

CURRICULUM VITAE

NAME Dr. Richa Raghuwanshi
DESIGNATION Associate Professor
DEPARTMENT Department of Botany, MMV,
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ACADEMIC QUALIFICATION

- Ph. D in Botany (Yr. 2001) from Department of Botany, Centre for advanced studies, Banaras Hindu University
- Post graduate in Botany, with specialization in *Biotechnology and microbial genetics* (Yr.1997, I Division) from Department of Botany, Centre for advanced studies, Banaras Hindu University
- Graduate in Botany (Yr.1995, I Division) from Women's College, Banaras Hindu University

EXPERIENCE IN UNIVERSITY ADMINISTRATION

- Worked as Programme Officer, National Service Scheme (NSS), BHU from 2007 to 2012.
- Worked as member of Residential Accommodation Allotment Committee (RAAC) of BHU from 11 August, 2009 to May 2011.
- Worked as Purchase Secretary, MMV, BHU from 2014 till 2016.
- Working as Warden of Jyoti Kung hostel, MMV from 1st October 2012 till date.

TEACHING EXPERIENCE

i) PG Level:

- Involved in teaching M. Sc **Applied Microbiology** at Department of Botany, BHU since 2005 till date.
- Involved in teaching M. Sc **Bioinformatics** at MMV, BHU since 2005 till date.

ii) UG level:

- Involved in teaching B. Sc **Industrial Microbiology** at Department of Botany, BHU.
- Involved in teaching B. Sc **Environmental Sc** at MMV, BHU.
- Involved in teaching B. Sc **Botany** at Department of Botany, MMV, BHU since 2005 till date.

Ph. D GUIDANCE

- Genetic and molecular study on horticultural traits in *Cucumis melo*. L. (Smita Singh 2012).
- Identification and characterization of diazotrophic bacterial isolates and their effect on plant growth and yield of wheat. (Ashok Kumar 2014)
- Epidemiology and management of anthracnose of Chilly. (Amrita Saxena 2015).
- Race profiling of *Xanthomonas campestris* pv. *campestris* causing black rot disease in crucifers. (Priyanka Singh Rathour 2016).
- Effect of growth promoting microorganisms on selected medicinal plants under water stress. (Shilpam Sinha 2016).

MEMBER OF EDITORIAL BOARD:

- Academic Editor in Journal of Biology and Nature. International Knowledge Press. ISSN: 2395-5376 (Print), 2395-5384 (Online).
- Associate Editor in Virology and immunology Journal. MedWin Publishers.
- Member of Editorail Board in Molecular and physiological aspects of toxicology (Edited by Kavita Shah). Tara Publishers. International Book distributing company Co. Lucknow. ISBN: 81-85403-09-2.

BOOKS EDITED:

- Microbial diversity and biotechnology in food security. 2014. (Edited by Prof RN Kharwar, Prof. RS Upadhyay, Prof. NK Dubey and Dr. Richa Raghuwanshi) Springer, New York. ISBN: 978- 81-322-1801-5, ISBN: 978-81-322-1801-2 (eBook). <http://dx.doi.org/10.1007/978-81-322-1801-2>

PROJECTS As Co-PI:

- Survey of endophytic fungi associated with some aromatic plants of North Eastern region and assessment of their effect on chemical profile and biological activity as antimicrobial, aflatoxin inhibitors and antioxidant under DBT's Twinning Programme of Rs 59.35 lakhs from 2014-2016.
- Design of diagnostic tools to monitor certain diseases *via* molecular imprinting mimicking biorecognition, sanctioned by DST-SERB of RS 43,87,810 from 2017-2020.

GUEST LECTURE DELIVERD/RESOURCE PERSON

- Delivered invited talk on 'Biofertilizers' on 25th February 2011 during Entrepreneurship Skill Development Programme in Biotechnology organized by Indian Institute of Technology, BHU from 20-01-11 to 7-03-11.

