CURRICULUM VITAE

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http://www.researcherid.com/rid/Q-4021-2017 [Researcher ID: Q-4021-2017]
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https://www.scopus.com/authid/detail.uri?authorId=36097852000
https://loop.frontiersin.org/people/110820/overview
https://publons.com/researcher/2040622/sarvajeet-s-gill/
https://scholargps.com/scholars/90857603861950/sarvajeet-singh-gill

Areas of Research Interest

Plant Biotic & Abiotic Stress Tolerance, Reactive Oxygen Species Signaling and Antioxidant Machinery in Plants, Helicases, Transgenic, Nitrogen & Sulfur Metabolism, Plant Fungal Symbiotic Interactions for Crop Improvement & Artificial intelligence

Description of Research/Scientific Activity

Increasing crop production is now the highest agricultural priority because of increasing world population & changing climatic conditions. Abiotic stresses are the primary causes of crop loss worldwide. The main area of research includes Genetic Engineering, Stress Physiology and Molecular Biology (Development of abiotic stress tolerant crop plants, the physiological, biochemical and molecular characterization of agronomically important plants under abiotic stress factors, involvement of mineral nutrients and other biotechnological approaches in the amelioration of abiotic stress effects in crop plants, use of a combination of genetic, biochemical, genomic and proteomic approaches to understand the responses of various components of antioxidant machinery to abiotic stress and stress signaling and stress tolerance in crop plants). Research is undertaken to understand the mechanism of abiotic stress tolerance (heavy metal/salinity/drought) in plants (*Brassica juncea*, *Triticum aestivum*, *Lepidium sativum*, *Oryza sativa & model plants like Nicotiana tabaccum and Arabidopsis thaliana* etc) at molecular & physiological level by studying the response of the components of antioxidant machinery, photosynthetic, nitrogen & sulfur metabolic pathways. Detailed account of reactive oxygen species (ROS) and antioxidant machinery in crop plants has been presented (Plant Physiology & Biochemistry 48: 909-930). It is also presented that Cd at high dose perturbs growth, photosynthesis and nitrogen metabolism while at low dose it up regulates sulfur assimilation and antioxidant machinery in garden cress (Plant Science 182, 112-120). Research is also undertaken for the development of abiotic stress (heavy metal/high salinity/drought/cold) tolerant crops including rice by transgenic approach. Together with Dr. Narendra Tuteja (ICGEB, New Delhi) work on plant helicases for abiotic stress tolerance is going on. The mechanism of stress tolerance by PDH45 in Tobacco and Rice has been explored. A novel function of plant MCM6 in salinity stress tolerance has also been discovered that will help to improve crop production at sub-optimal conditions (Plant Molecular Biology 76:19-34). Herbicide and salinity stress tolerance (PDH45 + EPSPS) in plants has also been explored (Front. Plant Sci. 8:364). Salinity tolerant tobacco and rice plants have been developed, without affecting the overall yield. This research uncovers new pathways to plant abiotic stress tolerance and indicates the potential for improving crop production at sub-optimal conditions. Featured consecutively in the "World Ranking of Top 2% Scientists" in 2021, 2022 & 2023.

EDUCATIONAL QUALIFICATIONS:

S. No.	Degree	University	Year	Subjects	Percentage
1.	Post-Doc	ICGEB	2008-2010	Genetic Engineering & Plant Molecular Biology	Research
2.	Ph.D	AMU., Aligarh	2008	Botany (Stress Physiology)	Awarded
3.	M.Phil	AMU., Aligarh	2003	Botany (Stress Physiology)	80.0%
4.	M.Sc	AMU., Aligarh	2001	Botany (Stress Physiology)	75.25% **(GOLD MEDAL)**
5.	B.Sc	CSJM, Kanpur University	1998	Botany, Chemistry, Zoology	75.2%

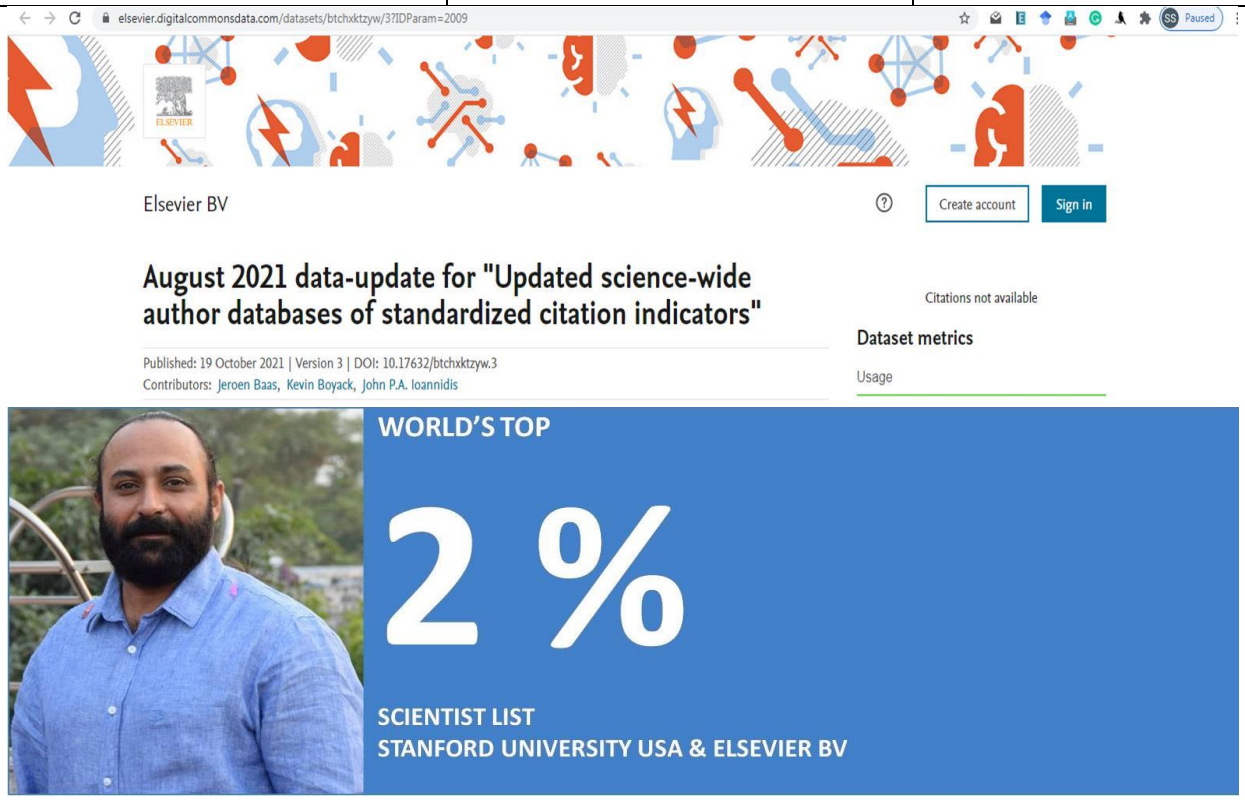
PROFESSIONAL RECOGNITION, AWARDS, FELLOWSHIPS, TRAINING RECEIVED:

