Michelle Watt

List of Publications by Year
in descending order

94 papers	7,346 citations	61857 43 h-index	60497 81 g-index
100 all docs	100 docs citations	100 times ranked	7331 citing authors

#	Article	IF	Citations
1	Traits and selection strategies to improve root systems and water uptake in water-limited wheat crops. Journal of Experimental Botany, 2012, 63, 3485-3498.	2.4	643
2	Breeding for improved water productivity in temperate cereals: phenotyping, quantitative trait loci, markers and the selection environment. Functional Plant Biology, 2010, 37, 85.	1.1	310
3	Evolution of bacterial communities in the wheat crop rhizosphere. Environmental Microbiology, 2015, 17, 610-621.	1.8	297
4	Energy costs of salt tolerance in crop plants. New Phytologist, 2020, 225, 1072-1090.	3.5	284
5	Brachypodium as a Model for the Grasses: Today and the Future Â. Plant Physiology, 2011, 157, 3-13.	2.3	243
6	Large root systems: are they useful in adapting wheat to dry environments?. Functional Plant Biology, 2011, 38, 347.	1.1	241
7	Rates of Root and Organism Growth, Soil Conditions, and Temporal and Spatial Development of the Rhizosphere. Annals of Botany, 2006, 97, 839-855.	1.4	224
8	Linking Development and Determinacy with Organic Acid Efflux from Proteoid Roots of White Lupin Grown with Low Phosphorus and Ambient or Elevated Atmospheric CO2 Concentration1. Plant Physiology, 1999, 120, 705-716.	2.3	211
9	Microbiome and Exudates of the Root and Rhizosphere of Brachypodium distachyon, a Model for Wheat. PLoS ONE, 2016, 11, e0164533.	1.1	211
10	Proteoid Roots. Physiology and Development. Plant Physiology, 1999, 121, 317-323.	2.3	210
11	Soil conditions and cereal root system architecture: review and considerations for linking Darwin and Weaver. Journal of Experimental Botany, 2013, 64, 1193-1208.	2.4	207
12	Formation and Stabilization of Rhizosheaths of Zea mays L. (Effect of Soil Water Content). Plant Physiology, 1994, 106, 179-186.	2.3	177
13	Soil compaction and the architectural plasticity of root systems. Journal of Experimental Botany, 2019, 70, 6019-6034.	2.4	166
14	Numbers and locations of native bacteria on field-grown wheat roots quantified by fluorescence in situ hybridization (FISH). Environmental Microbiology, 2006, 8, 871-884.	1.8	160
15	O<scp>pen</scp>S<scp>im</scp>R<scp>oot</scp>: widening the scope and application of root architectural models. New Phytologist, 2017, 215, 1274-1286.	3.5	158
16	Mechanisms for cellular transport and release of allelochemicals from plant roots into the rhizosphere. Journal of Experimental Botany, 2012, 63, 3445-3454.	2.4	155
17	Sense and nonsense in conservation agriculture: Principles, pragmatism and productivity in Australian mixed farming systems. Agriculture, Ecosystems and Environment, 2014, 187, 133-145.	2.5	152
18	A rapid, controlled-environment seedling root screen for wheat correlates well with rooting depths at vegetative, but not reproductive, stages at two field sites. Annals of Botany, 2013, 112, 447-455.	1.4	146