- Worked as a resource person in the hands on training programme on “Techniques in biology” organized by the Department of Botany, MMV, BHU from 24-26th March 2011 under DBT Star College scheme.
- Worked as a resource person in the hands on training programme on “Techniques in biology” organized by the Department of Botany, MMV, BHU from 22th-24th, March, 2012 under DBT Star College scheme.
- Worked as a resource person in the hands on training programme on “Techniques in biology” organized by the Department of Botany, MMV, BHU from, 10th -12th April March, 2013 under DBT Star College scheme.
- Worked as a resource person in the hands on training programme on “Techniques in biology” organized by the Department of Botany, MMV, BHU from, 12th -14th April 2014 under DBT Star College scheme.
- Worked as a resource person in the hands on training programme on “Techniques in biology” organized by the Department of Botany, MMV, BHU from, 16th -21th March 2015 under DBT Star College scheme.
- Delivered invited talk on ‘Genetic recombination in bacteria’ on 2nd April 2016 under UGC – Remedial Coaching Programme at Udai Pratap College, Varanasi.

RADIO TALK DELIVERED

- Delivered Radio talk at Gyan vani, BHU on the topic “Plant and water relation” on August 2010.
- Delivered Radio talk on ‘Career in Botany’ on 11th September 2012 at Gyan-vani. Varanasi.
- Delivered Radio talk on ‘Plant and water relation’ on 25th December 2013 at Gyan-vani. Varanasi
- Delivered Radio talk on ‘Career in Botany’ on 18th March 2014 at Gyan-vani. Varanasi

ORGANISATION OF SEMINARS/CONFERENCES

- Organized a national symposium on “Bioinformatics: Approaches and applications in biosciences” as Joint Organizing Secretary held on 5-6 March, 2009 at Mahila Mahavidyalaya, Banaras Hindu University, Varanasi, UP, India.
- Organized an international conference on “Mycology and plant pathology: Biotechnological approaches” (ICMPB-2012) as Joint Organizing Secretary and Treasurer held on 26-28 February, 2012 at Department of Botany, Banaras Hindu University, Varanasi, UP, India.
- Organizing a National Symposium-cum-Mid Eastern Zonal Meeting on “Impact of climate change on plant-microbe interaction (ICCPMI-2015)” as Joint Organizing Secretary and Treasurer held on 18-19 December, 2015 at Department of Botany, Banaras Hindu University, Varanasi, UP, India.
- Organizing a national conference –cum- zonal meeting of Mycological Society of India on “Emerging trends in fungal biology and plant protection (ETFPP-2016)” as Organizing

Secretary and Treasurer held on 17-19 February, 2016 at Department of Botany, Banaras Hindu University, Varanasi, UP, India.

AWARDS

- Awarded first prize in writing article in hindi entitled “Sada bahar harit kranti ke path par eak aur pugh - Gehoon paudh praroop. (2002) SS Singh, GP Singh, JB Sharma, Nanak Chand, DN Sharma, JB Singh and R Raghuwanshi in *Prasardoot* published from IARI, New Delhi, India.
- Awarded second prize in poster presentation entitled” Bioinformatic approach in revealing plant-microbe symbiotic association” at the Mid-eastern zonal symposium on sustainable crop protection in changing agricultural scenario” organized by Indian Phytopathological Society at Department of Plant Pathology, C.S.A University of Agriculture and Technology, Kanpur from 18-19 November, 2011.
- Awarded second prize in poster presentation entitled” Genetic variability of *Xanthomonas campestris* pv. *campestris* causing black rot disease in crucifers in North India” at the National Symposium-cum-Mid Eastern Zonal Meeting on “Impact of climate change on plant-microbe interaction (ICCPMI-2015)” held on 18-19 December, 2015 at Department of Botany, Banaras Hindu University, Varanasi, UP, India.
- Priyanka Singh Rathaur, Dinesh Singh and Richa Raghuwanshi. (2016). Pathogenic variations in races of *Xanthomonas campestris* pv. *campestris* causing black rot disease of crucifers has been awarded Third prize for the Poster Presentation in the 6th International Conference on “Plant, Pathogens and People”, organized by Indian Phytopathological Society from Feb. 23-27, 2016, at NASC Complex, New Delhi, India.
- Certificate of appreciation was awarded to Jyoti Kunj Hostle, MMV, BHU in 2015-16 while working as warden.

MEMBRSHIP OF PROFESSIONAL SOCIETY

- Life member of The Biotech Research Society (BRSI), Trivandrum, India.
- Life member of Mycological Society of India, India

PUBLICATIONS

I. INTERNATIONAL

1. Akhilesh Kumar, Richa Raghuwanshi and RS Upadhyay. (2003). Vesicular arbuscular mycorrhizal association in naturally revegetated coalmine spoil. *Tropical Ecology*. vol. 44 (2): 251-254. ISSN: 0564-3295. Impact Factor-1.169.
2. Richa Raghuwanshi and RS Upadhyay. (2004). Performance of vesicular-arbuscular mycorrhizae in saline-alkali soil in relation to various amendments. *World Journal of Microbiology and Biotechnology*. vol. 20 (1): 1-5. ISSN: 0959-3993. Impact Factor-1.262.

