Rupesh K Deshmukh

List of Publications by Year
in descending order

129 papers	6,444 citations	61945 43 h-index	79644 73 g-index
145 all docs	145 docs citations	145 times ranked	5462 citing authors

#	Article	IF	Citations
1	The controversies of silicon's role in plant biology. New Phytologist, 2019, 221, 67-85.	3.5	439
2	Role of Silicon in Mitigation of Heavy Metal Stresses in Crop Plants. Plants, 2019, 8, 71.	1.6	256
3	Identification and functional characterization of silicon transporters in soybean using comparative genomics of major intrinsic proteins in Arabidopsis and rice. Plant Molecular Biology, 2013, 83, 303-315.	2.0	233
4	Integrating omic approaches for abiotic stress tolerance in soybean. Frontiers in Plant Science, 2014, 5, 244.	1.7	213
5	A precise spacing between the <scp>NPA</scp> domains of aquaporins is essential for silicon permeability in plants. Plant Journal, 2015, 83, 489-500.	2.8	191
6	Genome-Wide Distribution and Organization of Microsatellites in Plants: An Insight into Marker Development in Brachypodium. PLoS ONE, 2011, 6, e21298.	1.1	184
7	Soybean (Glycine max) SWEET gene family: insights through comparative genomics, transcriptome profiling and whole genome re-sequence analysis. BMC Genomics, 2015, 16, 520.	1.2	173
8	Role of silicon in plant stress tolerance: opportunities to achieve a sustainable cropping system. 3 Biotech, 2019, 9, 73.	1.1	156
9	Molecular evolution of aquaporins and silicon influx in plants. Functional Ecology, 2016, 30, 1277-1285.	1.7	149
10	Revisiting the role of ROS and RNS in plants under changing environment. Environmental and Experimental Botany, 2019, 161, 1-3.	2.0	136
11	Transcription factors as key molecular target to strengthen the drought stress tolerance in plants. Physiologia Plantarum, 2021, 172, 847-868.	2.6	131
12	Significance of silicon uptake, transport, and deposition in plants. Journal of Experimental Botany, 2020, 71, 6703-6718.	2.4	126
13	Computational Prediction of Effector Proteins in Fungi: Opportunities and Challenges. Frontiers in Plant Science, 2016, 7, 126.	1.7	118
14	Identification and Comparative Analysis of Differential Gene Expression in Soybean Leaf Tissue under Drought and Flooding Stress Revealed by RNA-Seq. Frontiers in Plant Science, 2016, 7, 1044.	1.7	116
15	Genome Editing in Plants: Exploration of Technological Advancements and Challenges. Cells, 2019, 8, 1386.	1.8	115
16	Genetic architecture of cyst nematode resistance revealed by genome-wide association study in soybean. BMC Genomics, 2015, 16, 593.	1.2	111
17	Expanding Omics Resources for Improvement of Soybean Seed Composition Traits. Frontiers in Plant Science, 2015, 6, 1021.	1.7	105
18	Highly variable SSR markers suitable for rice genotyping using agarose gels. Molecular Breeding, 2010, 25, 359-364.	1.0	96