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19	Crop Improvement from Phenotyping Roots: Highlights Reveal Expanding Opportunities. Trends in Plant Science, 2020, 25, 105-118.	4.3	141
20	Soil coring at multiple field environments can directly quantify variation in deep root traits to select wheat genotypes for breeding. Journal of Experimental Botany, 2014, 65, 6231-6249.	2.4	134
21	Root hairs enable high transpiration rates in drying soils. New Phytologist, 2017, 216, 771-781.	3.5	123
22	Non-destructive quantification of cereal roots in soil using high-resolution X-ray tomography. Journal of Experimental Botany, 2012, 63, 2503-2511.	2.4	121
23	Plant and bacterial mucilages of the maize rhizosphere: Comparison of their soil binding properties and histochemistry in a model system. Plant and Soil, 1993, 151, 151-165.	1.8	114
24	A screening method to identify genetic variation in root growth response to a salinity gradient. Journal of Experimental Botany, 2011, 62, 69-77.	2.4	114
25	Types, structure and potential for axial water flow in the deepest roots of fieldâ€grown cereals. New Phytologist, 2008, 178, 135-146.	3.5	110
26	Alleviation of salinity stress in plants by endophytic plant-fungal symbiosis: Current knowledge, perspectives and future directions. Plant and Soil, 2021, 461, 219-244.	1.8	109
27	Rhizosphere biology and crop productivityâ€"a review. Soil Research, 2006, 44, 299.	0.6	107
28	A wheat genotype developed for rapid leaf growth copes well with the physical and biological constraints of unploughed soil. Functional Plant Biology, 2005, 32, 695.	1.1	106
29	Phenotyping: New Windows into the Plant for Breeders. Annual Review of Plant Biology, 2020, 71, 689-712.	8.6	102
30	Physiological traits and cereal germplasm for sustainable agricultural systems. Euphytica, 2007, 154, 409-425.	0.6	96
31	Wheat root systems as a breeding target for climate resilience. Theoretical and Applied Genetics, 2021, 134, 1645-1662.	1.8	74
32	The shoot and root growth of Brachypodium and its potential as a model for wheat and other cereal crops. Functional Plant Biology, 2009, 36, 960.	1.1	72
33	Soil strength and rate of root elongation alter the accumulation of Pseudomonas spp. and other bacteria in the rhizosphere of wheat. Functional Plant Biology, 2003, 30, 483.	1.1	70
34	Phosphorus acquisition from soil by white lupin (Lupinus albus L.) and soybean (Glycine max L.), species with contrasting root development. Plant and Soil, 2003, 248, 271-283.	1.8	60
35	Brachypodium as an emerging model for cerealâ€"pathogen interactions. Annals of Botany, 2015, 115, 717-731.	1.4	60
36	A portable fluorescence spectroscopy imaging system for automated root phenotyping in soil cores in the field. Journal of Experimental Botany, 2016, 67, 1033-1043.	2.4	60

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37	Response of millet and sorghum to a varying water supply around the primary and nodal roots. Annals of Botany, 2013, 112, 439-446.	1.4	59
38	The Autoregulation Gene <i>SUNN</i> Mediates Changes in Root Organ Formation in Response to Nitrogen through Alteration of Shoot-to-Root Auxin Transport Â Â. Plant Physiology, 2012, 159, 489-500.	2.3	55
39	Plant roots: understanding structure and function in an ocean of complexity. Annals of Botany, 2016, 118, 555-559.	1.4	55
40	Multilab EcoFAB study shows highly reproducible physiology and depletion of soil metabolites by a model grass. New Phytologist, 2019, 222, 1149-1160.	3.5	55
41	Digital imaging approaches for phenotyping whole plant nitrogen and phosphorus response in <i>Brachypodium distachyon</i>. Journal of Integrative Plant Biology, 2014, 56, 781-796.	4.1	49
42	Beyond Digging: Noninvasive Root and Rhizosphere Phenotyping. Trends in Plant Science, 2020, 25, 119-120.	4.3	49
43	GrowScreen-PaGe, a non-invasive, high-throughput phenotyping system based on germination paper to quantify crop phenotypic diversity and plasticity of root traits under varying nutrient supply. Functional Plant Biology, 2017, 44, 76.	1.1	47
44	Modulators or facilitators? Roles of lipids in plant rootâ€"microbe interactions. Trends in Plant Science, 2022, 27, 180-190.	4.3	45
45	Variation in Adult Plant Phenotypes and Partitioning among Seed and Stem-Borne Roots across <i>Brachypodium distachyon</i> Accessions to Exploit in Breeding Cereals for Well-Watered and Drought Environments. Plant Physiology, 2015, 168, 953-967.	2.3	44
46	Manipulating exudate composition from root apices shapes the microbiome throughout the root system. Plant Physiology, 2021, 187, 2279-2295.	2.3	44
47	Root phenotypes of young wheat plants grown in controlled environments show inconsistent correlation with mature root traits in the field. Journal of Experimental Botany, 2020, 71, 4751-4762.	2.4	43
48	Pathways of infection of <i>Brassica napus </i>roots by <i>Leptosphaeria maculans</i>. New Phytologist, 2007, 176, 211-222.	3.5	41
49	Monitoring of Plant Protein Post-translational Modifications Using Targeted Proteomics. Frontiers in Plant Science, 2018, 9, 1168.	1.7	41
50	Dynamics in plant roots and shoots minimize stress, save energy and maintain water and nutrient uptake. New Phytologist, 2020, 225, 1111-1119.	3.5	37
51	Point specific measurement and monitoring of soil water content with an emphasis on TDR. Canadian Journal of Soil Science, 1996, 76, 307-316.	0.5	35
52	Application of Brachypodium to the genetic improvement of wheat roots. Journal of Experimental Botany, 2012, 63, 3467-3474.	2.4	35
53	Quantifying the response of wheat (Triticum aestivum L) root system architecture to phosphorus in an Oxisol. Plant and Soil, 2014, 385, 303-310.	1.8	35
54	Vigorous Crop Root Systems. , 2009, , 309-325.		34

