Phytoremediation of mercury contamination: bibliometric analysis.

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**Table S1.** Top 10 authors with the highest number of articles in WoS and Scopus on phytoremediation of mercury contamination

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Rank | WoS | | | | Scopus | | | |
| **Author** | **Country** | **Documents** | **Citations** | **Author** | **Country** | **Documents** | **Citations** |
| 1 | Feng, Xinbin | China | 10 | 251 | Wang, Jianxu | China | 16 | 816 |
| 2 | Liu, Zhongchuang | China | 10 | 190 | Feng, Xinbin | China | 14 | 753 |
| 3 | Wang, Li-Ao | China | 9 | 140 | Kumar, Amit | Canada | 11 | 544 |
| 4 | Wang, Jianxu | China | 8 | 218 | Liu, Zhongchuang | China | 10 | 151 |
| 5 | Anderson, Christopher W. N. | Nueva Zelanda | 8 | 205 | Meagher, Richard Brian | United States | 9 | 821 |
| 6 | Marrugo Negrete, Jose | Colombia | 7 | 287 | Kiyono, Masako | Japan | 8 | 171 |
| 7 | Smolinska, Beata | Poland | 7 | 110 | Wang, Li-Ao | China | 8 | 148 |
| 8 | Kiyono, Masako | Japan | 6 | 71 | Chen, Jian | China | 8 | 410 |
| 9 | Nakamura, Ryosuke | Japan | 6 | 71 | Anderson, Christopher W. N. | Nueva Zelanda | 8 | 798 |
| 10 | Pereira, Eduarda | Portugal | 6 | 95 | Wang, H | China | 8 | 232 |

**Table S2.** Journals with the greatest scientific production in WoS

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Rank | Source | Documents | Percentage of publications | Citations | H | Q (2022) | Country | Subject area |
| 1 | Environmental Science and Pollution Research | 26 | 5.7 | 564 | 154 | Q2 | Germany | [Environmental Science; Medicine](https://www.scimagojr.com/journalrank.php?area=2300) |
| 2 | International Journal of Phytoremediation | 26 | 5.7 | 479 | 98 | Q2 | United Kingdom | Environmental Science; Agricultural and Biological Sciences |
| 3 | Chemosphere | 23 | 5.0 | 875 | 98 | Q2 | United Kingdom | [Environmental Science; Medicine; Chemistry](https://www.scimagojr.com/journalrank.php?area=2300) |
| 4 | Science of the Total Environment | 19 | 4.2 | 1551 | 317 | Q1 | Netherlands | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |
| 5 | Journal of Hazardous Materials | 17 | 3.7 | 546 | 329 | Q1 | Germany | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |
| 6 | Ecotoxicology and Environmental Safety | 14 | 3.1 | 785 | 161 | Q1 | [United States](https://www.scimagojr.com/journalrank.php?country=US) | [Environmental Science; Medicine](https://www.scimagojr.com/journalrank.php?area=2300) |
| 7 | Water Air and Soil Pollution | 13 | 2.8 | 239 | 127 | Q2 | Netherlands | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |
| 8 | Environmental Monitoring and Assessment | 10 | 2.2 | 238 | 132 | Q2 | Netherlands | [Environmental Science; Medicine](https://www.scimagojr.com/journalrank.php?area=2300) |
| 9 | Ecological Engineering | 7 | 1.5 | 180 | 150 | Q1 | Netherlands | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |
| 10 | Environmental Pollution | 7 | 1.5 | 364 | 275 | Q1 | United Kingdom | [Environmental Science; Medicine; Pharmacology, Toxicology and Pharmaceutics](https://www.scimagojr.com/journalrank.php?area=2300) |