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19	Nitric oxide and hydrogen sulfide crosstalk during heavy metal stress in plants. Physiologia Plantarum, 2020, 168, 437-455.	2.6	94
20	Dissecting genomic hotspots underlying seed protein, oil, and sucrose content in an interspecific mapping population of soybean using highâ€density linkage mapping. Plant Biotechnology Journal, 2018, 16, 1939-1953.	4.1	93
21	Aquaporins as potential drought tolerance inducing proteins: Towards instigating stress tolerance. Journal of Proteomics, 2017, 169, 233-238.	1.2	92
22	Highâ€density genetic map using wholeâ€genome resequencing for fine mapping and candidate gene discovery for disease resistance in peanut. Plant Biotechnology Journal, 2018, 16, 1954-1967.	4.1	90
23	Analysis of aquaporins in Brassicaceae species reveals high-level of conservation and dynamic role against biotic and abiotic stress in canola. Scientific Reports, 2017, 7, 2771.	1.6	84
24	Genome-wide identification, characterization, and expression profile of aquaporin gene family in flax (Linum usitatissimum). Scientific Reports, 2017, 7, 46137.	1.6	82
25	Genome Editing in Cereals: Approaches, Applications and Challenges. International Journal of Molecular Sciences, 2020, 21, 4040.	1.8	82
26	Silicon protects soybean plants against Phytophthora sojae by interfering with effector-receptor expression. BMC Plant Biology, 2018, 18, 97.	1.6	80
27	Genomic-assisted phylogenetic analysis and marker development for next generation soybean cyst nematode resistance breeding. Plant Science, 2016, 242, 342-350.	1.7	78
28	New evidence defining the evolutionary path of aquaporins regulating silicon uptake in land plants. Journal of Experimental Botany, 2020, 71, 6775-6788.	2.4	78
29	Plant Aquaporins: Genome-Wide Identification, Transcriptomics, Proteomics, and Advanced Analytical Tools. Frontiers in Plant Science, 2016, 7, 1896.	1.7	76
30	Versatile roles of aquaporin in physiological processes and stress tolerance in plants. Plant Physiology and Biochemistry, 2020, 149, 178-189.	2.8	76
31	Identification of Novel QTL Governing Root Architectural Traits in an Interspecific Soybean Population. PLoS ONE, 2015, 10, e0120490.	1.1	75
32	Editorial: Role of Silicon in Plants. Frontiers in Plant Science, 2017, 8, 1858.	1.7	74
33	Identification and characterization of silicon efflux transporters in horsetail (Equisetum arvense). Journal of Plant Physiology, 2016, 200, 82-89.	1.6	73
34	Aluminum toxicity and aluminum stress-induced physiological tolerance responses in higher plants. Critical Reviews in Biotechnology, 2021, 41, 715-730.	5.1	73
35	Fascinating role of silicon to combat salinity stress in plants: An updated overview. Plant Physiology and Biochemistry, 2021, 162, 110-123.	2.8	70
36	Advances in Omics Approaches for Abiotic Stress Tolerance in Tomato. Biology, 2019, 8, 90.	1.3	68

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37	Mutation Breeding in Tomato: Advances, Applicability and Challenges. Plants, 2019, 8, 128.	1.6	65
38	Silicon Transporters and Effects of Silicon Amendments in Strawberry under High Tunnel and Field Conditions. Frontiers in Plant Science, 2017, 8, 949.	1.7	64
39	Comparative Transcriptomic Analysis of Virulence Factors in Leptosphaeria maculans during Compatible and Incompatible Interactions with Canola. Frontiers in Plant Science, 2016, 7, 1784.	1.7	60
40	Silicon crosstalk with reactive oxygen species, phytohormones and other signaling molecules. Journal of Hazardous Materials, 2021, 408, 124820.	6.5	55
41	Genomic resources in horticultural crops: Status, utility and challenges. Biotechnology Advances, 2011, 29, 199-209.	6.0	54
42	Identification of candidate genes for grain number in rice (Oryza sativa L.). Functional and Integrative Genomics, 2010, 10, 339-347.	1.4	53
43	Avenues of the membrane transport system in adaptation of plants to abiotic stresses. Critical Reviews in Biotechnology, 2019, 39, 861-883.	5.1	53
44	Silicon nanoparticles (SiNPs) in sustainable agriculture: major emphasis on the practicality, efficacy and concerns. Nanoscale Advances, 2021, 3, 4019-4028.	2.2	50
45	Effector Biology of Biotrophic Plant Fungal Pathogens: Current Advances and Future Prospects. Microbiological Research, 2020, 241, 126567.	2.5	46
46	Identification of a mammalian silicon transporter. American Journal of Physiology - Cell Physiology, 2017, 312, C550-C561.	2.1	45
47	Mutagenesis Approaches and Their Role in Crop Improvement. Plants, 2019, 8, 467.	1.6	42
48	Identification of the aquaporin gene family in Cannabis sativa and evidence for the accumulation of silicon in its tissues. Plant Science, 2019, 287, 110167.	1.7	41
49	Whole Genome Characterization of a Few EMS-Induced Mutants of Upland Rice Variety Nagina 22 Reveals a Staggeringly High Frequency of SNPs Which Show High Phenotypic Plasticity Towards the Wild-Type. Frontiers in Plant Science, 2018, 9, 1179.	1.7	40
50	Silicon Uptake and Localisation in Date Palm (Phoenix dactylifera) â€“ A Unique Association With Sclerenchyma. Frontiers in Plant Science, 2019, 10, 988.	1.7	37
51	Expanding Avenue of Fast Neutron Mediated Mutagenesis for Crop Improvement. Plants, 2019, 8, 164.	1.6	37
52	Exploration of silicate solubilizing bacteria for sustainable agriculture and silicon biogeochemical cycle. Plant Physiology and Biochemistry, 2021, 166, 827-838.	2.8	36
53	Molecular characterization and expression dynamics of MTP genes under various spatio-temporal stages and metal stress conditions in rice. PLoS ONE, 2019, 14, e0217360.	1.1	34
54	Tweaking genome-editing approaches for virus interference in crop plants. Plant Physiology and Biochemistry, 2020, 147, 242-250.	2.8	34

