Roland Gerhards

List of Publications by Year
in descending order

119 papers	2,932 citations	172457 29 h-index	214800 47 g-index
122 all docs	122 docs citations	122 times ranked	2155 citing authors

#	Article	IF	Citations
1	Exploring the Effects of Different Stubble Tillage Practices and Glyphosate Application Combined with the New Soil Residual Herbicide Cinmethylin against Alopecurus myosuroides Huds. in Winter Wheat. Agronomy, 2022, 12, 167.	3.0	0
2	Advances in siteâ€specific weed management in agricultureâ€"A review. Weed Research, 2022, 62, 123-133.	1.7	53
3	Weed Management in Ridge Tillage Systemsâ€"A Review. Agronomy, 2022, 12, 910.	3.0	3
4	Evaluating Sensor-Based Mechanical Weeding Combined with Pre- and Post-Emergence Herbicides for Integrated Weed Management in Cereals. Agronomy, 2022, 12, 1465.	3.0	8
5	Precision Chemical Weed Management Strategies: A Review and a Design of a New CNN-Based Modular Spot Sprayer. Agronomy, 2022, 12, 1620.	3.0	22
6	Automatic adjustment of harrowing intensity in cereals using digital image analysis. Weed Research, 2021, 61, 68-77.	1.7	10
7	Features and applications of a field imaging chlorophyll fluorometer to measure stress in agricultural plants. Precision Agriculture, 2021, 22, 947-963.	6.0	10
8	30. Comparison of sensor-based harrowing technology (SenHa) with a conventional manual harrowing-system. , 2021, , .		0
9	Crop Response to Leaf and Seed Applications of the Biostimulant ComCatÂ® under Stress Conditions. Agronomy, 2021, 11, 1161.	3.0	4
10	Sensor-Based Intrarow Mechanical Weed Control in Sugar Beets with Motorized Finger Weeders. Agronomy, 2021, 11, 1517.	3.0	20
11	A long-term study of crop rotations, herbicide strategies and tillage practices: Effects on Alopecurus myosuroides Huds. Abundance and contribution margins of the cropping systems. Crop Protection, 2021, 145, 105613.	2.1	17
12	Comparing Sensor-Based Adjustment of Weed Harrowing Intensity with Conventional Harrowing under Heterogeneous Field Conditions. Agronomy, 2021, 11, 1605.	3.0	6
13	Mineral-Ecological Cropping Systemsâ€"A New Approach to Improve Ecosystem Services by Farming without Chemical Synthetic Plant Protection. Agronomy, 2021, 11, 1710.	3.0	25
14	Efficacy of Various Mechanical Weeding Methodsâ€"Single and in Combinationâ€"In Terms of Different Field Conditions and Weed Densities. Agronomy, 2021, 11, 2084.	3.0	7
15	Advancing cover cropping in temperate integrated weed management. Pest Management Science, 2020, 76, 42-46.	3.4	37
16	Linking weed patterns with soil properties: a long-term case study. Precision Agriculture, 2020, 21, 569-588.	6.0	16
17	Sensorâ€based evaluation of maize (<scp><i>Zea mays</i></scp>) and weed response to postâ€emergence herbicide applications of <i>Isoxaflutole</i> and <i>Cyprosulfamide</i> applied as crop seed treatment or herbicide mixing partner. Pest Management Science, 2020, 76, 1856-1865.	3.4	12
18	Camera-guided Weed Hoeing in Winter Cereals with Narrow Row Distance. Gesunde Pflanzen, 2020, 72, 403-411.	3.0	22