- ✓ 2024_Editorial Board Member-Acta Botanica Caucasica_ https://botanic.az/en/articles/7/3/2
- ✓ Reviewed Project Proposal on "GreenTech cultivation of wheat, barley, and olive: Resilience to salinity and drought under conditions of integrated application of biogenic nanoparticles and biochar" 2024 Call_Higher Education and Science Committee, Republic of Armenia
- ✓ Guest Editor, Special Issue, Plant Nano Biology, "Nanoparticle and plant soil health under changing Environment" July 22, 2024 to till date https://www.sciencedirect.com/journal/plant-nano-biology/about/call-for-papers#nanoparticle-and-plant-soil-health-under-changing-environment
- ✓ Guest Editor, Special Issue, Current Plant Biology, "The Agritech Revolution: Artificial Intelligence Reshaping the Agriculture" February 21, 2024 to till date https://www.sciencedirect.com/journal/current-plant-biology/about/call-for-papers#the-agritech-revolution-artificial-intelligence-reshaping-the-agriculture
- ✓ Guest Editor, Special Issue, Plants, "Crop Improvement for Climate Resilience and Global Food Security" June 2023-till date, https://www.mdpi.com/journal/plants/special_issues/L32WU4E7C5
- ✓ Guest Editor, Plant Nano Biology, Elsevier, November 2022-till date, SI: "Nano-Biotechnology in Growth Promotion and Abiotic Stress Tolerance" https://www.sciencedirect.com/journal/plant-nano-biology/about/call-for-papers#nano-biotechnology-in-growth-promotion-and-abiotic-stress-tolerance
- ✓ Guest Editor, Biomolecules_MDPI, Special Issue "Dynamic Biomolecules to Impart Abiotic Stress Tolerance in Plants" https://www.mdpi.com/journal/biomolecules/special_issues/7WMTRRB46T
- ✓ Guest Editor, Plant Science, Elsevier, September 2022-till date, SI: "Crop Improvement & Plant Resilience to Abiotic Stresses" https://www.sciencedirect.com/journal/plant-science/about/forthcoming-special-issues
- ✓ Guest Editor, Genes MDPI, September 2022-till date, SI: "Molecular Regulation of Abiotic Stress Responses" https://www.mdpi.com/journal/genes/special_issues/15R8226C02
- ✓ Associate Editor, 3Biotech, 2020-till date, https://www.springer.com/journal/13205/editors
- ✓ Special Collection on 2022_F1000 Plant Science Gateway,'Biotechnological Interventions for Climate Resilient Crops', https://f1000research.com/collections/biotechnological-interventions-climate-resilient-crops/about-this-collection
- ✓ F1000 Plant Science Gateway Advisor, 2022-till date; https://f1000research.com/plantscience
- ✓ Section Editor, Agriculture Sciences, Current Indian Science, 2022-till date; ISSN: 2210-299X; Bentham Science, UAE https://currentindianscience.com/agricultural-science/editorial-board.php
- ✓ Member, International Natural Product Sciences Taskforce (INPST), http://inpst.net/
- ✓ Managing Editor, Plant Physiology and Biochemistry, 2022-till date; SI: Emerging role of non-coding RNAs in plant development and stress responses, Elsevier,

https://www.journals.elsevier.com/plant-physiology-and-biochemistry/forthcoming-special-issues/emerging-role-of-non-coding-rnas-in-plant-development-and-stress-responses

- ✓ Topic Editor, Frontiers in Plant Science, 2022_Recent insights into the double role of hydrogen peroxide in plants, Volume II. https://www.frontiersin.org/research-topics/38701/recent-insights-into-the-double-role-of-hydrogen-peroxide-in-plants-volume-ii
- ✓ Topic Editor, Frontiers in Plant Science, 2022_The Brassicaceae — Agri-Horticultural and Environmental Perspectives, Volume II. https://www.frontiersin.org/research-topics/26979/the-brassicaceae---agri-horticultural-and-environmental-perspectives-volume-ii
- ✓ Associate Editor (Editorial Board), Annals of Genetics, 2021-till date, https://mediterraneanjournals.com/index.php/ag/about/editorialTeam
- ✓ Guest Managing Editor, Plant Gene, 2021-22, SI: Biotechnology and crop improvement under changing environment: Current interventions https://www.sciencedirect.com/journal/plant-gene/special-issue/1042D68N8H4
- ✓ Associate Editor, Brazilian Journal of Botany, Springer https://www.springer.com/journal/40415/editors
- ✓ Guest Editor of Genes (ISSN 2073-4425) Special issue: Genetic Regulation of Abiotic Stress Responses (2017) https://www.mdpi.com/journal/genes/special_issues/genetic_regulation?view=compact&listby=type
- ✓ Editorial Board Member-Biochemistry & Molecular Biology Journal (2016)
- ✓ http://biochem-molbio.imedpub.com/editors.php
- ✓ Editorial Board Member-Journal of Advanced Research in Agriculture Science & Technology (2016)
  http://science.adrpublications.com/index.php/JoARAST/about/editorialTeam
- ✓ Editorial Board Member-Journal of Advanced Research in Bioscience and Biotechnology (2016)
- ✓ Guest Editor, Special issue: Functional Genomics Approaches to Decipher Plant Resilience to Environmental Stresses (International Journal of Plant Genomics) http://www.hindawi.com/journals/ijpg/si/375937/cfp/
- ✓ Associate Editor, Frontiers in Plant Science, Section-Plant Physiology (Topic Title: Recent insights into the double role of hydrogen peroxide in plants) http://www.frontiersin.org/Journal/SpecialTopics/ViewTopicDetails.aspx?SRID=11
- ✓ Associate Editor, Frontiers in Plant Science, Section-Crop Science and Horticulture (Topic Title: The Brassicaceae - agri-horticultural and environmental perspectives) http://www.frontiersin.org/Journal/SpecialTopics/ViewTopicDetails.aspx?SRID=11
- ✓ Associate Editor, Frontiers in Plant Science, Section-Environmental Toxicology (Topic Title: Phytotoxicity of high and low levels of plant-beneficial heavy metal ions) http://www.frontiersin.org/Journal/SpecialTopics/ViewTopicDetails.aspx?SRID=11
- ✓ Guest Editor of BioMed Research International Special Issue (Plant Stress & Biotechnology) http://www.hindawi.com/journals/bmri/si/797210/
- ✓ Routine reviewer of Plant Signaling and Behaviour, Journal of Plant Growth Regulation, Gene, Physiologia Plantarum, Annals of Botany, Chemosphere, Ecotoxicology, Environmental Science and Pollution Research, International Journal of Phytoremediation, Journal of Plant Nutrition and Soil Science, Ecotoxicology & Environmental Safety, Plant Physiology and Biochemistry, Protoplasma, Australian Journal of Crop Science, Molecular Biology Reports, PloS One, Annals of Botany, Environmental Science & Pollution Research, Frontiers in Plant Science, Nature Scientific Reports etc.
- ✓ Reviewer of International Grants
  SDE/GWIS Fellowship, USA (Graduate Women in Science Fellowships)
  GACR, Czech Science Foundation Grant (Project ID 13-15229S)

Agency/Organization which gave the award/honor/fellowship	Award/honor/fellowship	Nature of the award
National Environmental Science Academy, New Delhi	NESA Distinguished Award -2023	Research Contribution – Plant Molecular Biology
Millipore Sigma, Burlington, USA	Life Science Global Advisor-2022, Millipore Sigma	Life Science Global Advisor
MD University, Rohtak	MDU Research Excellence Award - 2022	Research Contribution
Elsevier BV (SCOPUS) & Stanford University, USA	Global 2% Most influential Scientist in Plant Science & Botany – 2022	Research Contribution
Governor of Haryana	Teaching and Committed Research	Research Contribution
Stanford University, USA	Global 2% Most influential Scientist in Plant Science & Botany – 2020	Research Contribution
Web of Science, Clarivate Analytics	INDIA Research Excellence & Citation Award – 2017	Research Contribution and Citations on Web of Science
Department of Science & Technology (DST), Govt. of India	Young Scientist Award-(2014-2017)	Research Contribution
National Environmental Science Academy, New Delhi	Junior Scientist of the year Award-2008	Recognition of Scientific Contribution
Aligarh Muslim University, Aligarh	Gold Medal	**Gold Medal** for standing First class First in the M.Sc. Exam
Research Associate	ICGEB, New Delhi	Research
Senior Research Fellow	ICGEB, New Delhi	Research
Senior Research Fellow (Extended)	CSIR/A.M.U., Aligarh	Research
Senior Research Fellow	CSIR/A.M.U., Aligarh	Research
University Fellowship (SRF)	A.M.U., Aligarh	Research
University Fellowship (JRF)	A.M.U., Aligarh	Research