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55	Unexplored nutritive potential of tomato to combat global malnutrition. Critical Reviews in Food Science and Nutrition, 2022, 62, 1003-1034.	5.4	34
56	Blast resistance in Indian rice landraces: Genetic dissection by gene specific markers. PLoS ONE, 2019, 14, e0211061.	1.1	33
57	Harnessing High-throughput Phenotyping and Genotyping for Enhanced Drought Tolerance in Crop Plants. Journal of Biotechnology, 2020, 324, 248-260.	1.9	32
58	Understanding the Dynamics of Blast Resistance in Rice-Magnaporthe oryzae Interactions. Journal of Fungi (Basel, Switzerland), 2022, 8, 584.	1.5	32
59	Identification and characterization of aquaporin genes in Arachis duranensis and Arachis ipaensis genomes, the diploid progenitors of peanut. BMC Genomics, 2019, 20, 222.	1.2	31
60	Sugar transporters and their molecular tradeoffs during abiotic stress responses in plants. Physiologia Plantarum, 2022, 174, e13652.	2.6	31
61	Soybean TIP Gene Family Analysis and Characterization of GmTIP1;5 and GmTIP2;5 Water Transport Activity. Frontiers in Plant Science, 2016, 7, 1564.	1.7	30
62	Applications and challenges for efficient exploration of omics interventions for the enhancement of nutritional quality in rice (<i>Oryza sativa</i>L.). Critical Reviews in Food Science and Nutrition, 2020, 60, 3304-3320.	5.4	29
63	Outstanding Questions on the Beneficial Role of Silicon in Crop Plants. Plant and Cell Physiology, 2022, 63, 4-18.	1.5	29
64	Editorial: Aquaporins: Dynamic Role and Regulation. Frontiers in Plant Science, 2017, 8, 1420.	1.7	28
65	Intron gain, a dominant evolutionary process supporting high levels of gene expression in rice. Journal of Plant Biochemistry and Biotechnology, 2016, 25, 142-146.	0.9	27
66	Role of silicon under contrasting biotic and abiotic stress conditions provides benefits for climate smart cropping. Environmental and Experimental Botany, 2021, 189, 104545.	2.0	27
67	Molecular and Morpho-Agronomical Characterization of Root Architecture at Seedling and Reproductive Stages for Drought Tolerance in Wheat. PLoS ONE, 2016, 11, e0156528.	1.1	25
68	Seed priming with melatonin: A promising approach to combat abiotic stress in plants. Plant Stress, 2022, 4, 100071.	2.7	25
69	Silicon nanoforms in crop improvement and stress management. Chemosphere, 2022, 305, 135165.	4.2	25
70	Dynamic role of aquaporin transport system under drought stress in plants. Environmental and Experimental Botany, 2021, 184, 104367.	2.0	24
71	Silicon nutrition stimulates Salt-Overly Sensitive (SOS) pathway to enhance salinity stress tolerance and yield in rice. Plant Physiology and Biochemistry, 2021, 166, 593-604.	2.8	24
72	Understanding Aquaporin Transport System in Eelgrass (Zostera marina L.), an Aquatic Plant Species. Frontiers in Plant Science, 2017, 8, 1334.	1.7	23