3. Akhilesh Kumar, Richa Raghuwanshi and RS Upadhyay. (2010). Arbuscular mycorrhizal technology in reclamation and revegetation of coal mine spoils under various revegetation models. *Engineering*. 2: 683-689. ISSN Print: 1947-3931 ISSN Online: 1947-394X.
4. BR Maurya, Ashok Kumar, Richa Raghuwanhsi and Vimal Singh. (2012). Diversity of *Azotobacter* and *Azospirillum* in rhizosphere of different crop rotations in Eastern Uttar Pradesh of India. *Research Journal of microbiology*. Vol-7. Issue-2, 123-130. ISSN: 1816-4935.
5. D Singh, BT Raghavendra, P Singh Rathaur, H Singh, Raghuwanshi R and RP Singh (2014). Detection of black rot disease causing pathogen *Xanthomonas campestris* pv. *campestris* by bio-PCR from seed and plant parts of cole crops. *Seed science and Technology*. Vol. 42 (1), 36-46. ISSN 0251-0952. Impact Factor: 0.631.
6. Saxena A, Raghuwanshi R and Singh H.B. (2014) Molecular, phenotypic and pathogenic variability in *Colletotrichum* isolates of subtropical region in north-eastern India, causing fruit rot of chillies. *Journal of Applied Microbiology*. 117:1422-1434. ISSN: 1365-2672. Impact Factor: 2.386.
7. Ashok Kumar, BR Maurya, and Richa Raghuwanshi (2014). Isolation and Characterization of PGPR and their effect on growth, yield and Nutrient content in wheat (*Triticum aestivum* L.) *Biocatalysis and Agricultural Biotechnology*. (3) 121-128. Elsevier. ISSN: 1878-8181. Impact Factor: 0.9.
8. Saxena A, Raghuwanshi R and Singh H.B. (2015). *Trichoderma* species mediated differential tolerance against biotic stress of phytopathogens in *Cicer arietinum* L." *Journal of Basic Microbiology*. (55), 195-206. On-line-ISSN: 1521-4028. Impact Factor: 1.822.
9. A Kumar, I Bahadur, BR Maurya, R Raghuwanshi, VS Meena, DK Singh and J Dixit. (2015). Does a plant growth promoting rhizobacteria enhance agricultural sustainability? *Journal of Pure and Applied Microbiology*. Vol 9 (1): 715-724. ISSN 0973-7510, Impact Factor -0.073.
10. A Kumar, BR Maurya, R Raghuwanshi. (2015). Characterization of bacterial strains and their impact on plant growth promotion and yield of wheat and microbial population of soil. *African journal of Agricultural Research*. Vol. 10 (12). 1367-1375. ISSN 1991-637X.
11. Dinesh Singh, Priyanka Singh Rathaur, Ashwariya Singh and Richa Raghuwanshi. (2015). Genetic diversity of *Xanthomonas campestris* pv. *campestris* isolated from *Brassica* crops using RAPD and Rep-PCR. *Indian Journal of Agricultural Sciences* 85(6): 792-6. ISSN: 0019-5022. Impact Factor: 0.18.
12. Bihari Ram Maurya, Ashok Kumar, Richa Raghuwanshi, Indra Bahadur, Vijay Singh, Meena (2015). Effect of phosphate solubilizing isolates on growth, yield and

phosphate acquisition by rice and wheat crops. *African Journal of Microbiology Research*. Vol-9, Impact Factor: 0.2, ISSN: 1996-0808.