Teaching Activity

Teaching M.Sc. Agriculture Biotechnology and M.Sc. Biotechnology

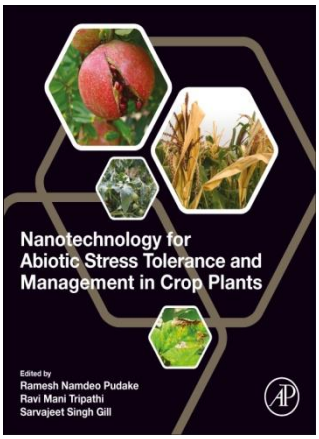
M.Sc/Ph.D students guided	
Ph.D students	**04 Awarded, 01 (Submitted), 01 Registered**
M.Sc Dissertation	**45 (Guided), 06 (Presently doing)**
Project Students (JRF, SRF, RA)	**08 (Guided)**

Details of Projects being completed/ongoing as principal investigator/along with its silent features

S. No.	Project title	Funding agency	Silent feature
1.	DBT-BUILDER-Maharshi Dayanand University Interdisciplinary Life Science Programme for Advance Research and Education (No. BT/INF/22/SP43043/2021; vide SAN No. 102/IFD/SAN/1796/2021-2022 dated November 26, 2021) 'Plant-microbe interaction for sustainable Agriculture'	DBT	Interdisciplinary Life Science Research
2.	Zero budget agriculture	MDU, Rohtak	Natural Khad Making & agriculture
3.	Plant-microbe interaction studies for salt induced oxidative stress management of maize (*Zea mays* L.) by the root endophyte	RKF Fund	Sustainable cultivation under salinity stress
4.	Development of salinity and/or drought stress tolerant Indian mustard (*Brassica juncea* L.) plants by overexpression of p68 (Ddx5) RNA helicase gene	CSIR, New Delhi	Overexpression of p68 (Ddx5) RNA helicase gene in *B. juncea* for salinity and/or drought tolerance
5.	A symbiotic approach for the improvement of salt tolerance of mustard (*Brassica juncea* L.) through *Piriformospora indica*: Role of antioxidant machinery	UGC, New Delhi	*Piriformospora indica* led salinity stress tolerance in *B. juncea*
6.	Salt induced oxidative stress tolerance of rice (*Oryza sativa* L.) cultivars differing in tolerance potential by the root endophyte *Piriformospora indica*: Significance of ascorbate-glutathione pathway	DST, New Delhi	*P. indica* amelioration of salt induced oxidative stress in Rice

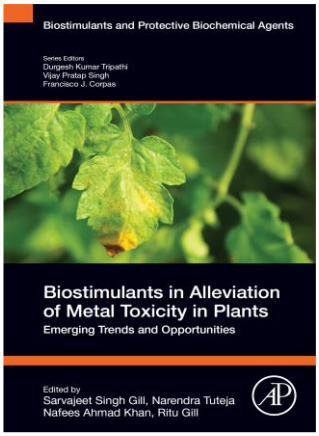
LIST OF PUBLICATIONS

BOOKS PUBLISHED



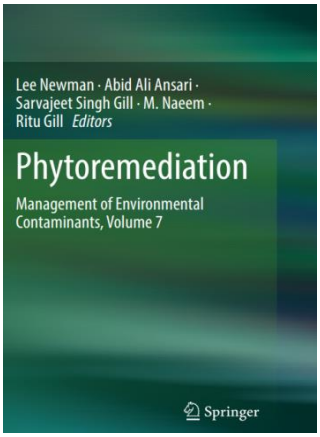
Pudake RN, Tripathi RM, **Gill SS** (2024) Nanotechnology for Abiotic Stress Tolerance and Management in Crop Plants, Academic Press, Elsevier USA, ISBN: 9780443185007 https://shop.elsevier.com/books/nanotechnology-for-abiotic-stress-tolerance-and-management-in-crop-plants/pudake/978-0-443-18500-7

Abiotic stresses such as drought, salinity, temperature stress, excessive water, heavy metal stress, UV stress etc. are major factors which may adversely affect the growth, development, and yield of crops. While recent research for ways of overcoming the physiological and biochemical changes brought on by these stresses has focused on genetic engineering of plants, additional research continues into alternative strategies to develop stress tolerant crops, including the use of nanoscience and nanotechnology.



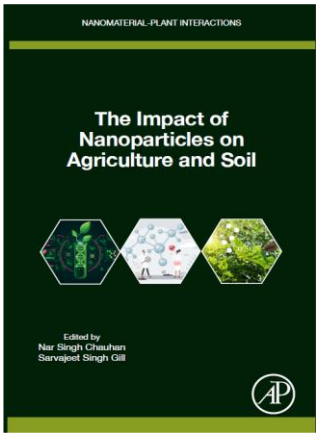
Gill SS, Tuteja N, Khan NA, Gill R (2023) Biostimulants in Alleviation of Metal Toxicity: Emerging Trends and Opportunities, Elsevier, Academic Press, USA, ISBN: 9780323996006
https://doi.org/10.1016/C2021-0-01970-2

Biostimulants in Alleviation of Metal Toxicity in Plants: Emerging Trends and Opportunities focus on the role of substances or micro-organisms whose presence can address issues of metal contamination in soils, seeds and plants. Including a range of biostimulant tools, the book highlights both endogenous and exogenous application. As an additional tool biostimulants have emerged as one of the important plant protectors under adverse conditions. It should meet the needs of all researchers working in, or have an interest in this particular field.



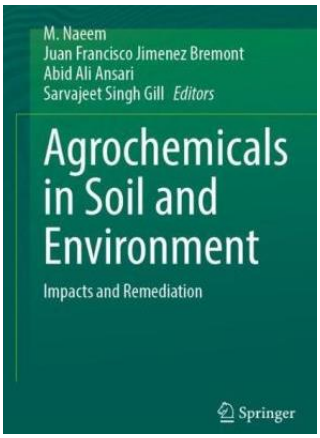
Newman L, Ansari AA, **Gill SS**, Naeem M, Gill R (2023) Phytoremediation: Management of Environmental Contaminants, Volume 7, Springer Science + Business Media, LLC 233 Spring Street, New York, NY 10013, USA ISBN 978-3-031-17987-7 https://link.springer.com/book/10.1007/978-3-031-17988-4

The accumulation of large amounts of contaminants occurs in the environment due to industrialization and various other anthropogenic activities. These contaminants ultimately affect plant, animal, human, and environmental health worldwide. This volume 7 highlights the various prospects that are involved in current global phytoremediation research. This book delivers a content-rich source to the reader and can act as a platform for further studies. It should meet the needs of all researchers working in, or have an interest in this particular field.

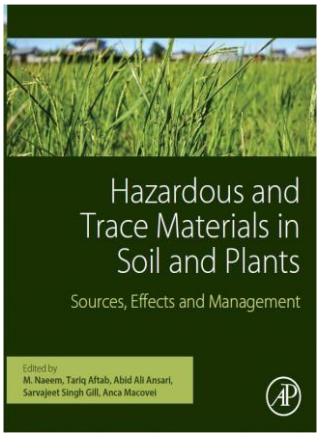


Chauhan NS, **Gill SS** (2023) The Impact of Nanoparticles on Agriculture and Soil. ISBN: 9780323917032 https://www.elsevier.com/books/the-impact-of-nanoparticles-on-agriculture-and-soil/chauhan/978-0-323-91703-2

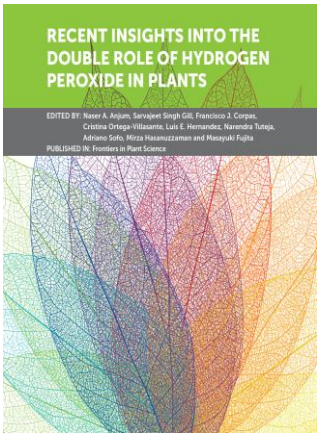
The Impact of Nanoparticles on Agriculture and Soil, part of the Nanomaterials-Plant Interaction series, contributes the most recent insights into understanding the cellular interactions of nanoparticles in an agricultural setting, focusing on current applications and means of evaluating future prospects. With an international team of authors, and experienced editors, The Impact of Nanoparticles on Agriculture and Soil will be valuable to those working to understand and advance nanoscience to benefit agricultural production and human and environmental welfare.