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55	Path of water for root growth. Functional Plant Biology, 2010, 37, 1105.	1.1	33
56	Wheats developed for high yield on stored soil moisture have deep vigorous root systems. Functional Plant Biology, 2016, 43, 173.	1.1	27
57	A sterile hydroponic system for characterising root exudates from specific root types and whole-root systems of large crop plants. Plant Methods, 2018, 14, 114.	1.9	25
58	Root phenotypes at maturity in diverse wheat and triticale genotypes grown in three field experiments: Relationships to shoot selection, biomass, grain yield, flowering time, and environment. Field Crops Research, 2020, 255, 107870.	2.3	25
59	Strategies to isolate transporters that facilitate organic anion efflux from plant roots. Plant and Soil, 2003, 248, 61-69.	1.8	24
60	Simultaneous effects of leaf irradiance and soil moisture on growth and root system architecture of novel wheat genotypes: implications for phenotyping. Journal of Experimental Botany, 2015, 66, 5441-5452.	2.4	21
61	Frozen in time: a new method using cryoâ€scanning electron microscopy to visualize rootâ€œfungal interactions. New Phytologist, 2006, 172, 369-374.	3.5	19
62	Roots of Banksia spp. (Proteaceae) with Special Reference to Functioning of Their Specialized Proteoid Root Clusters. , 2002, , 989-1006.		19
63	The root system architecture of wheat establishing in soil is associated with varying elongation rates of seminal roots: quantification using 4D magnetic resonance imaging. Journal of Experimental Botany, 2022, 73, 2050-2060.	2.4	19
64	Effects of Root Temperature on the Plant Growth and Food Quality of Chinese Broccoli (Brassica) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	1.3	18
65	Effects of Local Variations in Soil Moisture on Hydrophobic Deposits and Dye Diffusion in Corn Roots. Botanica Acta, 1996, 109, 492-501.	1.6	17
66	Organic anions in the rhizosphere of Al-tolerant and Al-sensitive wheat lines grown in an acid soil in controlled and field environments. Soil Research, 2008, 46, 257.	0.6	16
67	<i><scp>B</scp>rachypodium distachyon</i> is a pathosystem model for the study of the wheat disease rhizoctonia root rot. Plant Pathology, 2015, 64, 91-100.	1.2	16
68	Field Phenotyping. , 2017, , 53-81.		16
69	Genetically vigorous wheat genotypes maintain superior early growth in no-till soils. Plant and Soil, 2014, 377, 127-144.	1.8	14
70	Effects of Root Cooling on Plant Growth and Fruit Quality of Cocktail Tomato during Two Consecutive Seasons. Journal of Food Quality, 2019, 2019, 1-15.	1.4	14
71	Root type is not an important driver of mycorrhizal colonisation in Brachypodium distachyon. Pedobiologia, 2017, 65, 5-15.	0.5	13
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73	The rhizosphere: biochemistry and organic substances at the soilâ€“plant interface. 2nd edn.. Annals of Botany, 2009, 104, ix-x.	1.4	11
74	Evaluation of root characteristics, canopy temperature depression and stay green trait in relation to grain yield in wheat under early and late sown conditions. Indian Journal of Plant Physiology, 2014, 19, 43-47.	0.8	11
