

CURRICULUM VITAE

Dr. AJEY SINGH

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EDUCATIONAL QUALIFICATIONS

- D. Phil (Ph.D.), Plant Physiology Laboratory, Department of Botany, University of Allahabad, Prayagraj. 2014- 2018
- M.Sc. Botany, Department of Botany, University of Allahabad. 2013, First division
- B.Sc. Ewing Christian College, University of Allahabad. 2011, First division
- Intermediate, Government Inter College, Prayagraj. 2007, First division
- High School, Government Inter College, Prayagraj. 2005, First division

ADDITIONAL QUALIFICATIONS

- CSIR- NET in life sciences, June 2018
- CTET- 2015

TEACHING EXPERIENCE

- **Assistant Professor** at Department of Botany, University of Lucknow, Lucknow: 11/06/2022- Present
- **Assistant Professor** at Department of Botany, Nehru Gram Bharti (Deemed to be University), Prayagraj: 11/11/2020- 10/06/2022
- **Guest faculty** at Department of Botany, University of Allahabad: 08-08-2019 to 30-04-2020
- **Guest faculty** at Department of Botany, University of Allahabad: 09-08-2018 to 30-04-2019

RESEARCH EXPERIENCE

D. Phil (Ph.D.), Plant Physiology Laboratory, Dept. of Botany, University of Allahabad, Prayagraj.

Title: "Effect of nanoparticles on growth and metabolism of some crop plants".

Supervisor: Dr. N.B. Singh

Number of publications: 32 **Total Citation:** 1332 **h-index:** 15 **Cumulative Impact Factor:** 50.998

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Web of Science ID: <https://publons.com/researcher/2176276/ajey-singh/>

Scopus ID: <https://www.scopus.com/authid/detail.uri?authorId=57339824600>

YOUNG SCIENTIST AWARD in International symposium "Recent trends in agriculture biodiversity and social sustainability" held at Botanical survey of India, CRC, Allahabad, 30th Sep-1st Oct 2018

List of Publications:

Book Authored

1. **Ajey Singh**. "Concepts of Ecology and Environment". (ISBN- 978-93-5531-328-7). Pragati Publication.

Book Chapter

1. **Ajey Singh**, N. B. Singh, Vijaya Yadav, Chanda Bano, Niharika, Shubhra Khare and Ravi Yadav. "Nod factor signaling in legume-*Rhizobium* symbiosis: specificity and molecular genetics of nod factor signaling". Abiotic Stress and Legumes: Tolerance and Management (ISBN-13: 978-0128153550)". Elsevier Publication.
2. **Ajey Singh**, Imtiyaz Hussain, Shadma Afzal, Aishwarya Singh and N. B. Singh. "Circadian regulation of abiotic stress tolerance in legumes". Abiotic Stress and Legumes: Tolerance and Management (ISBN-13: 978-0128153550)". Elsevier Publication.

Research articles:

1. **Ajey Singh**, Imtiyaz Hussain, N. B. Singh, and Himani Singh. "Uptake, translocation and impact of green synthesized nanoceria on growth and antioxidant enzymes activity of *Solanum lycopersicum* L" (2019). Ecotoxicology and Environmental Safety. 182: 109410. ISSN: 0147-6513. **Impact factor: 7.129**. <https://doi.org/10.1016/j.ecoenv.2019.109410>
2. **Ajey Singh**, N. B Singh, Shadma Afzal, Tanu Singh, and Imtiyaz Hussain. "Zinc oxide nanoparticles: a review of their biological synthesis, antimicrobial activity, uptake, translocation and biotransformation in plants" (2018). Journal of Materials Science. 53, no. 1 (2018): 185-201. ISSN: 0022-2461. **Impact factor 4.220**. <http://doi.org/10.1007/s10853-017-1544-1>
3. **Ajey Singh**, N. B. Singh, Imtiyaz Hussain, and Himani Singh. "Effect of biologically synthesized copper oxide nanoparticles on metabolism and antioxidant activity to the crop plants *Solanum lycopersicum* and *Brassica oleracea* var. botrytis" (2017). Journal of Biotechnology. 262: 11-27. ISSN: 0168-1656. **Impact factor: 3.595**. <https://doi.org/10.1016/j.jbiotec.2017.09.016>
4. **Ajey Singh**, N. B. Singh, Imtiyaz Hussain, Himani Singh, and Vijaya Yadav. "Synthesis and characterization of copper oxide nanoparticles and its impact on germination of *Vigna radiata* (L.) R. Wilczek" (2017). Tropical Plant Research. 4, no. 2: 246-253. ISSN: 2349-9265. <https://doi.org/10.22271/tpr.2017.v4.i2.034>.