**Table S3.** Journals with the greatest scientific production in Scopus

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Rank | Source | Documents | Percentage of publications | Citations | H | Q (2022) | Country | Subject area |
| 1 | Chemosphere | 26 | 3.7 | 2031 | 288 | Q1 | United Kingdom | [Environmental Science; Medicine; Chemistry](https://www.scimagojr.com/journalrank.php?area=2300) |
| 2 | Environmental Science and Pollution Research | 26 | 3.7 | 704 | 154 | Q2 | Germany | [Environmental Science; Medicine](https://www.scimagojr.com/journalrank.php?area=2300) |
| 3 | International Journal of Phytoremediation | 26 | 3.7 | 963 | 98 | Q2 | United Kingdom | Environmental Science; Agricultural and Biological Sciences |
| 4 | Ecotoxicology And Environmental Safety | 19 | 2.7 | 1500 | 161 | Q1 | [United States](https://www.scimagojr.com/journalrank.php?country=US) | [Environmental Science; Medicine](https://www.scimagojr.com/journalrank.php?area=2300) |
| 5 | Journal Of Hazardous Materials | 19 | 2.7 | 1235 | 329 | Q1 | Germany | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |
| 6 | Water, Air, And Soil Pollution | 19 | 2.7 | 826 | 127 | Q2 | Netherlands | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |
| 7 | Science Of the Total Environment | 16 | 2.3 | 1582 | 317 | Q1 | Netherlands | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |
| 8 | Environmental Pollution | 14 | 2.0 | 1297 | 275 | Q1 | United Kingdom | [Environmental Science; Medicine; Pharmacology, Toxicology and Pharmaceutics](https://www.scimagojr.com/journalrank.php?area=2300) |
| 9 | Environmental Monitoring and Assessment | 13 | 1.9 | 1004 | 132 | Q2 | Netherlands | [Environmental Science; Medicine](https://www.scimagojr.com/journalrank.php?area=2300) |
| 10 | Ecological Engineering | 8 | 1.2 | 222 | 150 | Q1 | Netherlands | [Environmental Science](https://www.scimagojr.com/journalrank.php?area=2300) |