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73	Nanoparticles as a potential protective agent for arsenic toxicity alleviation in plants. Environmental Pollution, 2022, 300, 118887.	3.7	23
74	Targeting aquaporins to alleviate hazardous metal(loid)s imposed stress in plants. Journal of Hazardous Materials, 2021, 408, 124910.	6.5	22
75	Significance of solute specificity, expression, and gating mechanism of tonoplast intrinsic protein during development and stress response in plants. Physiologia Plantarum, 2021, 172, 258-274.	2.6	22
76	Lsi2: A black box in plant silicon transport. Plant and Soil, 2021, 466, 1-20.	1.8	22
77	Development of chloroplastâ€specific microsatellite markers for molecular characterization of alloplasmic lines and phylogenetic analysis in wheat. Plant Breeding, 2014, 133, 12-18.	1.0	20
78	Understanding the Role of the WRKY Gene Family under Stress Conditions in Pigeonpea (Cajanus Cajan) Tj ETQq0 0 0 rgBT /Overlock 10	1.6	20
79	Cyclooxygenase Inhibitory, Cytotoxicity and Free Radical Scavenging Activities of Selected Medicinal Plants Used in Indian Traditional Medicine. Pharmacognosy Journal, 2011, 3, 57-64.	0.3	19
80	Molecular mapping of the downy mildew resistance gene<i>Ppa3</i>in cauliflower (<i>Brassica) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 4 137-143.	0.9	19
81	Integrated QTL mapping, gene expression and nucleotide variation analyses to investigate complex quantitative traits: a case study with the soybeanâ€"<i>Phytophthora sojae</i> interaction. Plant Biotechnology Journal, 2020, 18, 1492-1494.	4.1	18
82	Overexpression of EcDREB2A transcription factor from finger millet in tobacco enhances tolerance to heat stress through ROS scavenging. Journal of Biotechnology, 2021, 336, 10-24.	1.9	17
83	Omics advances and integrative approaches for the simultaneous improvement of seed oil and protein content in soybean (<i>Glycine max</i>L.). Critical Reviews in Plant Sciences, 2021, 40, 398-421.	2.7	17
84	Molecular typing of native <i>Bacillus thuringiensis</i> isolates from diverse habitats in India using REP-PCR and ERIC-PCR analysis. Journal of General and Applied Microbiology, 2012, 58, 83-94.	0.4	16
85	Si permeability of a deficient Lsi1 aquaporin in tobacco can be enhanced through a conserved residue substitution. Plant Direct, 2019, 3, e00163.	0.8	16
86	Assessment of genetic diversity and population structure of Magnaporthe oryzae causing rice blast disease using SSR markers. Physiological and Molecular Plant Pathology, 2019, 106, 157-165.	1.3	16
87	Opportunity and challenges for nanotechnology application for genome editing in plants. , 2022, 1, 100001.		15
88	Spatio-temporal distribution of micronutrients in rice grains and its regulation. Critical Reviews in Biotechnology, 2020, 40, 490-507.	5.1	14
89	Dissecting the nutrient partitioning mechanism in rice grain using spatially resolved gene expression profiling. Journal of Experimental Botany, 2021, 72, 2212-2230.	2.4	13
90	Understanding aquaporin transport system, silicon and other metalloids uptake and deposition in bottle gourd (Lagenaria siceraria). Journal of Hazardous Materials, 2021, 409, 124598.	6.5	13

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91	Soybean transporter database: A comprehensive database for identification and exploration of natural variants in soybean transporter genes. Physiologia Plantarum, 2021, 171, 756-770.	2.6	12
92	Molecular mapping of quantitative trait loci for flag leaf length and other agronomic traits in rice<i>(Oryza sativa)</i>. Cereal Research Communications, 2012, 40, 362-372.	0.8	11
93	Understanding aquaporin transport system in highly stress-tolerant and medicinal plant species Jujube (Ziziphus jujuba Mill.). Journal of Biotechnology, 2020, 324, 103-111.	1.9	11
94	Characterization of influx and efflux silicon transporters and understanding their role in the osmotic stress tolerance in finger millet (Eleusine coracana (L.) Gaertn.). Plant Physiology and Biochemistry, 2021, 162, 677-689.	2.8	11
95	Reference gene identification for gene expression analysis in rice under different metal stress. Journal of Biotechnology, 2021, 332, 83-93.	1.9	11
96	Targeting Transcription Factors for Plant Disease Resistance:Shifting Paradigm. Current Science, 2019, 117, 1598.	0.4	11
97	Understanding aquaporin regulation defining silicon uptake and role in arsenic, antimony and germanium stress in pigeonpea (Cajanus cajan). Environmental Pollution, 2022, 294, 118606.	3.7	11
98	Progress Toward Development of Climate-Smart Flax: A Perspective on Omics-Assisted Breeding. , 2019, , 239-274.		10
99	Versatile role of silicon in cereals: Health benefits, uptake mechanism, and evolution. Plant Physiology and Biochemistry, 2021, 165, 173-186.	2.8	10
100	Analysis of Genetic Diversity in Earthworms using DNA Markers. Zoological Science, 2011, 28, 25.	0.3	9
101	In defence of the selective transport and role of silicon in plants. New Phytologist, 2019, 223, 514-516.	3.5	9
102	Evolutionary Understanding of Aquaporin Transport System in the Basal Eudicot Model Species Aquilegia coerulea. Plants, 2020, 9, 799.	1.6	9
103	Speed Breeding Opportunities and Challenges for Crop Improvement. Journal of Plant Growth Regulation, 2023, 42, 46-59.	2.8	9
104	Ensuring Global Food Security by Improving Protein Content in Major Grain Legumes Using Breeding and â€˜Omicsâ€™ Tools. International Journal of Molecular Sciences, 2022, 23, 7710.	1.8	9
105	Understanding the Effect of Structural Diversity in WRKY Transcription Factors on DNA Binding Efficiency through Molecular Dynamics Simulation. Biology, 2019, 8, 83.	1.3	8
106	Identification and molecular characterization of rice bran-specific lipases. Plant Cell Reports, 2021, 40, 1215-1228.	2.8	8
107	Whole Genome Re-sequencing of Soybean Accession EC241780 Providing Genomic Landscape of Candidate Genes Involved in Rust Resistance. Current Genomics, 2020, 21, 504-511.	0.7	8
108	Approaches, Applicability, and Challenges for Development of Climate-Smart Soybean. , 2019, , 1-74.		7