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19	Sensor-based mechanical weed control: Present state and prospects. Computers and Electronics in Agriculture, 2020, 176, 105638.	7.7	53
20	Smart Harrowingâ€"Adjusting the Treatment Intensity Based on Machine Vision to Achieve a Uniform Weed Control Selectivity under Heterogeneous Field Conditions. Agronomy, 2020, 10, 1925.	3.0	11
21	Effects of weed biodiversity on the ecosystem service of weed seed predation along a farming intensity gradient. Global Ecology and Conservation, 2020, 24, e01316.	2.1	13
22	Influence of Anaerobic Digestion Processes on the Germination of Weed Seeds. Gesunde Pflanzen, 2020, 72, 181-194.	3.0	9
23	Weed Identification in Maize, Sunflower, and Potatoes with the Aid of Convolutional Neural Networks. Remote Sensing, 2020, 12, 4185.	4.0	45
24	Inâ€field classification of herbicideâ€resistant <i>Papaver rhoeas</i> and <i>Stellaria media</i> using an imaging sensor of the maximum quantum efficiency of photosystem <scp>II</scp>. Weed Research, 2019, 59, 357-366.	1.7	7
25	Low-Cost Three-Dimensional Modeling of Crop Plants. Sensors, 2019, 19, 2883.	3.8	31
26	A new logarithmic sprayer for dose-response studies in the field. Computers and Electronics in Agriculture, 2019, 157, 166-172.	7.7	2
27	Weed Control Ability of Single Sown Cover Crops Compared to Species Mixtures. Agronomy, 2019, 9, 294.	3.0	24
28	Weed suppressive ability of cover crops under water-limited conditions. Plant, Soil and Environment, 2019, 65, 541-548.	2.2	8
29	Identifying the Fusarium spp. infestation in winter wheat based on RGB imaginary. , 2019, , .		0
30	Rapid monitoring of herbicide-resistant Alopecurus myosuroides Huds. using chlorophyll fluorescence imaging technology. Journal of Plant Diseases and Protection, 2018, 125, 187.	2.9	4
31	Camera steered mechanical weed control in sugar beet, maize and soybean. Precision Agriculture, 2018, 19, 708-720.	6.0	47
32	Adjustment of Weed Hoeing to Narrowly Spaced Cereals. Agriculture (Switzerland), 2018, 8, 54.	3.1	10
33	Weed Suppressive Ability of Cover Crop Mixtures Compared to Repeated Stubble Tillage and Glyphosate Treatments. Agriculture (Switzerland), 2018, 8, 144.	3.1	20
34	How Management Factors Influence Weed Communities of Cereals, Their Diversity and Endangered Weed Species in Central Europe. Agriculture (Switzerland), 2018, 8, 172.	3.1	13
35	A Fluorescence Sensor Capable of Real-Time Herbicide Effect Monitoring in Greenhouses and the Field. Sensors, 2018, 18, 3771.	3.8	10
36	Suppressing Alopecurus myosuroides Huds. in Rotations of Winter-Annual and Spring Crops. Agriculture (Switzerland), 2018, 8, 91.	3.1	7

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37	<i>A novel chlorophyll fluorescence sensor for real-time herbicide effect monitoring</i>. , 2018, , .		0
38	Weed Suppression Ability and Yield Impact of Living Mulch in Cereal Crops. Agriculture (Switzerland), 2018, 8, 39.	3.1	14
39	Multi-Temporal Site-Specific Weed Control of Cirsium arvense (L.) Scop. and Rumex crispus L. in Maize and Sugar Beet Using Unmanned Aerial Vehicle Based Mapping. Agriculture (Switzerland), 2018, 8, 65.	3.1	31
40	Early Identification of Herbicide Stress in Soybean (Glycine max (L.) Merr.) Using Chlorophyll Fluorescence Imaging Technology. Sensors, 2018, 18, 21.	3.8	25
41	Contribution of allelopathic effects to the overall weed suppression by different cover crops. Weed Research, 2018, 58, 331-337.	1.7	52
42	Winter wheat yield loss in response to Avena fatua competition and effect of reduced herbicide dose rates on seed production of this species. Journal of Plant Diseases and Protection, 2017, 124, 371-382.	2.9	9
43	In field identification of herbicide resistant Apera spica-venti using chlorophyll fluorescence. Advances in Animal Biosciences, 2017, 8, 283-287.	1.0	3
44	Utilization of Chlorophyll Fluorescence Imaging Technology to Detect Plant Injury by Herbicides in Sugar Beet and Soybean. Weed Technology, 2017, 31, 523-535.	0.9	22
45	Modelling of low input herbicide strategies for the control of wild oat in intensive winter wheat cropping systems. Field Crops Research, 2017, 201, 1-9.	5.1	4
46	Weed Control Using Conventional Tillage, Reduced Tillage, No-Tillage, and Cover Crops in Organic Soybean. Agriculture (Switzerland), 2017, 7, 43.	3.1	40
47	Allelopathic effects and weed suppressive ability of cover crops. Plant, Soil and Environment, 2016, 62, 60-66.	2.2	59
48	Using Optical Sensors to Identify Water Deprivation, Nitrogen Shortage, Weed Presence and Fungal Infection in Wheat. Agriculture (Switzerland), 2016, 6, 24.	3.1	22
49	Rapid in-season detection of herbicide resistant Alopecurus myosuroides using a mobile fluorescence imaging sensor. Crop Protection, 2016, 89, 170-177.	2.1	15
50	Quality Improvement of Fresh-Cut Endive (Cichorium endivia L.) and Recycling of Washing Water by Low-Dose UV-C Irradiation. Food and Bioprocess Technology, 2016, 9, 1979-1990.	4.7	20
51	Weed Suppression of Living Mulch in Sugar Beets. Gesunde Pflanzen, 2016, 68, 145-154.	3.0	10
52	An approach to investigate the costs of herbicideâ€resistant <i>Alopecurus myosuroides</i>. Weed Research, 2016, 56, 407-414.	1.7	16
53	Inhibitory effects of cover crop mulch on germination and growth of Stellaria media (L.) Vill., Chenopodium album L. and Matricaria chamomilla L.. Crop Protection, 2016, 90, 125-131.	2.1	25
54	Acetohydroxyacid synthase (AHAS) amino acid substitution Asp376Glu in Lolium perenne: effect on herbicide efficacy and plant growth. Journal of Plant Diseases and Protection, 2016, 123, 145-153.	2.9	28