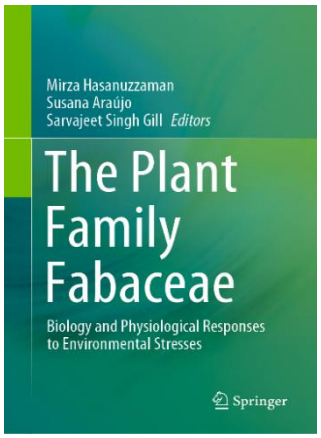
Naeem M, Jimenez Bremont JF, Ansari AA, **Gill SS** (2022) Agrochemicals in Soil and Environment: Impacts and Remediation. ISBN 9789811693090; Springer Nature Singapore
https://link.springer.com/book/10.1007/978-981-16-9310-6
This volume 'Agrochemicals in Soil and Environment: Impacts and Remediation' is a comprehensive collection of important literature on agrochemical contamination. The main focus of this book is to point out undesirable changes in biological, physical and chemical characteristics of agricultural soils and its impacts on global agricultural crop productivity. The book is interest to research students, teachers, agricultural scientists, agronomists, environmentalists as well as policy makers.



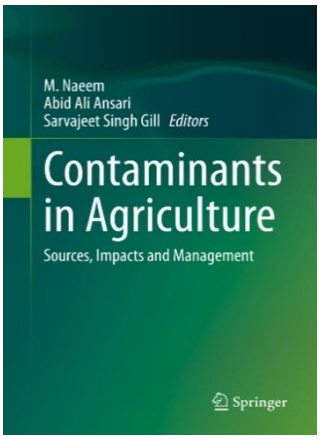
Naeem M, Aftab T, Ansari AA, **Gill SS,** Macovei A (2022) Hazardous and Trace Materials in Soil and Plants: Sources, effects and management, ISBN 9780323916325; Academic Press, Elsevier Inc., USA
https://www.elsevier.com/books/hazardous-and-trace-materials-in-soil-and-plants/naeem/978-0-323-91632-5
Hazardous and Trace Materials in Soil and Plants: Sources, Effects and Management explore the latest advancements in reducing, avoiding and eliminating soil contaminants that challenge the health and safety of agricultural plants. This dual-hazard scenario is increasingly recognized as a threat to not just the environment, but to global food security as agricultural soils contaminated with pollutants alter plant metabolism, thus resulting in reduced crop quality and production quantity.



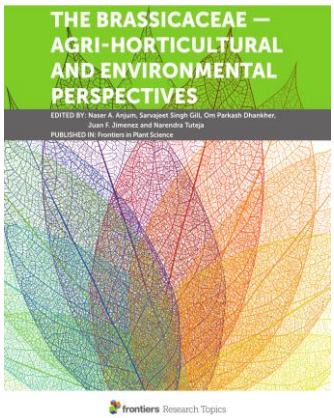
Anjum NA, **Gill SS**, Corpas FJ, Ortega-Villasante C, Hernandez LE, Tuteja N, Sofo A, Hasanuzzaman M, Fujita M (2022) Recent insights into the double role of hydrogen peroxide in plants. ISSN 1664-8714
ISBN 978-2-88974-524-1; Lausanne: Frontiers Media SA
https://www.frontiersin.org/research-topics/3819/recent-insights-into-the-double-role-of-hydrogen-peroxide-in-plants H_2O_2 has been given much attention in rapidly increasing plant research during the last decades. The critical discussions on the major physiological/biochemical and molecular insights into the components governing the double role of H_2O_2 in stressed and non-stressed plants have been complied in this book.



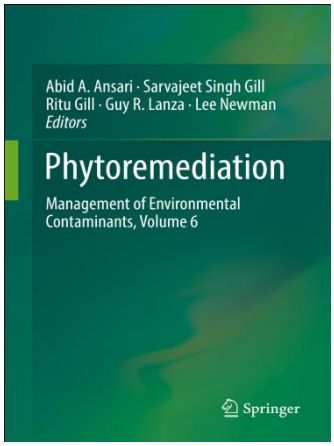
Mirza Hasanuzzaman M, Araújo S, **Gill SS** (2021) The Plant Family Fabaceae: Biology and Physiological Responses to Environmental Stresses. ISBN 978-981-15-4751-5. Springer Nature Singapore Pte Ltd.
https://www.springer.com/gp/book/9789811547515
This book comprehensively introduces all aspects of the physiology, stress responses and tolerance to abiotic stresses of the Fabaceae plants. Among the plant families Fabaceae have special importance for their agri-horticultural importance and multifarious uses apart from the basic needs. Recent advances and developments in molecular and biotechnological tools has contributed to ease and wider this mission. This book provides up-to-date findings that will be of greater use for the students and researchers, particularly Plant Physiologists, Environmental Scientists, Biotechnologists, Botanists, Food Scientists and Agronomists.



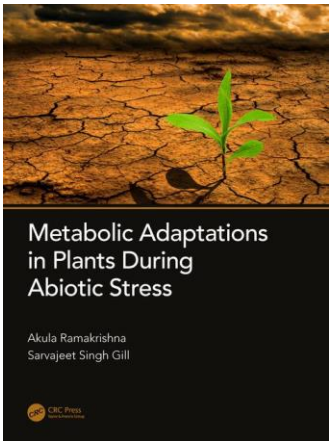
Naeem M, Ansari AA, **Gill SS** (2020) Contaminants in Agriculture: Sources, Impacts and Management. ISBN 978-3-030-41552-5. Springer International Publishing, Switzerland https://www.springer.com/gp/book/9783030415518
This comprehensive volume covers recent studies into agricultural problems caused by soil and water contamination. Considering the importance of agricultural crops to human health, the editors have focused on chapters detailing the negative impact of heavy metals, excessive chemical fertilizer use, nutrients, pesticides, herbicides, insecticides, agricultural wastes and toxic pollutants, among others, on agricultural soil and crops. In addition, the chapters offer solutions to these negative impacts through various scientific approaches, including using biotechnology, nanotechnology, nutrient management strategies, biofertilizers, as well as potent PGRs and elicitors.



Anjum NA, **Gill SS**, Dhankher OP, Jiminez JF, Tuteja N (2018) The Brassicaceae-Agri-Horticultural and Environmental Perspectives. Lausanne: Frontiers Media SA. ISSN 1664-8714, ISBN 978-2-88945-645-1, DOI 10.3389/978-2-88945-645-1
https://www.frontiersin.org/research-topics/3959/the-brassicaceae---agri-horticultural-and-environmental-perspectives This e-book is an effort to provide a common platform to agronomists, horticulturists, plant breeders, plant geneticists/molecular biologists, plant physiologists and environmental plant scientists exploring major insights into the role of important members of the plant family Brassicaceae (the mustard family, or Cruciferae) in agri-horticultural and environmental arenas.