13. Priyanka Singh Rathaur, Dinesh Singh, Richa Raghuwanshi and Yadava DK (2015). Pathogenic and Genetic characterization of *Xanthomonas campestris* pv. *campestris* races based on rep-PCR and multilocus sequence analysis. *Journal of Plant Pathology and Microbiology* 6 (10), 317. ISSN: 2157-7471. Impact Factor: 1.62.
14. Saxena A, Raghuwanshi R and Singh H.B. (2016). Elevation of defense network in chilli against *Colletotrichum capsici* by phyllospheric *Trichoderma* strain. *Journal of Plant Growth Regulation*. 35: 377–389. ISSN: 0721-7595 (Print) 1435-8107 (Online). Impact Factor: 2.333.
15. Shilpam Sinha and Richa Raghuwanshi. (2016). Synergistic effects of Arbuscular Mycorrhizal Fungi and mycorrhizal helper bacteria on physiological mechanism to tolerate drought in *Eclipta prostrate* (L.) L. *Journal of pure and applied microbiology*. vol 10 (2), Page No. 1117-1129. ISSN 0973-7510. Impact factor-0.073.
16. Amrita Saxena, Richa Raghuwanshi, Vijai Kumar Gupta, Harikesh Bahadur Singh. (2016). Chilli anthracnose: The epidemiology and management. *Frontiers in Microbiology*. vol-7, 1527. ISSN 1664-302X. Impact factor-4.53.
17. Priyanka Singh Rathaur, Dinesh Singh and Richa Raghuwanshi (2016). Standardization of Indian cultivars of *Brassica* spp. for characterization of *Xanthomonas campestris* pv. *campestris* races causing black rot disease of crucifer crop. *The Indian Journal of Agricultural Sciences*. 86 (12): 1547–52. ISSN: 0019-5022. Impact Factor: 0.18.
18. Parismita Sarma; Manoj Kumar; M S Dkhar; Highland Kayang; Ruth Laldinthar; Nawal Kishore Dubey; Richa Raghuwanshi; (2016). Endophytic fungi associated with the medicinally important aromatic plant *Artemisia nilagirica* (Clarke) Pamp. and antimicrobial activity of selected endophytic fungi against *Rhizoctonia solani*. *Asian Journal of Biological and Life Sciences*. Vol.5 (2): 154-160. ISSN: 2278-747X (Print); ISSN: 2278-5957 (On-line).
19. A Kumar, BR Maurya, R Raghuwanshi, VS Meena and M Tofazzal Islam. (2017). Co-inoculation with *Enterobacter* and rhizobacteria on yield and nutrient uptake by wheat (*Triticum aestivum* L.) in the alluvial soil under Indo-Gangetic Plain of India. *Journal of Plant Growth Regulation*. vol 36 (3): 608–617. ISSN: 0721-7595 (Print) 1435-8107 (Online). DOI 10.1007/s00344-016-9663-5. Impact Factor: 2.333.
20. Jay Kishor Prasad, Sandeep Kumar Gupta and Richa Raghuwanshi. (2017). Screening multifunctional PGPR strains for enhancing seed germination in wheat (*Triticum aestivum* L. *International Journal of Agricultural Research* 12: 64-72. ISSN: 18164897 (Print) 2152-2553 (Online). DOI: 10.3923/ijar.2017.64.72.

21. Meenakshi Singh, Neha Gupta and Richa Raghuwanshi (2017). Epitope imprinting approach to monitor diseases. *Journal of Molecular and Genetic Medicine*, 11 (2): 1-6. ISSN: 1747-0862.
22. A. Kumar, Vijay Singh Meena, B.R. Maurya, Richa Raghuwanshi, Jaideep Kumar Bisht, A. Pattanayak (2017). Towards the biological nitrogen fixation and nitrogen management in legume under sustainable agriculture. *Applied Soil Ecology* 117, 221-222 · DOI: 10.1016/j.apsoil.2017.05.013. ISSN: 09291393, Impact Factor: 3.224.
23. Manoj Kumar; Parismita Sarma; M S Dkhar; Highland Kayang; Richa Raghuwanshi; Nawal Kishore Dubey (2017). Assessment of chemically characterised *Gaultheria fragrantissima* Wall. essential oil and its major component as safe plant based preservative for millets against fungal, aflatoxin contamination and lipid peroxidation during storage. *Journal of Food Science and Technology* (Impact factor: 1.262. ISSN: 0022-1155 (print version) ISSN: 0975-8402 (electronic version).