**Table S4.** Most cited papers on phytoremediation of mercury pollution in WoS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No | First author/ Corresponding author | Institution and Country of origin (based on first author’s affiliation) | Journal | Tittle | Publication Year | Citations | Document type |
| 1 | Liu, L / Guo, M | Delaware State University (USA) | Science of the Total Environment | Remediation techniques for heavy metal-contaminated soils: Principles and applicability | 2018 | 814 | Review |
| 2 | Park, J / Lee, Y, Martinoia, E | University of Zurich (Zurich) and Pohang University of Science and Technology (Korea) | The Plant Journal | The phytochelatin transporters AtABCC1 and AtABCC2 mediate tolerance to cadmium and mercury. | 2012 | 382 | Article |
| 3 | Li, C / Yan, X | Academy of Agricultural Sciences (China) | [Soil and Sediment Contamination](https://scopus.proxyutp.elogim.com/sourceid/24512?origin=resultslist) | [A Review on Heavy Metals Contamination in Soil: Effects, Sources, and Remediation Techniques](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-85064039658&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=18&citeCnt=343&searchTerm=) | 2019 | 277 | Review |
| 4 | Marchand, L | Université Bordeaux 1 (France) | Environmental pollution | Metal and metalloid removal in constructed wetlands, with emphasis on the importance of plants and standardized measurements: A review | 2010 | 262 | Review |
| 5 | Xiao, R | Northwest A&F University (China) | Ecotoxicology and environmental safety | Soil heavy metal contamination and health risks associated with artisanal gold mining in Tongguan, Shaanxi, China | 2017 | 246 | Article |
| 6 | Rahman, M | Kanazawa University (Japan) | Chemosphere | Aquatic arsenic: phytoremediation using floating macrophytes | 2011 | 230 | Review |
| 7 | Khanam, R/Nayak, A | ICAR – National Rice Research Institute (India) | Science of the Total Environment | Metal (loid) s (As, Hg, Se, Pb and Cd) in paddy soil: Bioavailability and potential risk to human health | 2019 | 178 | Review |
| 8 | Hernández, L | Universidad Autónoma de Madrid (Spain) | Journal of Experimental Botany | Contribution of glutathione to the control of cellular redox homeostasis under toxic metal and metalloid stress | 2015 | 174 | Review |
| 9 | Wang, L/Hou, D | Tsinghua University (China) | Environment international | Remediation of mercury contaminated soil, water, and air: A review of emerging materials and innovative technologies | 2020 | 164 | Review |
| 10 | Akpor, O | Tshwane University of Technology (South Africa) | International Journal of Physical Sciences | Remediation of heavy metals in drinking water and wastewater treatment systems: processes and applications | 2010 | 158 | Review |
| 11 | Arao, T | National Institute for Agro-Environmental Sciences (Japan) | Paddy and water Environment | Heavy metal contamination of agricultural soil and countermeasures in Japan | 2010 | 158 | Review |
| 12 | Gaur, N | School of Biotechnology, Rajiv Gandhi Proudyogiki Vishwavidyalaya (India) | [Environmental Science: Processes & Impacts](https://pubs.rsc.org/en/journals/journal/em) | A review with recent advancements on bioremediation-based abolition of heavy metals | 2014 | 139 | Review |
| 13 | Singh, J | BB Ambedkar (Central) University (India) | Gene | Genetically engineered bacteria: an emerging tool for environmental remediation and future research perspectives | 2011 | 138 | Review |
| 14 | Bonanno, G | University of Catania (Italy) | [Ecotoxicology and Environmental Safety](https://www.sciencedirect.com/journal/ecotoxicology-and-environmental-safety) | Comparative performance of trace element bioaccumulation and biomonitoring in the plant species Typha domingensis, Phragmites australis and Arundo donax | 2013 | 125 | Article |
| 15 | Marrugo-Negrete, J/ Díez, S | University of Córdoba (Colombia)/ Institute of Environmental Assessment and Water Research (Spain) | [Chemosphere](https://www.sciencedirect.com/journal/chemosphere) | Phytoremediation of mercury-contaminated soils by *Jatropha curcas* | 2015 | 122 | Article |
| 16 | Li, K/ Ramakrishna, W | Michigan Technological University (USA) | Journal of hazardous materials | Effect of multiple metal resistant bacteria from contaminated lake sediments on metal accumulation and plant growth. | 2011 | 106 | Article |
| 17 | Monterroso, C | Universidade de Santiago de Compostela (Spain) | [Applied Geochemistry](https://www.sciencedirect.com/journal/applied-geochemistry) | Heavy metal distribution in mine-soils and plants growing in a Pb/Zn-mining area in NW Spain | 2014 | 96 | Article |
| 18 | Mleczek, M/ Rutkowski, P | University of Life Sciences in Poznan (Poland) | [Biomass and Bioenergy](https://www.sciencedirect.com/journal/biomass-and-bioenergy) | Biomass productivity and phytoremediation potential of *Salix alba* and *Salix viminalis* | 2010 | 90 | Article |
| 19 | Bonanno, G | University of Catania (Italy) | Ecotoxicology and Environmental Safety | Comparative analysis of element concentrations and translocation in three wetland congener plants: *Typha domingensis*, *Typha latifolia* and *Typha angustifolia* | 2017 | 88 | Article |
| 20 | Li, W | The Hong Kong Institute of Education (Hong Kong) | Environmental Science and Pollution Research | Health risk and significance of mercury in the environment | 2015 | 87 | Review |