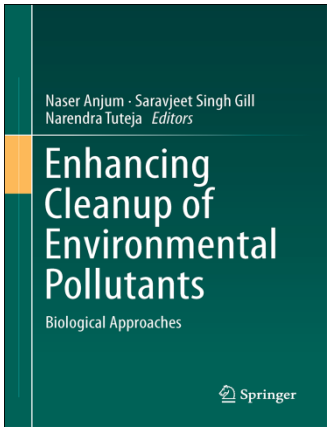


Ansari AA, **Gill SS**, Lanza GR, Newman L (2018) Phytoremediation Management of Environmental Contaminants, Volume 6. Springer Science + Business Media, LLC 233 Spring Street, New York, NY 10013, USA ISBN 978-3-319-99651-6
https://www.springer.com/us/book/9783319996509
Volume 6 of Phytoremediation: Management of Environmental Contaminants continues the series. Taken together, the six volumes provide a broad–based global synopsis of the current applications of phytoremediation using plants and the microbial communities associated with their roots to decontaminate terrestrial and aquatic ecosystems. Many chapters highlight and compare the efficiency and economic advantages of phytoremediation and nano-phytoremediation to currently practiced soil and water treatment practices

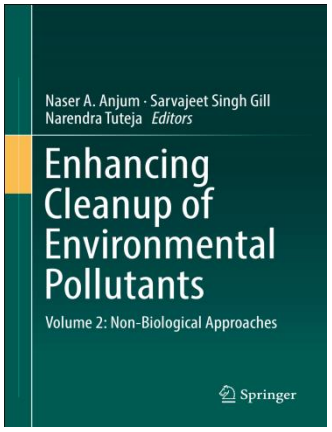


Ramakrishna A, **Gill SS** (2018) Metabolic Adaptations in Plants During Abiotic Stress, 1st Edition. CRC Press ISBN 9781138056381 - CAT# K33263 https://www.crcpress.com/Metabolic-Adaptations-in-Plants-During-Abiotic-Stress/Ramakrishna-Gill/p/book/9781138056381
Serves as a cutting-edge resource for researchers and students who are studying plant abiotic stress tolerance and crop improvement through metabolic adaptations Presents the latest trends and developments in the field of metabolic engineering and abiotic stress tolerance. Addresses the adaptation of plants to climatic changes. Gives special attention to emerging topics such as the role of secondary metabolites, small RNA mediated regulation and signaling molecule responses to stresses. Provides extensive references that serve as entry points for further research.

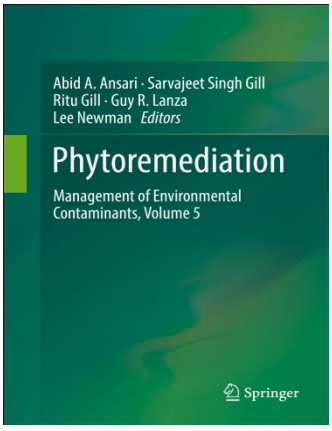
Prasad R, **Gill SS**, Tuteja N (2018) Crop Improvement through Microbial Biotechnology. Elsevier B.V. USA ISBN: 978-0-444-63987-5
https://www.sciencedirect.com/science/book/9780444639875
Crop Improvement through Microbial Biotechnology explains how certain techniques can be used to manipulate plant growth and development, focusing on the cross-kingdom transfer of genes to incorporate novel phenotypes in plants, including the utilization of microbes at every step, from cloning and characterization, to the production of a genetically engineered plant. This book covers microbial biotechnology in sustainable agriculture, aiming to improve crop productivity under stress conditions.



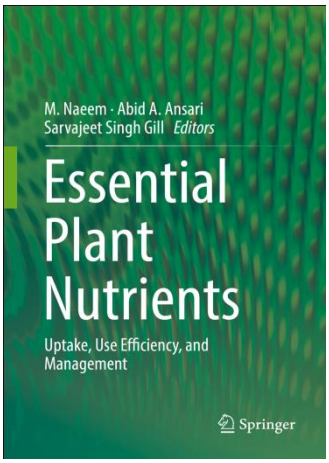
Anjum NA, **Gill SS**, Tuteja N (2017) Enhancing Cleanup of Environmental Pollutants: Volume 1: Biological Approaches. Springer International Publishing AG, ISBN: 978-3-319-55425-9
https://www.springer.com/gp/book/9783319554228
Volume 1 focuses on important concepts such as biological remediation strategies to enhance soil quality at contaminated sites; synergistic influences of tolerant plants and rhizospheric microbial strains on the remediation of pesticide contaminated soil, and the role of plant types such as hyperaccumulator plants in the cleanup of polluted soils. Readers will discover mechanisms and underlying natural inherent traits of various plants and microbes for tolerating, excluding, remediating, accumulating, or metabolizing a variety of pollutants.



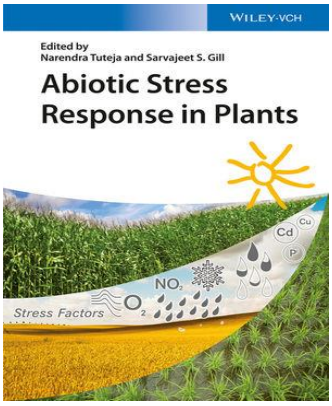
Anjum NA, **Gill SS**, Tuteja N (2017) Enhancing Cleanup of Environmental Pollutants: Volume 2: Non-Biological Approaches. Springer International Publishing AG, ISBN: 978-3-319-55422-8
https://www.springer.com/in/book/9783319554228
Volume 2 focuses on the non-biological/chemical approaches for the cleanup of contaminated soils. Important concepts such as the role of metallic iron in the decontamination of hexavalent chromium polluted waters are highlighted; in addition, nanoscale materials and electrochemical approaches used in water and soil remediation are discussed; and the synthesis and characterization of cation composite exchange material and its application in removing toxic metals are elaborated in detail. Readers will also discover the major advances in the remediation of environmental pollutants by adsorption technologies.



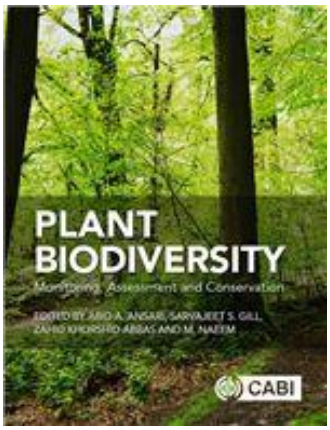
Ansari AA, **Gill SS**, Lanza GR, Newman L (2017) Phytoremediation Management of Environmental Contaminants, Volume 5. Springer Science + Business Media, LLC 233 Spring Street, New York ISBN 978-3-319-52381-1
http://www.springer.com/gp/book/9783319523798
This text details the plant-assisted remediation method, “phytoremediation”, which involves the interaction of plant roots and associated rhizospheric microorganisms for the remediation of soil contaminated with high levels of metals, pesticides, solvents, radionuclides, explosives, crude oil, organic compounds and various other contaminants. Many chapters highlight and compare the efficiency and economic advantages of phytoremediation to currently practiced soil and water treatment practices.



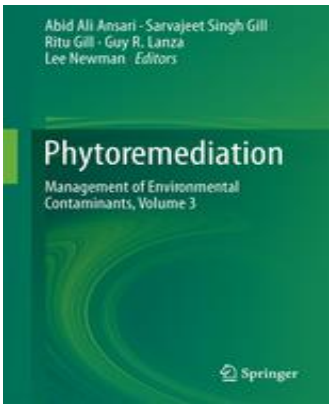
Naeem M, Ansari AA, **Gill SS** (2017) Essential Plant Nutrients: Uptake, Use Efficiency, and Management. Springer Science + Business Media, LLC 233 Spring Street, New York ISBN: 978-3-319-58840-7
https://www.springer.com/in/book/9783319588407
This book explores the agricultural, commercial, and ecological future of plants in relation to mineral nutrition. It covers various topics regarding the role and importance of mineral nutrition in plants including essentiality, availability, applications, as well as their management and control strategies. Plants and plant products are increasingly important sources for the production of energy, biofuels, and biopolymers in order to replace the use of fossil fuels. This book will serve not only as an excellent reference material but also as a practical guide for readers, cultivators, students, botanists, entrepreneurs, and farmers.



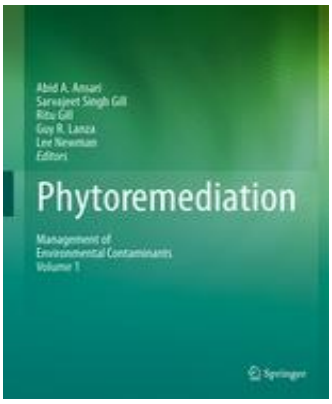
Tuteja N, **Gill SS** (2016) *Abiotic Stress Response in Plants*, Wiley Wiley-VCH Verlag GmbH & Co. Weinheim, Germany ISBN 978-3-527-33918-1
http://as.wiley.com/WileyCDA/WileyTitle/productCd-3527339183.html
Understanding abiotic stress responses in plants is critical for the development of new varieties of crops, which are better adapted to harsh climate conditions. The new book by the well-known editor team Narendra Tuteja and Sarvajeet Gill provides a comprehensive overview on the molecular basis of plant responses to external stress like drought or heavy metals, to aid in the engineering of stress resistant crops.
After a general introduction into the topic, the following sections deal with specific signaling pathways mediating plant stress response. The last part covers translational plant physiology, describing several examples of the development of more stress-resistant crop varieties.



