaj Sharma (2011)	Effects of nutrient, Water and Tillage management on microbial activities and plant growth promoting rhizobacteria ( <i>Pseudomonas</i> , <i>Bacillus</i> , <i>Azotobacter</i> ) in soil under rice-wheat cropping system	BBA University, Lucknow
18.	Dr. Satish Rawat (2011)	Management of nitrate pollution in water by phytoremediation	BBA University, Lucknow
19.	Dr. Shailendra Singh (2011)	Nesting Ecology and conservation of endangered Batagur (Kachuga) species in National Chambal (river), Sanctuary, Uttar Pradesh	BBA University, Lucknow
20.	Dr. Shobha Rawat (2010)	Studies on medicinally important Lichens on their conservation in some forest sites of Chamoli District, Uttarakhand India.	BBA University, Lucknow
21.	Dr. Manoj Kumar (2008)	Development and performance evaluation of organic slow (controlled) release fertilizers on wheat and rice under salinity stress	BBA University, Lucknow
22.	Dr. Vinod Kumar (2008)	Studies on eco-friendly organic matrix based slow release fertilizers for improved nutrient utilization and high yield in Indian mustard ( <i>Brassica juncea</i> L.) under the salinity stress.	BBA University, Lucknow
23.	Dr. Geeta Dhania (2007)	Biotechnological Approach for improving Abiotic Stress Tolerance in <i>Brassica Juncea</i>	M.D. University, Rohtak
24.	Dr. Kavita Jain (2007)	Biotechnological Approach for improving Abiotic Stress Tolerance in Chickpea	M.D. University, Rohtak
25.	Dr. Saroj Dahiya (2007)	Development and performance evaluation of slow release fertilizers for rice and mung bean	M.D. University, Rohtak
26.	Dr. Neelam Arya (2007)	Development of sulphure rich slow release fertilizers for improved nutrient utilization and high yield of crop plants	M.D. University, Rohtak
27.	Dr. Amita Gupta (2005)	Proline Metabolism and Antioxidative Defense System in Mung bean Under Salt Stress.	M.D. University, Rohtak
28.	Dr. Usha Dhull (2004)	Ammonia Assimilation in Relation to Proline Accumulation in Salt Stressed Mungbean ( <i>Vigna radiata</i> L. Wilczek)	M.D. University, Rohtak
29.	Dr. Preeti Chaudhary (2002)	Developing low cost slow release fertilizer as eco-friendly efficient plant Nutrition	M.D. University, Rohtak
30.	Dr. Sonia (2002)	Development of transgenic mungbean seeds resistant to storage pest bruchid beetles.	M.D. University, Rohtak

31.	Dr. S.H.M. Rizvi (2001)	Molecular and Biochemical basis of in vitro somatic embryogenesis in Chick pea ( <i>Cicer arietinum</i> L.)	M.D. University, Rohtak
32.	Dr. Asha Sharma (2000)	Phytoremediation of heavy metal contaminated soil using potential plant species for metal removal.	M.D. University, Rohtak
33.	Dr. Sridevi Prasad (1997)	Impact of heavy metal of industrial effluents on blue green algae and fish/zooplankton in a paddy field.	M.D. University, Rohtak
34.	Dr. Anil Chaudhary (1997)	Role and regulation of Cu amine oxidase in heavy metal stress of <i>Vigna radiata</i>	M.D. University, Rohtak
35.	Dr. Sushila Dabas (1994)	To study the effect of lead on efficiency of nitrogen fixation and nitrogen assimilation in <i>Vigna radiata</i> .	M.D. University, Rohtak
<b>M. Phil Degree</b>			
1.	Renu Kela	Differential response of growth and nitrate assimilation in roots and leaves of <i>Vigna radiata</i> to lead in presence of some nutritional factors.	M.D. University, Rohtak
2.	Nisha Bharti	Nitrate assimilation and biomass and accumulation in <i>Seasamum indicum</i> seedlings under non-saline and salt affected complex heavy metal environment.	M.D. University, Rohtak
3.	Gulshan Taneja	Growth, photosynthetic pigments and nitrate assimilation in <i>Seasamum indicum</i> in a lead enriched environment	M.D. University, Rohtak

All the information given herein is true to the best of my knowledge and belief.

**(Rana Pratap Singh)**