**Table S5.** Most cited papers on phytoremediation of mercury pollution in Scopus

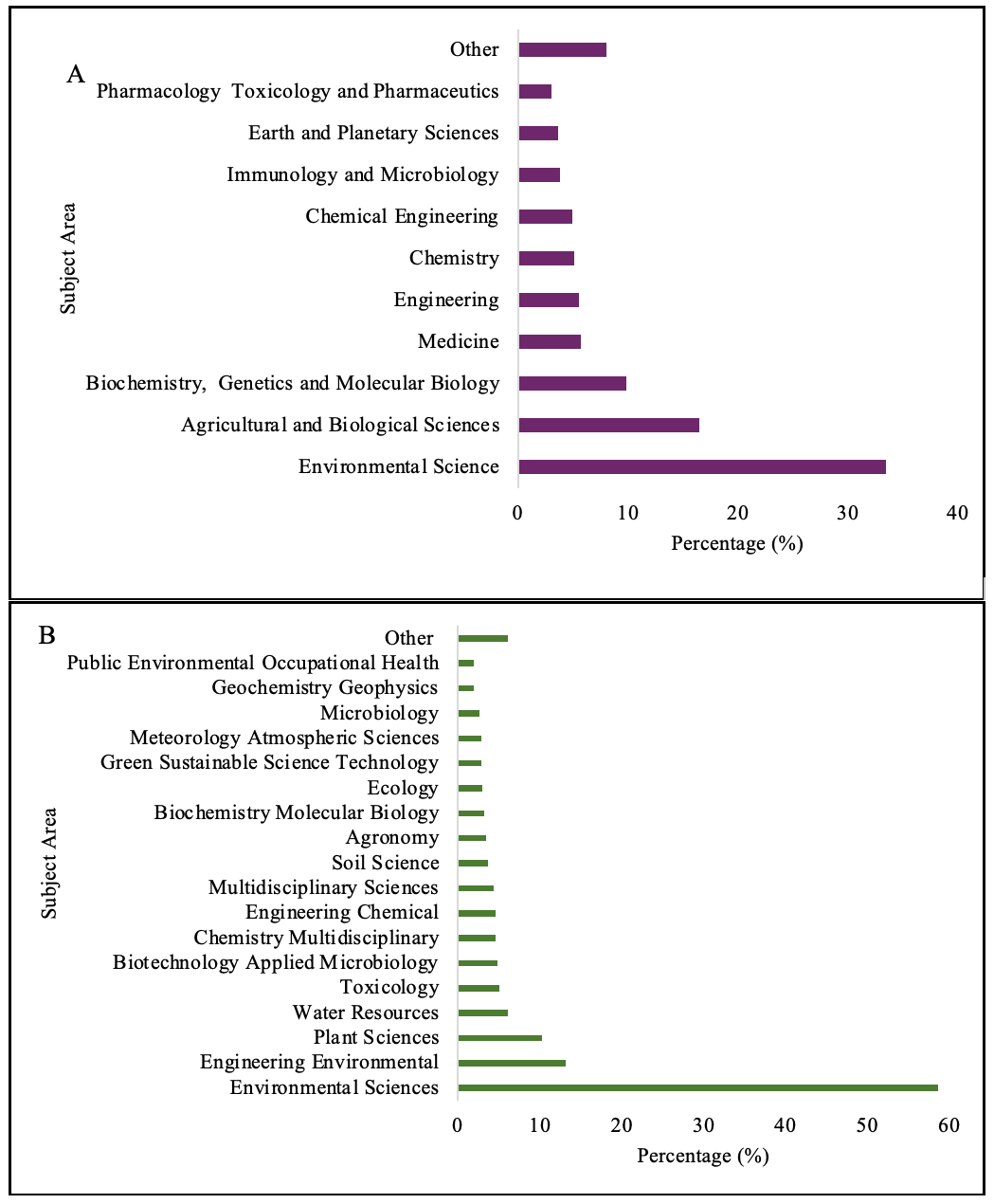
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No | First author/ Corresponding author | Institution and Country of origin (based on first author’s affiliation) | Journal | Tittle | Publication Year | Citations | Document type |
| 1 | Schützendübel, A | Georg-August-University Göttingen (Germany) | Journal of experimental botany | Plant responses to abiotic stresses: heavy metal‐induced oxidative stress and protection by mycorrhization | 2002 | 1766 | Review |
| 2 | Mulligan, C. | Concordia University (Canadá) | Engineering geology | Remediation technologies for metal-contaminated soils and groundwater: an evaluation | 2001 | 1235 | Review |
| 3 | He, J | Zhejiang University  (China) and University of Florida (USA) | Journal of Trace Elements in Medicine and Biology | Trace elements in agroecosystems and impacts on the environment. | 2005 | 1171 | Review |
| 4 | Tangahu, B | Universiti Kebangsaan (Malaysia) | [International Journal of Chemical Engineering](https://www.hindawi.com/journals/ijce/) | A review on heavy metals (As, Pb, and Hg) uptake by plants through phytoremediation | 2011 | 1099 | Review |
| 5 | Liu, L/ Guo, M | Delaware State University (USA) | [Science of The Total Environment](https://www-sciencedirect-com.udea.lookproxy.com/journal/science-of-the-total-environment) | Remediation techniques for heavy metal-contaminated soils: Principles and applicability | 2018 | 954 | Review |
| 6 | McGrath, S | Rothamsted Research (United Kingdom) | [Current Opinion in Biotechnology](https://www-scopus-com.udea.lookproxy.com/sourceid/15579?origin=resultslist) | [Phytoextraction of metals and metalloids from contaminated soils](https://www-scopus-com.udea.lookproxy.com/record/display.uri?eid=2-s2.0-0037805665&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=3deebd892a226beb82cb6c0e7fd08f9e&sot=sl&sdt=sl&sl=0&relpos=5&citeCnt=903&searchTerm=) | 2003 | 902 | Review |
| 7 | Wong, M | Hong Kong Baptist University (Hong Kong) | [Chemosphere](https://www.sciencedirect.com/journal/chemosphere) | Ecological restoration of mine degraded soils, with emphasis on metal contaminated soils | 2003 | 861 | Review |
| 8 | Weis, J | Rutgers University (USA) | [Environment International](https://scopus.proxyutp.elogim.com/sourceid/20912?origin=resultslist) | [Metal uptake, transport and release by wetland plants: Implications for phytoremediation and restoration](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-3543120118&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=7&citeCnt=776&searchTerm=) | 2004 | 776 | Review |
| 9 | Ojuederie, O / Babalola, O | North-West University (South Africa) | International journal of environmental research and public health | Microbial and Plant-Assisted Bioremediation of Heavy Metal Polluted Environments: A Review | 2017 | 587 | Review |
| 10 | Gall, J / Rajakaruna, N | College of the Atlantic (USA) And North-West University (South Africa) | Environmental monitoring and assessment | Transfer of heavy metals through terrestrial food webs: a review | 2015 | 519 | Review |
| 11 | [Ashraf, S](https://scopus.proxyutp.elogim.com/authid/detail.uri?origin=resultslist&authorId=57202090122&zone=) | University of Agriculture (Pakistan) | [Ecotoxicology and Environmental Safety](https://scopus.proxyutp.elogim.com/sourceid/25076?origin=resultslist) | [Phytoremediation: Environmentally sustainable way for reclamation of heavy metal polluted soils](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-85062851127&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=10&citeCnt=493&searchTerm=) | 2019 | 483 | Review |