5. **Ajey Singh**, N. B. Singh, Imtiyaz Hussain, Himani Singh, Vijaya Yadav, and S. C. Singh. "Green synthesis of nano zinc oxide and evaluation of its impact on germination and metabolic activity of *Solanum lycopersicum*" (2016). Journal of Biotechnology. 233: 84–94. ISSN: 0168-1656. **Impact factor: 3.595**. <https://doi.org/10.1016/j.jbiotec.2016.07.010>
6. N. B Singh, **Ajey Singh**, Imtiyaz Hussain, Himani Singh, and S. C. Singh. "Synthesis, characterization and application of ruthenium oxide nanoparticles on growth and metabolism of *Brassica oleracea* L" (2015). Advanced Science Letters. 21, no. 8: 2635-2640. ISSN: 1936-6612. <https://doi.org/10.1166/asl.2015.6430>
7. **Ajey Singh**, N. B. Singh, Imtiyaz Hussain, Himani Singh, and S. C. Singh. "Plant-nanoparticle interaction: an approach to improve agricultural practices and plant productivity" (2015). International Journal of Pharmaceutical Science Invention. 4, no. 8: 25-40. ISSN 0975-1491. <https://doi.org/10.1080/19315260.2021.1935387>
8. Shubhra Khare, N. B. Singh, Niharika, **Ajey Singh**, Nimisha Amist, Zeba Azim, Chanda Bano, Vijaya Yadav & Ravi Kumar Yadav, 2022. Salinity-Induced Attenuation in Secondary Metabolites Profile and Herbicidal Potential of *Brassica nigra* L. on *Anagallis arvensis* L. Journal of Plant Growth Regulation, pp.1-16. ISSN: 0721-7595. **Impact factor: 4.169**. <https://doi.org/10.1007/s00344-022-10607-3>
9. Shubhra Khare, N.B. Singh, Ajey Singh, Nimisha Amist, Zeba Azim and R.K. Yadav. "Phytochemicals mitigation of *Brassica napus* by IAA grown under Cd and Pb toxicity and its impact on growth responses of *Anagallis arvensis*" (2021). Journal of Biotechnology. 343: 83-95. ISSN: 0168-1656. **Impact factor: 3.595**. <https://doi.org/10.1016/j.jbiotec.2021.12.001>
10. Ravi Kumar Yadav, N. B. Singh, Ajey Singh, Vijaya Yadav, Niharika, Shubhra Khare & Zeba Azim. "Role of bio-based synthesized nanozinc oxide in ameliorating the deleterious effects caused by lead in *Vigna radiata* L" (2022). Applied Biochemistry and Biotechnology. 1-16. **Impact factor: 2.926**. <https://doi.org/10.1007/s12010-022-03801-2>
11. Niharika, N.B. Singh, Shubhra Khare, **Ajey Singh**, Vijaya Yadav and R.K. Yadav. "Salicylic acid and Indole acetic acid synergistically ameliorates Ferulic acid toxicity in *Brassica juncea* L. seedlings" (2021). Plant Physiology Reports, 1-12. ISSN: 2662-253X. <https://doi.org/10.1007/s40502-021-00617-w>
12. Niharika, N.B. Singh, Shubhra Khare, **Ajey Singh**, Vijaya Yadav and R.K. Yadav. "Attenuation of vanillic acid toxicity by foliar application with indole-3-acetic acid in tomato seedlings" (2021). International Journal of Vegetable Science.1-22. ISSN: 1931-5260. <https://doi.org/10.1080/19315260.2021.1935387>