II. NATIONAL

24. AR Sand, R Raghuwanshi, A Kumar and RS Upadhyay. (2001). Interaction between vesicular-arbuscular mycorrhizal fungi and *Fusarium udum* in relation to wilt disease of pigeon-pea. *Journal of Indian Botanical Society*. vol. 80: 219-224.
25. Richa Raghuwanshi and RS Upadhyay. (2005). Vesicular arbuscular mycorrhizae mediated effect on plant survival in a saline-alkali soil in relation to various amendments. *Indian Journal of Forestry*. vol 28 (3): 295-299.
26. Richa Raghuwanshi and RS Upadhyay. (2006). Vesicular arbuscular mycorrhizae mediated effect on plant growth in a saline-alkali soil in relation to various amendments. *The Indian Foresters*. vol. 132 (6): 707-725. ISSN: 00194816.
27. Richa Raghuwanshi and RS Upadhyay. (2010). Status of mycorrhizal fungi in a saline-alkaline habitat. *Biological Forum*. vol. 2 (1): 60-62. ISSN-0975-1130.
28. Richa Raghuwanshi and RS Upadhyay. (2010). Population dynamics of microflora in a saline-alkaline habitat. *Biozone*. vol. 2: 218-222. ISSN-0974-8873.
29. Sudhakar Pandey, PK Singh, Smita Singh, Aastik Jha and Richa Raghuwanshi. (2011). Inter-trait Relationship and Variability in Segregating Population of Muskmelon Derived from Intra-specific Cross for Total Soluble Solids and Yield. *Indian Journal of Plant Genetic Resources*. 24 (1): 52-55. Print ISSN: 0971-8184, On-line ISSN: 0976-1926. Impact Factor -0.096.
30. PK Singh, Smita Singh, Sudhakar Pandey, Richa Raghuwanshi and Mathura Rai. (2011). Inter trait relationship and variability in recombinant inbred lines (RILs) of muskmelon for total soluble solids and yield related traits. *Indian Journal of Genetics and Plant Breeding*. 24 (1): 52-55. Print ISSN: 0019-5200 Online ISSN: 0975-6906. Impact Factor -0.198.
31. Smita Singh, Sudhakar Pandey, Richa Raghuwanshi, PK Singh, Aastik Jha and Major Singh. (2011). Inheritance of sex expression and fruit bursting in melons. *Vegetable Science*. 38 (2): 225-227. ISSN No: 0970-6585.

32. Richa Raghuwanshi. (2012). Opportunities and challenges to sustainable agriculture in India. *Ne-bio*. Vol - III, (2): 78-86. ISSN 0976-3597. ISSN 0976-3597(Print), ISSN 2278-2281 (electronic).
33. BR Maurya, Ashok Kumar, RS Rathore and Richa Raghuwanshi (2012). Status of diazotropic bacteria and eletro-chemical properties of soil in different districts of eastern Uttar Pradesh, India. *Journal of Engineering, Computers & Applied Sciences*. vol-1, (1): 11-19. ISSN No: 2319-5606.
34. Amrita Saxena, H. B. Singh, Richa Raghuwanshi (2014). Differential Ability of *Trichoderma* Species in Imparting Biotic Stress Tolerance in *Cicer arietum*. *Journal of Agroecology and Natural Resource Management*. Print ISSN: 2394-0786, Online ISSN: 2394-0794, Volume 1, Number 4; November-January, pp. 310-310. Krishi Sanskriti Publications.
35. Saxena A, Raghuwanshi R and Singh H.B. (2014). Carnivorous plants: The molecular biology behind the wonder plants. *Biotech Today* 4 (1), 27-33, Print ISSN: 2319-2186 Online ISSN: 2322-0996.
36. Richa Raghuwanshi. (2014). Biofuel: An alternate energy source. *Biotech Today*, 4 (2), 14-17. Print ISSN: 2319-2186 Online ISSN: 2322-0996.
37. Smita Singh, Sudhakar Pandey, Richa Raghuwanshi, Vikram Pandey and Major Singh. (2015). SSR analysis for fruit and quality characters in infra-specific mapping population of melon. *The Indian Journal of Agricultural sciences*. 85(1): 32-7, (IF-0.18), H-index-14. Impact factor-0.27.
38. Shilpam Sinha and Richa Raghuwanshi. (2016). Phytochemical screening and antioxidant potential of *E. prostrata* (L.) L- A valuable herb. *International Journal of Pharmacy and Pharmaceutical Sciences*. Vol 8 Issue 3, 255-260. ISSN 0975 – 1491.
39. Richa Anand and Richa Raghuwanshi (2016). Insights into the molecular docking study of wedelolactone to improve the performance of computer-aided drug design. *International Journal of Pharma and Bio sciences*. 7(2): 798 – 806. ISSN 0975-6299.
40. Priyanka Singh Rathaur, Dinesh Singh, Richa Raghuwanshi. 2016. Characterization and Genetic diversity of *Xanthomonas campestris* pv. *campestris* causing black rot disease in crucifers in North India. *Indian Phytopathology*. 69 (2):114-118. ISSN: 0367-973X (Print) ISSN: 2248-9800 (Electronic) Impact factor - 0.27.
41. Sandeep Kumar Gupta, Jay Kishor Prasad and Richa Raghuwanshi. (2017). Characterizing rhizospheric plant growth promoting bacteria for their effects on oat (*Avena sativa*). *International Journal of Pharma and Bio sciences*. Volume 8 Issue 4, October – December, 142-151. ISSN 0975-6299. Impact factor-0.3.