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109	Histochemical Techniques in Plant Science: More Than Meets the Eye. Plant and Cell Physiology, 2021, 62, 1509-1527.	1.5	7
110	Random mutagenesis in vegetatively propagated crops: opportunities, challenges and genome editing prospects. Molecular Biology Reports, 2022, 49, 5729-5749.	1.0	7
111	Genome-wide identification and characterization of Xylanase Inhibitor Protein (XIP) genes in cereals. Indian Journal of Genetics and Plant Breeding, 2016, 76, 159.	0.2	7
112	Metabolomics: An Emerging Technology for Soybean Improvement. Ecoproduction, 2019, , 175-186.	0.8	6
113	Understanding the role of SWEET genes in fruit development and abiotic stress in pomegranate (Punica granatum L.). Molecular Biology Reports, 2022, 49, 1329-1339.	1.0	6
114	Metalloids in plants: A systematic discussion beyond description. Annals of Applied Biology, 2022, 180, 7-25.	1.3	5
115	Decoding the genome of superior chapatti quality Indian wheat variety â€˜C 306â€™ unravelled novel genomic variants for chapatti and nutrition quality related genes. Genomics, 2021, 113, 1919-1929.	1.3	5
116	Identification of aquaporins and deciphering their role under salinity stress in pomegranate (Punica) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	0.9	5
117	Evolutionary Understanding of Metacaspase Genes in Cultivated and Wild Oryza Species and Its Role in Disease Resistance Mechanism in Rice. Genes, 2020, 11, 1412.	1.0	4
118	Diversity Analysis of Bacillus thuringiensis Isolates Recovered from Diverse Habitats in India using Random Amplified Polymorphic DNA (RAPD) Markers. Journal of Biological Sciences, 2013, 13, 514-520.	0.1	4
119	Genomic Insights into Omega-3 Polyunsaturated Fatty Acid Producing Shewanella sp. N2AIL from Fish Gut. Biology, 2022, 11, 632.	1.3	4
120	Genomic Resources and Omics-Assisted Breeding Approaches for Pulse Crop Improvement. , 2018, , 13-55.		3
121	Evolution of Bcl-2 Anthogenes (BAG) as the Regulators of Cell Death in Wild and Cultivated Oryza Species. Journal of Plant Growth Regulation, 0, , 1.	2.8	3
122	Genome-Wide Analysis of Four Pathotypes of Wheat Rust Pathogen (Puccinia graminis) Reveals Structural Variations and Diversifying Selection. Journal of Fungi (Basel, Switzerland), 2021, 7, 701.	1.5	2
123	Priming-mediated abiotic stress management in plants: Recent avenues and future directions. Plant Stress, 2022, 5, 100097.	2.7	2
124	Recent biotechnological avenues in crop improvement and stress management. Journal of Biotechnology, 2022, 349, 21-24.	1.9	1
125	Deciphering Haplotypic Variation and Gene Expression Dynamics Associated with Nutritional and Cooking Quality in Rice. Cells, 2022, 11, 1144.	1.8	1
126	Computational tools and approaches for aquaporin (AQP) research. , 2021, , 1-32.		0

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127	A genome-wide resource of intron spanning primers compatible for quantitative PCR and intron length polymorphism in rice. Indian Journal of Genetics and Plant Breeding, 2019, 79, .	0.2	0
128	Global Perspectives on Agriculture: Food Security and Nutrition. , 2020, , 1-27.		0
129	Understanding aquaporins regulation and silicon uptake in carrot (Daucus carota). Journal of Plant Biochemistry and Biotechnology, 0, , .	0.9	0