13. Niharika, N.B. Singh, Shubhra Khare, **Ajey Singh**, Vijaya Yadav and R.K. Yadav, 2021. Kinetin modulates physiological and biochemical attributes of *Vigna radiata* L. seedlings exposed to 2-benzoxazolinone stress. *Biologia*, 76(5), pp.1377-1389. ISSN: 0006-3088. **Impact factor: 1.350.** <https://doi.org/10.1007/s11756-021-00734-9>
14. Ravi Kumar Yadav, N. B. Singh, Ajey Singh, Vijaya Yadav, K. M. Niharika, and Shubhra Khare. "Bio-based synthesis of nano silver using *Tridax procumbens* leaf extract and its impacts on germination and metabolic activity of *Solanum lycopersicum* L." (2020). *Journal of Plant Biochemistry and Biotechnology*, 1-6. ISSN: 1553-3468. **Impact factor: 1.175.** <https://doi.org/10.1007/s13562-020-00629-x>
15. Niharika, Narsingh Bahadur Singh, **Ajey Singh**, Shubhra Khare, Vijaya Yadav, Chanda Bano, and Ravi Kumar Yadav. "Mitigating Strategies of Gibberellins in Various Environmental Cues and Their Crosstalk with Other Hormonal Pathways in Plants: a Review" (2020). *Plant Molecular Biology Reporter*, 1-16. ISSN: 0735-9640. **Impact factor: 1.595.** <https://doi.org/10.1007/s11105-020-01231-0>
16. Shubhra Khare, N.B. Singh, Ajey Singh, Imtiyaz Hussain, Niharika, Vijaya Yadav, Chanda Bano, Ravi Kumar Yadav and Nimisha Amist. "Plant secondary metabolites synthesis and their regulations under biotic and abiotic constraints" (2020). *Journal of Plant Biology*. 63 (3): 203–216. ISSN: 1867-0725. **Impact factor: 2.434.** <https://doi.org/10.1007/s12374-020-09245-7>
17. Ravi Kumar Yadav, N. B. Singh, **Ajey Singh**, Vijaya Yadav, Chanda Bano, Niharika and Shubhra Khare. "Expanding the horizons of nanotechnology in agriculture: recent advances, challenges and future perspectives" (2020). *Vegetos*. 1-19. ISSN: 0970-4078. <https://doi.org/10.1007/s42535-019-00090-9>
18. Vijaya Yadav, N. B. Singh, Himani Singh, **Ajey Singh**, and Imtiyaz Hussain. "Putrescine affects tomato growth and response of antioxidant defense system due to exposure to cinnamic acid" (2019). *International Journal of Vegetable Science*. 25(3): 259-277. ISSN: 1931-5260. <https://doi.org/10.1080/19315260.2018.1508110>
19. Imtiyaz Hussain, **Ajey Singh**, N. B. Singh, Aishwarya Singh and Pooja Singh. "Plant-nanoceria interaction: Toxicity, accumulation, translocation and biotransformation" (2019). *South African Journal of Botany*. 121: 239-247. ISSN: 0254-6299. **Impact factor: 3.111.** <https://doi.org/10.1016/j.sajb.2018.11.013>
20. Vijaya Yadav, N. B. Singh, Himani Singh, **Ajey Singh**, and Imtiyaz Hussain. "Alleviation of deleterious effects due to 2-benzoxazolinone by exogenous application of spermidine in *Solanum lycopersicum*" (2018). *International Journal of Vegetable Science*. 24, no. 5: 466-482. ISSN: 1931-5260. <https://doi.org/10.1080/19315260.2018.1439553>