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55	Chlorophyll Fluorescence Imaging for Monitoring the Effects of Minimal Processing and Warm Water Treatments on Physiological Properties and Quality Attributes of Fresh-Cut Salads. Food and Bioprocess Technology, 2016, 9, 650-663.	4.7	16
56	Sprouting Ability and Seasonal Changes of Sugar Concentrations in Rhizomes of Calystegia sepium and Roots of Convolvulus arvensis. Journal of Plant Diseases and Protection, 2015, 122, 133-140.	2.9	3
57	Benefits of Precision Farming Technologies for Mechanical Weed Control in Soybean and Sugar Beetâ€"Comparison of Precision Hoeing with Conventional Mechanical Weed Control. Agronomy, 2015, 5, 130-142.	3.0	45
58	Investigation of biochemical and competitive effects of cover crops on crops and weeds. Crop Protection, 2015, 71, 79-87.	2.1	27
59	A Non-Chemical System for Online Weed Control. Sensors, 2015, 15, 7691-7707.	3.8	18
60	Changes in Weed Communities, Herbicides, Yield Levels and Effect of Weeds on Yield in Winter Cereals Based on Three Decades of Field Experiments in South-Western Germany. Gesunde Pflanzen, 2015, 67, 11-20.	3.0	10
61	Degradation and Metabolism of Fenoxaprop and Mesosulfuron + Iodosulfuron in Multiple Resistant Blackgrass (Alopecurus myosuroides). Gesunde Pflanzen, 2015, 67, 109-117.	3.0	7
62	Evaluation of two chemical weed control systems in sugar beet in Germany and the Russian Federation. Plant, Soil and Environment, 2015, 61, 489-495.	2.2	11
63	Precision harrowing with a flexible tine harrow and an ultrasonic sensor. , 2015, , 579-586.		3
64	Using sensors to assess herbicide stress in sugar beet. , 2015, , 561-570.		3
65	Longâ€term changes in weed occurrence, yield and use of herbicides in maize in southâ€western <scp>G</scp>ermany, with implications for the determination of economic thresholds. Weed Research, 2014, 54, 457-466.	1.7	25
66	Integrating Economics in the Critical Period for Weed Control Concept in Corn. Weed Science, 2014, 62, 608-618.	1.5	6
67	Multivariate Analysis of the Agricultural Management Presence of Sorghum Halepense (L.) Pers. Relationships in Maize Crops. Gesunde Pflanzen, 2014, 66, 17-22.	3.0	5
68	Potential use of ground-based sensor technologies for weed detection. Pest Management Science, 2014, 70, 190-199.	3.4	89
69	Sensorâ€based assessment of herbicide effects. Weed Research, 2014, 54, 223-233.	1.7	13
70	Automatic control of farming operations based on spatial web services. Computers and Electronics in Agriculture, 2014, 100, 110-115.	7.7	28
71	Thiencarbazone-Methyl Efficacy, Absorption, Translocation, and Metabolism in Vining Weed Species. Weed Science, 2014, 62, 512-519.	1.5	6
72	Estimating economic thresholds for site-specific weed control using manual weed counts and sensor technology: An example based on three winter wheat trials. Pest Management Science, 2014, 70, 200-211.	3.4	23