III. CHAPTERS IN BOOKS

1. RS Upadhyay, Richa Raghuwanshi and Akhilesh Kumar. (2005). Microbial diversity in saline-alkali soils of India in relation to its reclamation. In: *Microbial Diversity: Opportunities and challenges*. (Edited by SP Gautam, Anjana Sharma, SS Sandhu and AK Pandey). Shree publishers and distributors, New Delhi, India. 351-360. ISBN: 81-8329-004-3.
2. RS Upadhyay, Richa Raghuwanshi and Akhilesh Kumar. (2007). Mycorrhizae and revegetation of saline-alkali soil - a review. In: *Biotechnology: plant health*. (Edited by Neeta Sharma and HB Singh). International Book distributing company Co. Lucknow, India. 727-740. ISBN: 81-8189-070-1.
3. Richa Raghuwanshi and Kavita Shah. (2008). Mycorrhizal technology in sustainable development of stressed ecosystems. In: *Advances in plant physiology (International Treatise Series - Vol. 10)*. (Edited by A Hemantaranjan). Scientific publishers. P.O. Box 91. Jodhpur, India. 441-453. ISSN: 0972-9917.
4. RS Upadhyay and Richa Raghuwanshi. (2009). Impact of mycorrhizal technology in reclamation of saline-alkali soil. In: *Molecular and physiological aspects of toxicology* (Edited by Kavita Shah). Tara Publishers. International Book distributing company Co. Lucknow. 44-74. ISBN: 81-85403-09-2.
5. Kavita Shah, Richa Raghuwanshi and Indra Singh. (2011). Phosphate transporters in symbiotic arbuscular endomycorrhizal association-A Bioinformatics Approach. In: *Advances in Life Sciences*. (Edited by Rajeshwar P Sinha, Naveen K Sharma and AK Rai) IK International publishing House Pvt. Ltd., New Delhi. 93-115. ISBN: 978-93-81141-04-5.
6. RS Upadhyay, Richa Raghuwanshi, and Akhilesh Kumar. Mycorrhizal diversity in different ecosystems. (2012). In: *Microbial diversity and functions*. (Edited by DJ Bagyaraj, KVBR Tilak and HK Kheri). New India Publishing Agency, New Delhi. 335-3352. ISBN: 978-93-81450-10-9.
7. Richa Raghuwanshi. (2012). Resistance against heavy metals by mycorrhizal association. In: *Biodiversity and sustainable development*. (Edited by KN Tiwari and Swarn Lata). Prasanana Prakashan, Bhopal, MP, India. ISBN: 978-81-905131-0-4. 15-26.
8. Indra Singh, Swati Pandey, Richa Raghuwanshi and Kavita Shah. (2012). Bioinformatics approach to the study of Phosphate and Carbon Transporters in Mycorrhizal Associations. Proceeding of ICONBHU-2012.
9. Richa Raghuwanshi and RS Upadhyay. Mycorrhizae: A promising step towards green technology. (2013). In: *Microbes in forestry and Co-existence*. (Edited by Jammaludin and AK Singh). Scientific publishers. Jodhpur. ISBN: 978-81-7233-857-2. 48-64.
10. Saxena A, Mishra S, Raghuwanshi R and Singh H.B. (2013). Biocontrol agents: Basics to biotechnological applications in sustainable agriculture. In: *Recent advances in Microbiology Vol. II*, (Edited by S.P. Tiwari, Rajesh Sharma and Rajeeva Gaur, Nova Science Publishers Inc., U. S. A.) ISBN: 978-1-62808-628-7. 141-163.