75	Rhizosphere Signals for Plantâ€“Microbe Interactions: Implications for Field-Grown Plants. Progress in Botany Fortschritte Der Botanik, 2010, , 125-161.	0.1	11
76	N-dependent dynamics of root growth and nitrate and ammonium uptake are altered by the bacterium <i>Herbaspirillum seropedicae</i> in the cereal model <i>Brachypodium distachyon</i>. Journal of Experimental Botany, 2022, 73, 5306-5321.	2.4	11
77	Time-resolution of the shoot and root growth of the model cereal Brachypodium in response to inoculation with Azospirillum bacteria at low phosphorus and temperature. Plant Growth Regulation, 2021, 93, 149-162.	1.8	10
78	Specialised root adaptations display cell-specific developmental and physiological diversity. Plant and Soil, 2009, 322, 39-47.	1.8	9
79	Transcriptional regulation of <scp><i>ZIP</i></scp> genes is independent of local zinc status in Brachypodium shoots upon zinc deficiency and resupply. Plant, Cell and Environment, 2021, 44, 3376-3397.	2.8	9
80	Rhizosphere models: their concepts and application to plant-soil ecosystems. Plant and Soil, 2022, 474, 17-55.	1.8	9
81	The Metabolic Response of Brachypodium Roots to the Interaction with Beneficial Bacteria Is Affected by the Plant Nutritional Status. Metabolites, 2021, 11, 358.	1.3	8
82	A toolkit to rapidly modify root systems through single plant selection. Plant Methods, 2022, 18, 2.	1.9	8
83	Brachypodium distachyon genotypes vary in resistance to Rhizoctonia solani AG8. Functional Plant Biology, 2016, 43, 189.	1.1	7
84	Wheat Can Access Phosphorus From Algal Biomass as Quickly and Continuously as From Mineral Fertilizer. Frontiers in Plant Science, 2021, 12, 631314.	1.7	7
85	Phosphorus Efficient Phenotype of Rice. , 0, , .		6
86	Variation in Root System Architecture among the Founder Parents of Two 8-way MAGIC Wheat Populations for Selection in Breeding. Agronomy, 2021, 11, 2452.	1.3	6
87	Effects of Short-Term Root Cooling before Harvest on Yield and Food Quality of Chinese Broccoli (Brassica oleracea var. Alboglabra Bailey). Agronomy, 2021, 11, 577.	1.3	4
88	Root Growth and Architecture of Wheat and Brachypodium Vary in Response to Algal Fertilizer in Soil and Solution. Agronomy, 2022, 12, 285.	1.3	4
89	Breeding to improve grain yield in water-limited environments: the CSIRO experience with wheat.. , 2011, , 105-121.		3
90	Editorial: Phenotyping; From Plant, to Data, to Impact and Highlights of the International Plant Phenotyping Symposium - IPPS 2018. Frontiers in Plant Science, 2020, 11, 618342.	1.7	2

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91	Phosphorus acquisition from soil by white lupin (Lupinus albus L.) and soybean (Glycine max L.), species with contrasting root development. , 2003, , 271-283.		2
92	Root Gravitropism. , 2013, , 284-297.		1
93	Understanding plant-root interactions with rhizobacteria to improve biological nitrogen fixation in crops. Burleigh Dodds Series in Agricultural Science, 2021, , 163-194.	0.1	1
94	Strategies to isolate transporters that facilitate organic anion efflux from plant roots. , 2003, , 61-69.		0