Ansari AA, **Gill SS**, Naeem M (2016) Plant Biodiversity: Monitoring, Assessment and Conservation. CABI International, UK ISBN: 9781780646947
https://www.cabi.org/bookshop/book/9781780646947
This book presents a series of essays on the application of plant biodiversity monitoring and assessment to help prevent species extinction, ecosystem collapse, and solve problems in biodiversity conservation. It has been written by a large international team of researchers and uses case studies and examples from all over the world, and from a broad range of terrestrial and aquatic ecosystems.
The book is aimed at any graduate students and researchers with a strong interest in plant biodiversity monitoring and assessment, plant community ecology, biodiversity conservation, and the environmental impacts of human activities on ecosystems.

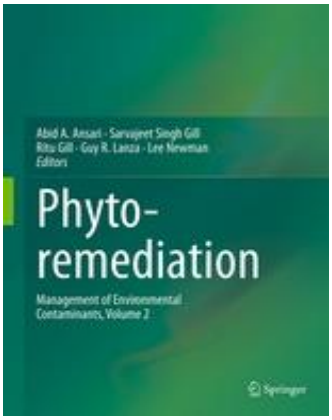


Ansari AA, **Gill SS,** Lanza GR, Gill R, Newman L (2016) ***Phytoremediation Management of Environmental Contaminants***, **Volume 4**. Springer Science + Business Media, LLC 233 Spring Street, New York, NY 10013, USA ISBN 978-3-319-41811-7
https://link.springer.com/book/10.1007/978-3-319-41811-7
This book details the plant-assisted remediation method, "phytoremediation", which involves the interaction of plant roots and associated rhizospheric microorganisms for the remediation of soil contaminated with high levels of metals, pesticides, solvents, radionuclides, explosives, crude oil, organic compounds and various other contaminants. Each chapter highlights and compares the beneficial and economical alternatives of phytoremediation to currently practiced soil removal and burial practices.



Ansari AA, **Gill SS,** Gill R, Lanza GR, Newman L (2015) ***Phytoremediation Management of Environmental Contaminants***, **Volume 3**. Springer Science + Business Media, LLC 233 Spring Street, New York, NY 10013, USA ISBN: 978-3-319-40148-5 http://www.springer.com/in/book/9783319109688

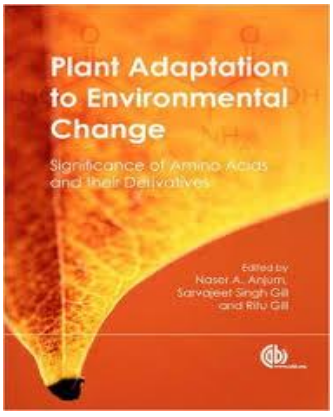
This book covers state of the art approaches in Phytoremediation written by leading and eminent scientists from around the globe. Phytoremediation: Management of Environmental Contaminants, Volume 1 supplies its readers with a multidisciplinary understanding in the principal and practical approaches of phytoremediation from laboratory research to field application.



Ansari AA, **Gill SS,** Gill R, Lanza GR, Newman L (2015) ***Phytoremediation Management of Environmental Contaminants***, **Volume 2**. Springer Science + Business Media, LLC 233 Spring Street, New York, NY 10013, USA ISBN: 978-3-319-37704-9

https://link.springer.com/book/10.1007/978-3-319-10969-5

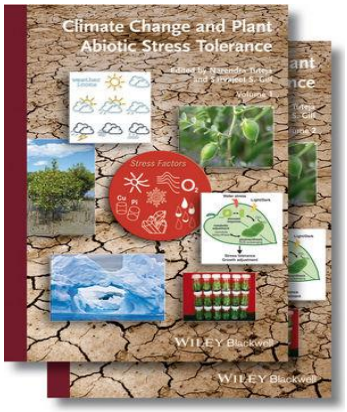
This text details the plant-assisted remediation method, "phytoremediation", which involves the interaction of plant roots and associated rhizospheric microorganisms for the remediation of soil contaminated with high levels of metals, pesticides, solvents, radionuclides, explosives, crude oil, organic compounds and various other contaminants. Each chapter highlights and compares the beneficial and economical alternatives of phytoremediation.



Anjum NA, **Gill SS**, Gill R (2014) ***Plant Adaptation to environmental Change: Significance of Amino Acids and their derivative*****.** CABI International, UK ISBN: 9781780642734

http://www.cabi.org/bookshop/book/9781780642734

Plants constantly cope with unfavourable ecosystem conditions, which often prevent them reaching their full genetic potential in terms of growth, development and productivity. This book covers plants' responses to these environmental changes, namely, the modulation of amino acids, peptides and amines to combat both biotic and abiotic stress factors. Bringing together the most recent developments, this book is an important resource for researchers and students of crop stress and plant physiology.

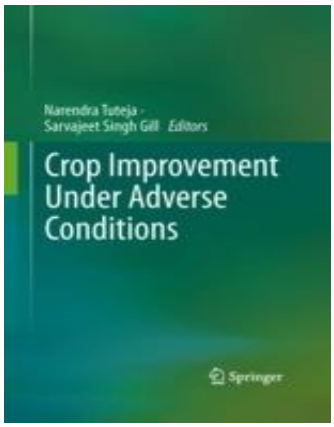


Tuteja N, **Gill SS** (2013) ***Climate Change and Plant Abiotic Stress Tolerance*** **(Volume 1 & 2).** Wiley Wiley-VCH Verlag GmbH & Co. Weinheim, Germany ISBN 978-3-527-33491-9

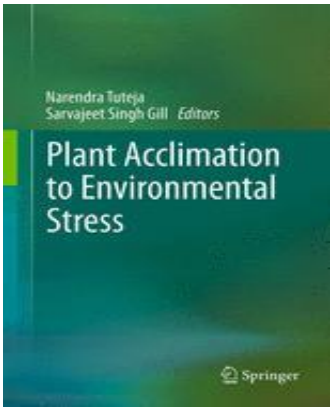
http://as.wiley.com/WileyCDA/WileyTitle/productCd-3527334912.html

In this ready reference, a global team of experts comprehensively cover molecular and cell biology-based approaches to the impact of increasing global temperatures on crop productivity.

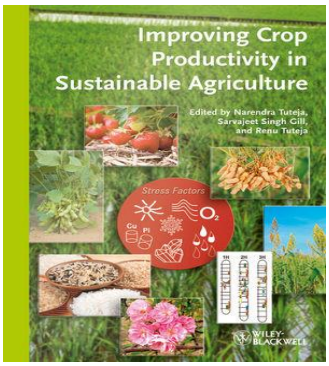
The work is divided into four parts. Following an introduction to the general challenges for agriculture around the globe due to climate change, part two discusses how the resulting increase of abiotic stress factors can be dealt with.



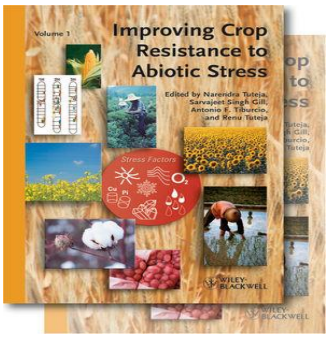
Tuteja N, **Gill SS** (2013) ***Crop Improvement under Adverse Conditions.*** Springer Science + Business Media, LLC 233 Spring Street, New York, NY 10013, USA ISBN 978-1-4614-4632-3 http://www.springer.com/la/book/9781461446323
Crop Improvement under Adverse Conditions will serve as a cutting-edge resource for researchers and students alike who are studying plant abiotic stress tolerance and crop improvement. The book presents the latest trends and developments in the field, including the impact of extreme events on salt tolerant forest species of Andaman & Nicobar Islands, the overlapping horizons of salicylic acid in different stresses, and fast and reliable approaches to crop improvement through In Vitro haploid production.