21. Vijaya Yadav, Himani Singh, **Ajey Singh**, Imtiyaz Hussain, and N. B. Singh. "Salicylic acid induced changes on some physiological parameters symptomatic for oxidative stress in maize (*Zea mays* L.) grown under cinnamic acid stress" (2018). Russian Agricultural Sciences. 44, no. 1: 9-17. ISSN: 1068-2374. <http://doi.org/10.3103/S1068367418010202>
22. Imtiyaz Hussain, N. B. Singh, **Ajey Singh**, Himani Singh, S. C. Singh, and Vijaya Yadav. "Exogenous application of photosynthesized nanoceria to alleviate ferulic acid stress in *Solanum lycopersicum*" (2017). Scientia Horticulturae. 214: 158-164. ISSN: 0304-4238. **Impact factor: 4.342.** <https://doi.org/10.1016/j.scienta.2016.11.032>
23. Imtiyaz Hussain, N. B. Singh, **Ajey Singh**, and Himani Singh. "Allelopathic potential of sesame plant leachate against *Cyperus rotundus* L." (2017). Annals of Agrarian Science. 15, no. 1: 141-147. ISSN: 1512-1887. <https://doi.org/10.1016/j.aasci.2016.10.003>
24. Himani Singh, N. B. Singh, **Ajey Singh**, and Imtiyaz Hussain. "Exogenous application of salicylic acid to alleviate glyphosate stress in *Solanum lycopersicum*" (2017). International Journal of Vegetable Science. 23, no. 6: 552- 566. ISSN: 1931-5260. <https://doi.org/10.1080/19315260.2017.1347845>
25. Himani Singh, **Ajey Singh**, Imtiyaz Hussain, and Vijaya Yadav. "Oxidative stress induced by lead in *Vigna radiata* L. seedling attenuated by exogenous nitric oxide" (2017). Tropical Plant Research 4, no. 2: 225-234. ISSN: 2349-9265. <http://doi.org/10.22271/tpr.2017.v4.i2.031>
26. Himani Singh, **Ajey Singh**, Imtiyaz Hussain, and Vijaya Yadav. "Physiological and biochemical roles of nitric oxide against toxicity produced by glyphosate herbicide in *Pisum sativum*" (2017). Russian Journal of Plant Physiology. 64, no. 4: 518-524. ISSN: 1608-3407 **Impact factor: 1.481.** <http://doi.org/10.1134/S1021443717040136>
27. Imtiyaz Hussain, N. B. Singh, **Ajey Singh**, Himani Singh, and S. C. Singh. "Green synthesis of nanoparticles and its potential application" (2016). Biotechnology letters. 38, no. 4: 545-560. ISSN: 0141-5492. **Impact factor: 2.461.** <http://doi.org/10.1007/s10529-015-2026-7>
28. Himani Singh, N. B. Singh, **Ajey Singh**, Imtiyaz Hussain, and Vijaya Yadav. "Physiological and biochemical effects of salicylic acid on *Pisum sativum* exposed to isoproturon" (2016). Archives of Agronomy and Soil Science 62, no. 10: 1425-1436. ISSN: 1476-3567. **Impact factor: 3.092.** <https://doi.org/10.1080/03650340.2016.1144926>
29. Vijaya Yadav, N. B. Singh, Himani Singh, **Ajey Singh**, and Imtiyaz Hussain. "Allelopathic invasion of alien plant species in India and their management strategies: a review" (2016). Tropical Plant Research 3, no. 1: 87-101. ISSN: 2349-9265.
30. Imtiyaz Hussain, **Ajey Singh**, Himani Singh, S. C. Singh, and N. B. Singh. "Physiological response of broccoli exposed to RuO₂ nanoparticle" (2015). Tropical Plant Research. 2, no3: 246-252. ISSN: 2349-9265.

Conference and workshop attended

1. Participated and completed DST-SERB sponsored workshop organized on “Nanotechnology approach for protein based therapy development” organized by Centre of Biotechnology, University of Allahabad, and Prayagraj, UP, India from 14-15, December, 2021.
2. Participated in the online UGC sponsored refresher course in Biotechnology organized by Centre of Biotechnology, University of Allahabad, Prayagraj, UP, India from January 10, 2022-January 23, 2022.
3. Participated in the course on “Interphase between nanoparticles and living systems” organized by Global Initiative of academic networks (GIAN) held at MNNIT, Prayagraj from 15-26, July 2019.
4. Participated in the course on “Emerging biophotonics solutions for disease diagnosis” organized by Global Initiative of academic networks (GIAN) held at MNNIT, Prayagraj from 1-12, April 2019.
5. International Symposium on “Recent Trends in Agriculture Biodiversity and Social Sustainability” (ABBS-2018) jointly organized by Blue Planet Society, Botanical Survey of India, Prayagraj UP, India from September 30- October 1, 2018.
6. International Conference on “Current Scenario and Prospects of Nanotechnology and Bio-statistics” (ICNB-2016) held at School of Sciences, U.P. Rajarshi Tandon Open University, Prayagraj, UP, India from 25-26, February 2016.
7. 103rd Indian Science Congress held at University of Mysore, Mysuru from 3-7, January 2016.
8. Indian Science Congress Association Allahabad Chapter, National Symposium on “Science and Technology for Human Development” hosted by University of Allahabad, Prayagraj, UP, India from 14-15, March 2015.
9. 5th International conference on “Plant and environmental pollution” organized by international society of environmental botanist (ISEB) held at CSIR-NBRI, Lucknow, UP, India from 24-27, February 2015.

Invited lectures

- Delivered a talk on “Effect of zinc oxide nanoparticles on crop plants” in the 6th International Conference on Environment and Ecology (6TH ICEE 2020) held on February 24-26, 2020 at University of Allahabad, Prayagraj, UP, India.

References

Prof. N.B. SINGH

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