| 12 | Wang, J / Feng, X | Institute of Geochemistry, Chinese Academy of Sciences (China) | Journal of Hazardous Materials | [Remediation of mercury contaminated sites - A review](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-84861182735&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=11&citeCnt=474&searchTerm=) | 2012 | 472 | Review |
| 13 | Park, J / Lee, Y, Martinoia, E | University of Zurich (Zurich) and Pohang University of Science and Technology (Korea) | The Plant Journal | The phytochelatin transporters AtABCC1 and AtABCC2 mediate tolerance to cadmium and mercury | 2012 | 444 | Article |
| 14 | Patra, M. | University of Calcutta (India) | The Botanical Review | Mercury toxicity in plants | 2000 | 442 | Review |
| 15 | [McGrath, S](https://scopus.proxyutp.elogim.com/authid/detail.uri?origin=resultslist&authorId=7103260553&zone=) | Agriculture and the Environment Division IACR-Rothamsted (United Kingdom) | [Advances in Agronomy](https://scopus.proxyutp.elogim.com/sourceid/14324?origin=resultslist) | [Phytoremediation of metals, metalloids, and radionuclides](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-0037834631&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=14&citeCnt=420&searchTerm=) | 2002 | 419 | Review |
| 16 | Krämer, U | Max Planck Institute of Molecular Plant Physiology (Germany) | Current opinion in Biotechnology | Phytoremediation: novel approaches to cleaning up polluted soils | 2005 | 380 | Review |
| 17 | Doty, S | University of Washington (USA) | [New Phytologist](https://scopus.proxyutp.elogim.com/sourceid/19908?origin=resultslist) | [Enhancing phytoremediation through the use of transgenics and endophytes](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-47249116128&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=16&citeCnt=373&searchTerm=) | 2008 | 371 | Review |
| 18 | Eapen, S | Bhabha Atomic Research Centre (India) | [Biotechnology Advances](https://scopus.proxyutp.elogim.com/sourceid/15461?origin=resultslist) | [Prospects of genetic engineering of plants for phytoremediation of toxic metals](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-18444410193&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=17&citeCnt=349&searchTerm=) | 2005 | 348 | Review |
| 19 | Li, C / Yan, X | Academy of Agricultural Sciences (China) | [Soil and Sediment Contamination](https://scopus.proxyutp.elogim.com/sourceid/24512?origin=resultslist) | [A Review on Heavy Metals Contamination in Soil: Effects, Sources, and Remediation Techniques](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-85064039658&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=18&citeCnt=343&searchTerm=) | 2019 | 340 | Review |
| 20 | Lebeau, T | University of Haute-Alsace (France) | [Environmental Pollution](https://scopus.proxyutp.elogim.com/sourceid/23916?origin=resultslist) | [Performance of bioaugmentation-assisted phytoextraction applied to metal contaminated soils: A review](https://scopus.proxyutp.elogim.com/record/display.uri?eid=2-s2.0-43549107709&origin=resultslist&sort=cp-f&listId=60893008&listTypeValue=Docs&src=s&nlo=&nlr=&nls=&imp=t&sid=6290c3840ea871e8c5eac79ffa17a26f&sot=sl&sdt=sl&sl=0&relpos=19&citeCnt=302&searchTerm=) | 2008 | 301 | Review |