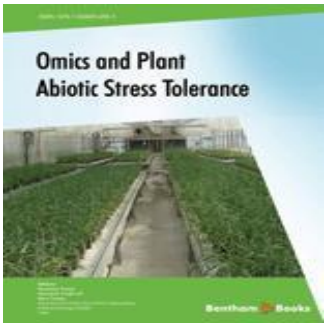
Tuteja N, **Gill SS** (2013) ***Plant Acclimation to Abiotic Stress.*** Springer Science + Business Media, New York, NY 10013, USA ISBN 978-1-4614-5000-9
http://link.springer.com/book/10.1007%2F978-1-4614-5001-6
The mechanisms underlying endurance and adaptation to environmental stress factors in plants have long been the focus of intense research. Plants overcome environmental stresses by development of tolerance, resistance or avoidance mechanisms, adjusting to a gradual change in its environment which allows them to maintain performance across a range of adverse environmental conditions. Plant Acclimation to Environmental Stress presents the latest ideas and trends on induced acclimation of plants to environmental stresses under changing environment. Written by experts around the globe, this volume adds new dimensions in the field of plant acclimation to abiotic stress factors. Comprehensive and lavishly illustrated.



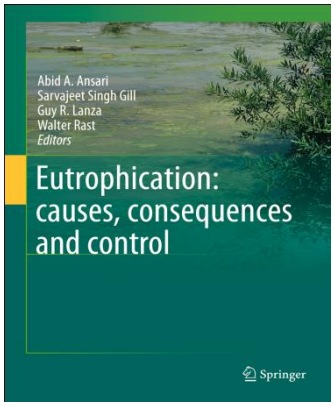
Tuteja N, **Gill SS**, Tuteja R (2013) ***Improving Crop Productivity in Sustainable Agriculture*****.** Wiley Wiley-VCH Verlag GmbH & Co. Weinheim, Germany ISBN: 978-3-527-33242-7
http://as.wiley.com/WileyCDA/WileyTitle/productCd-3527332421.html
An up-to-date overview of current progress in improving crop quality and quantity using modern methods. With a particular emphasis on genetic engineering, this text focuses on crop improvement under adverse conditions, paying special attention to such staple crops as rice, maize, and pulses. It includes an excellent mix of specific examples, such as the creation of nutritionally-fortified rice and a discussion of the political and economic implications of genetically engineered food.



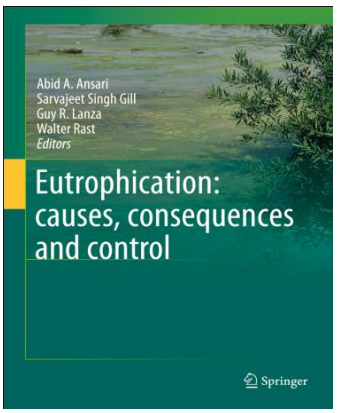
Tuteja N, **Gill SS**, Tiburcio AF, Tuteja R (2011) ***Improving Crop Resistance to Abiotic Stress*** (Vol I & II). Wiley Wiley-VCH Verlag GmbH & Co. Weinheim, Germany ISBN: 978-3-527-32840-6
http://as.wiley.com/WileyCDA/WileyTitle/productCd-3527328408.html
The latest update on improving crop resistance to abiotic stress using the advanced key methods of proteomics, genomics and metabolomics. The well balanced international mix of contributors from industry and academia cover work carried out on individual crop plants, while also including studies of model organisms that can then be applied to specific crop plants.



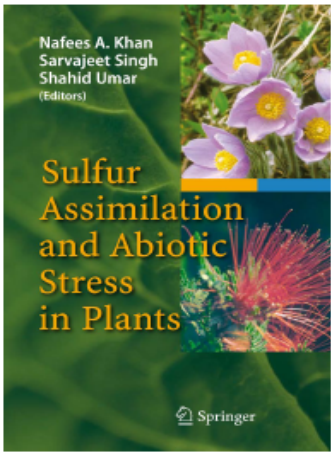
Tuteja N, **Gill SS**, Tuteja R (2011) ***Omics and Plant Abiotic Stress Tolerance*****.** Bentham Science Publishers, UAE & USA eISBN: 978-1-60805-058-1
http://ebooks.benthamscience.com/book/9781608050581/
The text in this book deals with the importance of -omics approaches like Genomics, Metabolomics and Proteomics in abiotic stress tolerance. Large scale analytical approaches provide detailed information about the structure and complexity of signaling networks, identify subsets of genes or activities that are correlated to given stress factors and reveal unexpected or previously uncharacterized biochemical interactions.



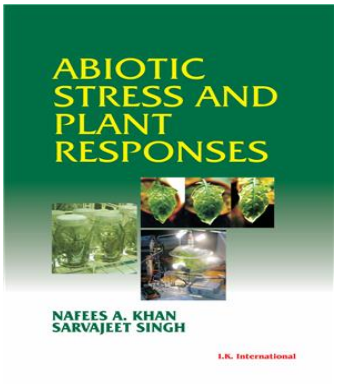
Ansari AA, **Gill SS**, Lanza GR, Rast W (2011) Eutrophication: causes, consequences and control. Vol. 1. ISBN: 978-90-481-9624-1
https://www.springer.com/in/book/9789048196241
Eutrophication continues to be a major global challenge to water quality scientists. The global demand on water resources due to population increases, economic development, and emerging energy development schemes has created new environmental challenges to global sustainability. Eutrophication, causes, consequences, and control provides a current account of many important aspects of the processes of natural and accelerated eutrophication in major aquatic ecosystems around the world. The connections between accelerated eutrophication and climate change, chemical contamination of surface waters, and major environmental.



Ansari AA, **Gill SS**, Lanza GR, Rast W (2011) Eutrophication: causes, consequences and control. Vol. 2. ISBN: 978-94-007-7813-9
https://www.springer.com/in/book/9789400778139 This book offers a cutting-edge resource for researchers and students alike who are studying eutrophication in various ecosystems. It presents the latest trends and developments in the field, including: global scenarios and local threats to the dynamics of aquatic ecosystems, economics of eutrophication, eutrophication in the great lakes of the Chinese pacific drainage basin, photoautotrophic productivity in eutrophic ecosystems, eutrophication's impacts on natural metal remediation in salt marshes, phytoplankton assemblages as an indicator of water quality in seven temperate estuarine lakes in southeast Australia, biogeochemical indicators of nutrient enrichments in wetlands.



Khan NA, **Singh S** and Umar S (2008) ***Sulfur Assimilation and Abiotic Stress in Plants.*** Springer-Verlag, New York ISBN 978-3-540-76325-3
http://link.springer.com/book/10.1007%2F978-3-540-76326-0
Sulfur is one of the four major essential elements necessary for the plant life cycle. Its assimilation in higher plants and its reduction in metabolically important sulfur compounds are crucial factors determining plant growth and vigor and resistance to stresses. The range of biological compounds that contain sulfur is wide. The information on sulfur assimilation can be exploited in tailoring for efficient sulfur utilization, and in the applied approaches for the sustenance of agricultural productivity through nutritional improvement and increased stress tolerance. The present book discusses the aspects of sustainable crop production with sulfur, the importance of sulfur metabolites and sulfur metabolizing enzymes in abiotic stress management in plants.



Khan NA and **Singh S** (2008) ***Abiotic Stress and Plant Responses*.** IK. International Publishing House, New Delhi, India ISBN: 978-818-986695-2
https://www.ikbooks.com/books/book/life-sciences/botany/abiotic-stress-plant-responses/9788189866952/
In this present book the advances in the area of abiotic stress responses and stress management have been included. The information may be useful in elucidating limits and tolerance of a plant to abiotic stress.
The present volume, comprising seventeen chapters by outstanding and eminent specialists across the world, covers the information on abiotic stresses such as salinity, heavy metals, drought and herbicides.