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73	Growth and weed suppression ability of common and new cover crops in Germany. Crop Protection, 2014, 63, 1-8.	2.1	89
74	Determination of the Critical Period for Weed Control in Corn. Weed Technology, 2013, 27, 63-71.	0.9	25
75	The Nature of Sorghum Halepense (L.) Pers. Spatial Distribution Patterns in Tomato Cropping Fields. Gesunde Pflanzen, 2013, 65, 85-91.	3.0	4
76	Chlorophyll fluorescence imaging: a new method for rapid detection of herbicide resistance in <i><scp>A</scp>lopecurus myosuroides</i>. Weed Research, 2013, 53, 399-406.	1.7	35
77	Japanese Bindweed (<i>Calystegia hederacea</i>) Abundance and Response to Winter Wheat Seeding Rate and Nitrogen Fertilization in the North China Plain. Weed Technology, 2013, 27, 768-777.	0.9	8
78	Efficacy of four post-emergence herbicides applied at reduced doses on weeds in summer maize (Zea) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	2.1	38
79	Development and Testing of a Decision Making Based Method to Adjust Automatically the Harrowing Intensity. Sensors, 2013, 13, 6254-6271.	3.8	14
80	Discriminating Crop, Weeds and Soil Surface with a Terrestrial LIDAR Sensor. Sensors, 2013, 13, 14662-14675.	3.8	63
81	The Mechanism of Methylated Seed Oil on Enhancing Biological Efficacy of Topramezone on Weeds. PLoS ONE, 2013, 8, e74280.	2.5	13
82	Development of a Geo-Referenced Database for Weed Mapping and Analysis of Agronomic Factors Affecting Herbicide Resistance in Apera spica-venti L. Beauv. (Silky Windgrass). Agronomy, 2013, 3, 13-27.	3.0	17
83	Site-Specific Weed Control. , 2013, , 273-294.		5
84	An Ultrasonic System for Weed Detection in Cereal Crops. Sensors, 2012, 12, 17343-17357.	3.8	52
85	Fractioning of an ethoxylated soybean oil adjuvant and studies on the potency of the fractions in combination with bromoxynil octanoate and sulfonylurea herbicides. Journal of Plant Diseases and Protection, 2012, 119, 208-215.	2.9	1
86	Evaluation of two patch spraying systems in winter wheat and maize. Weed Research, 2012, 52, 510-519.	1.7	29
87	Uptake Studies on a Fluorescein-Labelled Seed Oil Adjuvant in Abutilon theophrasti, Sinapis arvensis and Beta vulgaris. Gesunde Pflanzen, 2012, 64, 167-174.	3.0	2
88	Using precision farming technology to quantify yield effects attributed to weed competition and herbicide application. Weed Research, 2012, 52, 6-15.	1.7	28
89	Sequential support vector machine classification for small-grain weed species discrimination with special regard to Cirsium arvense and Galium aparine. Computers and Electronics in Agriculture, 2012, 80, 89-96.	7.7	61
90	Investigations on herbicide resistance in European silky bent grass (Apera spica-venti) populations. Journal of Plant Diseases and Protection, 2011, 118, 31-39.	2.9	15