**Table S6.** Top 31 Keywords with the Strongest Citation Bursts in WoS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Keywords | Frequently | Year\_q1 | Year\_med | Year\_q3 |
| Diversity | 12 | 2020 | 2022 | 2023 |
| Soils | 44 | 2015 | 2020 | 2022 |
| Remediation | 43 | 2018 | 2020 | 2022 |
| Lead | 40 | 2018 | 2020 | 2022 |
| Pb | 19 | 2018 | 2021 | 2022 |
| Plant-Growth | 16 | 2019 | 2021 | 2022 |
| Stress | 16 | 2017 | 2021 | 2022 |
| Cadmium Accumulation | 9 | 2020 | 2022 | 2022 |
| *Oryza-Sativa* L. | 6 | 2020 | 2022 | 2022 |
| Escherichia-coli | 9 | 2010 | 2013 | 2021 |
| Cadmium | 88 | 2014 | 2018 | 2021 |
| Mercury | 48 | 2015 | 2018 | 2021 |
| Phytoremediation | 184 | 2015 | 2019 | 2021 |
| Heavy-Metals | 155 | 2016 | 2019 | 2021 |
| Accumulation | 152 | 2015 | 2019 | 2021 |
| Aquatic macrophytes | 10 | 2014 | 2016 | 2020 |
| Phytoextraction | 51 | 2014 | 2017 | 2020 |
| Resistance | 16 | 2014 | 2017 | 2020 |
| Plants | 84 | 2015 | 2018 | 2020 |
| Availability | 6 | 2012 | 2014 | 2019 |
| Metal | 5 | 2013 | 2015 | 2019 |
| Zinc | 19 | 2012 | 2016 | 2019 |
| Metals | 17 | 2014 | 2016 | 2019 |
| Organic-Acids | 6 | 2012 | 2014 | 2018 |
| Glutathione | 11 | 2013 | 2017 | 2018 |
| Exposure | 9 | 2014 | 2015 | 2017 |
| *Thlaspi-caerulescens* | 8 | 2012 | 2015 | 2017 |
| Areas | 7 | 2012 | 2013 | 2016 |
| Volatilization | 7 | 2010 | 2010 | 2014 |
| Nickel | 5 | 2012 | 2013 | 2013 |