RESEARCH PUBLICATION (Selected)

Research Matrix

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Citations	25860
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i10 index	119

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h-index	53
Research Interest Score	13,475
Citations	22,783

Scopus (https://orcid.org/0000-0002-8953-7714)

Citations	16761
h-index	43

HIGHLY CITED ARTICLES

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Verified email at mdurohtak.ac.in - Homepage

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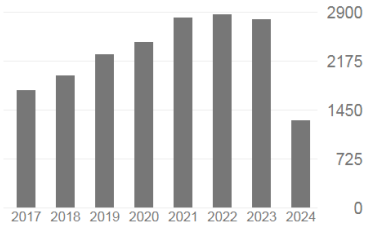
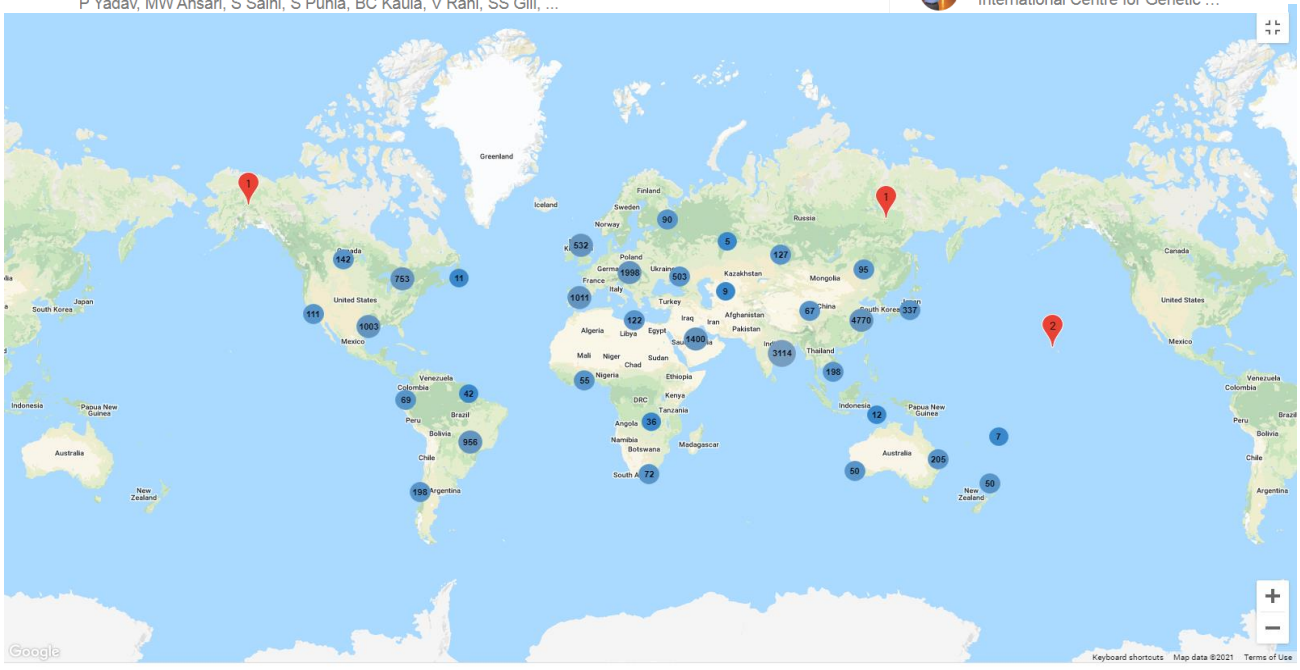
h-index	54	46
i10-index	112	103



TITLE	CITED BY	YEAR
Salicylic acid: Homeostasis, signalling and phytohormone crosstalk in plants under environmental challenges A Ali, K Kant, N Kaur, S Gupta, P Jindal, SS Gill, M Naeem South African Journal of Botany 169, 314-335		2024
Nano-Biotechnology in Growth Promotion and Abiotic Stress Tolerance SS Gill, R Gill, JK Nagar, F Ahmed, N Tuteja Plant Nano Biology, 100078		2024
Review and future prospects on the impact of abiotic stresses and tolerance strategies in medicinal and aromatic plants P Yadav, MW Ansari, S Saini, S Punia, BC Kaula, V Rani, SS Gill, ...		2024

Co-authors EDIT

Narendra Tuteja
International Centre for Genetic ...



1. Yadav S, Kalwan G, **Gill SS**, Jain PK (2024) Epigenetic regulation of ABC transporters in chickpea (*Cicer arietinum*) under drought stress. Plant Physiology and Biochemistry (Communicated)
2. Raza A, Khare T, Rahman MM, Hussain M, **Gill SS**, Chen Z-H, Zhou M, Hu Z, Varshney RK (2024) Novel strategies for designing climate-smart crops to ensure sustainable agriculture and future food security. Journal of Sustainable Agriculture and Environment (Accepted)
3. Kaur G, Singh P, Kaushik S, Madaan I, Vyas A, **Gill SS**, Sirhindi G (2024) Endophyte-mediated reinforcement of morpho-physiology of *Brassica juncea* under cadmium toxicity. Indian Journal of Microbiology https://doi.org/10.1007/s12088-024-01375-7 **(SCI IF: 2.1)**
4. Singla, A, Nehra A, Joshi K, Kumar A, Tuteja N, Varshney RK, **Gill SS**, Gill R (2024). Exploration of Machine Learning Approaches for Automated Crop Disease Detection. Current Plant Biology, 100382–100382. https://doi.org/10.1016/j.cpb.2024.100382
5. Aqeel U, Aftab T, Khan MMA, **Gill SS**, Naeem M (2024) Silicon dioxide nanoparticles as catalysts for improved growth, enzymatic activities and essential oil production in *Mentha arvensis* L. South African Journal of Botany 172: 161-174. https://doi.org/10.1016/j.sajb.2024.06.044 **(SCI IF: 2.7)**
6. **Gill SS**, Khan NA, Agarwala N, Singh K, Sunkar R, Tuteja N (2024) ncRNAs in plant development and stress responses. Plant Phyiology and Biochemistry 214: 108950. https://doi.org/10.1016/j.plaphy.2024.108950 **(SCI IF: 6.1)**
7. Ali A, Kant K, Kaur N, Gupta S, Jindal P, **Gill SS**, Naeem M (2024) Salicylic acid: Homeostasis, signalling and phytohormone crosstalk in plants under environmental challenges. South African Journal of Botany 169: 314-335. https://doi.org/10.1016/j.sajb.2024.04.012 **(SCI IF: 2.7)**
8. Yadav P, Ansari MW, Gill R, Tuteja N **Gill SS** (2024) Arsenic transport, detoxification, and recent technologies for mitigation: a systemic review. Plant Phyiology and Biochemistry 108848 https://doi.org/10.1016/j.plaphy.2024.108848 **(SCI IF: 6.1)**
9. **Gill SS**, Gill R, Nagar JK, Ahmed F, Tuteja N (2024) Nano-biotechnology in growth promotion and abiotic stress tolerance. Plant Nano Biology 8:100078 https://doi.org/10.1016/j.plana.2024.100078
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2023 - till date, Coordinator R&D, Life Sciences, MD University, Rohtak
2020 - June 2023, Dy Advisor (Horticulture), MD University, Rohtak
2020 - till date, Nodal Officer, Study in India Program of MHRD, Govt. of India
2019 - 2023, Deputy Advisor (Foreign Cell), MD University, Rohtak
2019 - till date, Faculty Coordinator, CCPC, MD University, Rohtak
2018 - till date, Project Co-ordination, Zero Budget Agriculture, MDU, Rohtak
2018 - Member- Research Promotion Policy
2017 - till date, Member-Central Instrumentation Facility
2016 - 2018: Vice President, Faculty Club, MDU, Rohtak
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