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91	The influence of postâ€emergence weed harrowing on selectivity, crop recovery and crop yield in different growth stages of winter wheat. Weed Research, 2011, 51, 478-488.	1.7	36
92	Targetâ€site resistance to ALSâ€inhibiting herbicides in <i>Apera spicaâ€venti</i> populations is conferred by documented and previously unknown mutations. Weed Research, 2011, 51, 294-303.	1.7	58
93	Two-year Investigations on Herbicide-Resistant Silky Bent Grass (Apera spica-venti L. Beauv.) Populations in Winter Wheatâ€"Population Dynamics, Yield Losses, Control Efficacy and Introgression into Sensitive Population. Gesunde Pflanzen, 2011, 63, 75-82.	3.0	3
94	Mechanical Weed Control. , 2010, , 279-294.		35
95	Decision Rules for Site-Specific Weed Management. , 2010, , 223-239.		14
96	Spatial and Temporal Dynamics of Weed Weeds Epidemiology Weeds Distribution Populations. , 2010, , 17-25.		10
97	Economic Evaluation of Precision Crop Protection Measures. , 2010, , 417-426.		5
98	DFG Research Training Group 722 Use of Information Technologies for Precision Crop Protection. IT - Information Technology, 2009, 51, 347-354.	0.9	1
99	An on-farm approach to quantify yield variation and to derive decision rules for site-specific weed management. Precision Agriculture, 2008, 9, 133-146.	6.0	33
100	Precision farming for weed management: techniques. Gesunde Pflanzen, 2008, 60, 171-181.	3.0	65
101	Precision agriculture on grassland: Applications, perspectives and constraints. European Journal of Agronomy, 2008, 29, 59-71.	4.1	160
102	Modeling spatial and temporal dynamics of Chenopodium album L. under the influence of site-specific weed control. Crop Protection, 2007, 26, 206-211.	2.1	14
103	Spatial and Temporal Definition of Weed Patches Using Quantitative Image Analysis. Journal of Agronomy and Crop Science, 2006, 192, 72-78.	3.5	7
104	Practical experiences with a system for site-specific weed control in arable crops using real-time image analysis and GPS-controlled patch spraying. Weed Research, 2006, 46, 185-193.	1.7	158
105	Photocontrol of Weeds. Journal of Agronomy and Crop Science, 2004, 190, 402-415.	3.5	31
106	The Economic Impact of Site-Specific Weed Control. Precision Agriculture, 2003, 4, 249-260.	6.0	111
107	Real-time weed detection, decision making and patch spraying in maize, sugarbeet, winter wheat and winter barley. Weed Research, 2003, 43, 385-392.	1.7	147
108	Analyse der Ertrags- und Unkrautverteilung in Ackerschlgen mit einem Geo-Informations-System (GIS). Journal of Agronomy and Crop Science, 2002, 188, 34-42.	3.5	3

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109	Photobiologische Unkrautregulierung annueller Ackerunkrauter. Journal of Agronomy and Crop Science, 2002, 188, 389-397.	3.5	5
110	Site-Specific Weed Control in Maize, Sugar Beet, Winter Wheat, and Winter Barley. Precision Agriculture, 2002, 3, 25-35.	6.0	29
111	Title is missing!. Precision Agriculture, 2000, 2, 247-263.	6.0	10
112	Aircraft Design Optimizing Operators, Environmental System and Manufacturers Requirements. , 2000, , .		0
113	Characterizing spatial stability of weed populations using interpolated maps. Weed Science, 1997, 45, 108-119.	1.5	79
114	Site Specific Weed Control in Winter Wheat. Journal of Agronomy and Crop Science, 1997, 178, 219-225.	3.5	35
115	Kartierung und geostatistische Analyse der Unkrautverteilung in ZuckerrÃ¼benschlÃgen als Grundlage fÃ¼r eine teilschlagspezifische BekÃmpfung. Journal of Agronomy and Crop Science, 1996, 176, 259-266.	3.5	13
116	Automatische Erkennung von zehn Unkrautarten mit Hilfe digitaler Bildverarbeitung und Fouriertransformation. Journal of Agronomy and Crop Science, 1993, 171, 321-328.	3.5	16
117	Dynamisches Entscheidungsmodell zur Lenkung von UnkrautkontrollmaÃŸnahmen in Wintergetreide mit Hilfe digitaler Bildverarbeitung. Journal of Agronomy and Crop Science, 1993, 171, 329-335.	3.5	6
118	Plant species identification using fuzzy set theory. , 0, , .		9
119	Integriertes Unkrautmanagement zur Vermeidung von Herbizidresistenz*. , 0, , .		0