11. Raghuwanshi Richa and Sinha Shilpam. (2014). Linking mycorrhizal technology with medicinal plant secondary metabolites. In: *Microbial diversity and biotechnology in food security*. (Edited by Upadhyay RS, Dubey NK, Kharwar RN, Raghuwanshi R), Springer. Page 121-132. ISBN-10: 8132218000, ISBN-13: 978-8132218005.
12. Shilpam Sinha and Richa Raghuwanshi. (2015). Influence of water availability on microbial populations of rhizospheric soils of *E. Prostrata* (L.) L and *A. paniculata* Burm Wall Nees plant under different biofertilizer treatment. In: *New Dimensions in Microbiology*. (Edited by Khan MMAA, Grandy John K, Egamberdieva Difuza, Murtaza Abid, Raaz K Maheshwari, Naqvi TS) Publisher Lenin Media, Delhi. Page 43-52. ISBN 978-93-85160-84-4.
13. Richa Raghuwanshi, Shalini Singh, Mohd. Aamir, Amrita Saxena, Vijay Kumar Gupta and R.S. Upadhyay. (2016) Microfungi in Biofuel and Bioenergy Research. In: *Biology of Microfungi*. (Ed.) De-wei Li. Springer. ISBN 978-3-319-29135-2, ISBN 978-3-319-29137-6 (e-Book). DOI 10.1007/978-3-319-29137-6. pp 543-571.
14. Indra Bahadur, BR Maurya, Ashok Kumar, VS Meena and R. Raghuwanshi (2016). Towards the Soil Sustainability and Potassium-Solubilizing Microorganisms. In book: Potassium Solubilizing Microorganisms for Sustainable Agriculture. (Eds. VS Meena, BR Maurya, J P Verma, RS Meena) pp. 255-266. ISBN 978-81-322-2774-8, Springer India. DOI: 10.1007/978-81-322-2776-2_18.
15. Richa Raghuwanshi, Shilpam Sinha and Sandeep Kumar Gupta. (2017). Alleviation of drought stress in plants through microbial interventions. In: Satya Shila Singh (Ed.) Plants and Microbes in an Ever-Changing Environment. Pages 159-182. Nova Science Publishers, Inc., USA. ISBN 978-1-53610-918-4.
16. Richa Raghuwanshi and Amrita Saxena (2017). Phosphorus management in agricultural soils by mycorrhizal fungi. In: A Agrawal and Kuldeep Yadav (Ed.) Mycorrhizal Fungi. Pages 221–244. ISBN: 9789351248415. Astral International Pvt. Ltd., New Delhi.

IV. Books Review

1. Ashok Kumar, Richa Raghuwanshi, Vijay Singh Meena, J.K. Bisht, A. Pattanayak, B.R. Maurya. (2017). Towards the biological nitrogen fixation and nitrogen management in legume under sustainable agriculture. *Applied soil Ecology*. 117–118 (2017) 221–222.
2. R N Kharwar and Richa Raghuwanshi. (2017). Cacti culture: Prickles of pride By Maj Gen C.S. Bewli. *Current Science*, vol 113, No.11 (10 December): 2203-2204. Impact factor- 0.843

V. ARTICLES

1. SS Singh, Richa Raghuwanshi and Nirupma singh. (2003). The Bread makers-A dialogue on wheat culture. *Geography and You*. vol. 3 (7-8): 5-9.

2. Richa Raghuwanshi, SS Singh, and Nirupma singh. (2003). The Raga of rice. *Geography and You*. vol. 3 (12): 10-12.
3. SS Singh, GP Singh, JB Sharma, Nanak Chand, DN Sharma, JB Singh and R Raghuwanshi. (2002). Sada bahar harit kranti ke path pur ek aur pugh - Gehoon paudh praroop. *Prasardoot* 6 (2): 12.
4. SS Singh, Richa Raghuwanshi and Nirupma Singh. (2003). Bharat mai gehoon vikas ki vartamaan stithi. *Geography and you*. vol. 2 (5): 19-21.
5. Amrita Saxena, Richa Raghuwanshi, H. B. Singh. (2014). Jantubhakshi paudho ki dunia. *Sandarbh magazine*.35 (92): 45-55.

ABSTRACTS PRESENTED IN SEMINARS/SYMPOSIUM/CONFERENCES - 45