**Table S7.** Top 24 Keywords with the Strongest Citation Bursts in Scopus

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Keywords | Frequently | Year\_q1 | Year\_med | Year\_q3 |
| Article | 207 | 2010 | 2016 | 2019 |
| Plant root | 99 | 2012 | 2016 | 2019 |
| Mercury (Element) | 148 | 2011 | 2016 | 2020 |
| Phytoremediation | 593 | 2012 | 2017 | 2020 |
| Mercury | 504 | 2012 | 2017 | 2020 |
| Bioremediation | 411 | 2014 | 2017 | 2020 |
| Soil pollution | 357 | 2014 | 2018 | 2021 |
| Heavy metal | 260 | 2015 | 2018 | 2021 |
| Arsenic | 137 | 2014 | 2018 | 2021 |
| Soil pollutant | 135 | 2016 | 2019 | 2021 |
| Soil pollutants | 130 | 2015 | 2019 | 2021 |
| Heavy | 94 | 2015 | 2019 | 2022 |
| Soil | 177 | 2017 | 2020 | 2022 |
| China | 60 | 2017 | 2020 | 2022 |
| Phytostabilization | 32 | 2015 | 2020 | 2022 |
| Human | 49 | 2016 | 2021 | 2022 |
| Humans | 37 | 2015 | 2021 | 2022 |
| Ecosystem | 36 | 2017 | 2021 | 2022 |
| Risk Assessment | 38 | 2020 | 2022 | 2022 |
| Siderophore | 13 | 2021 | 2022 | 2022 |
| Inductively coupled plasma mass spectrometry | 13 | 2019 | 2022 | 2023 |
| Agricultural land | 8 | 2022 | 2023 | 2023 |
| Mycorrhizae | 7 | 2016 | 2023 | 2023 |
| Brassicaceae | 5 | 2017 | 2023 | 2023 |



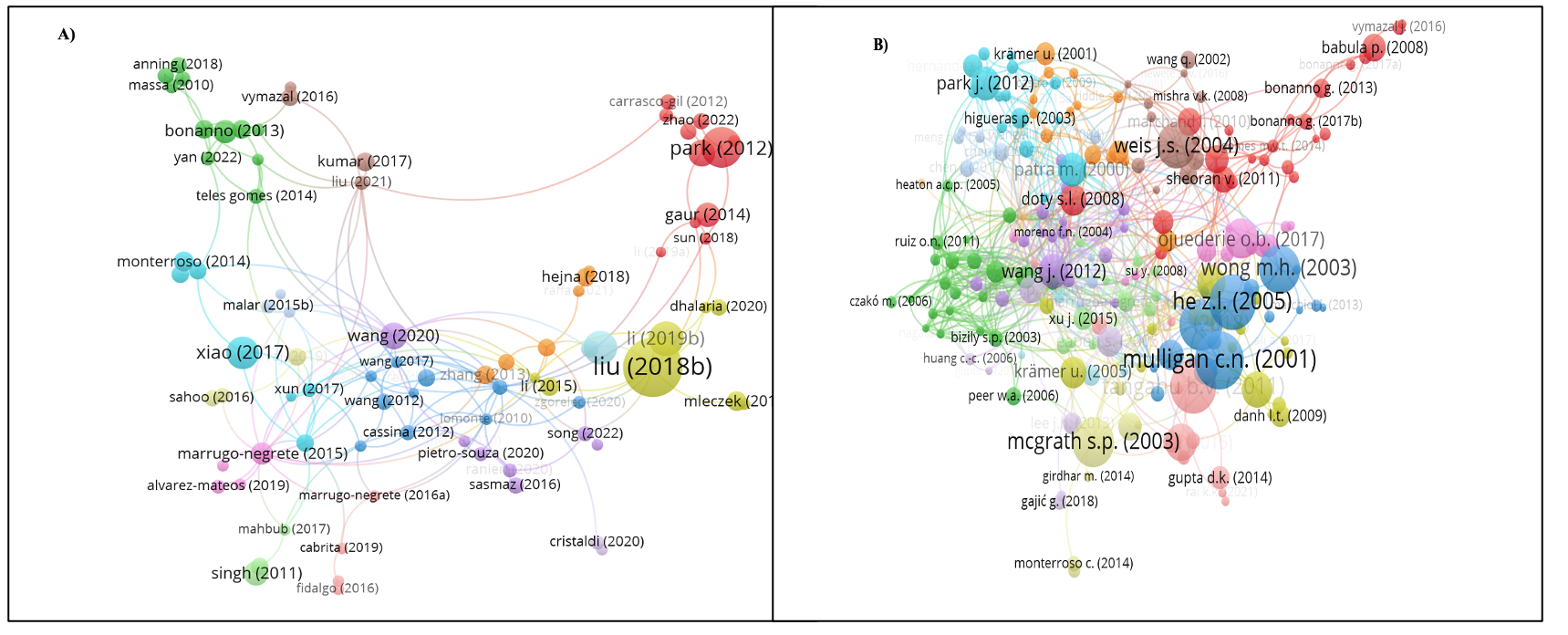
**Figure S1.** Documents by subject area: A) Scopus and B) WoS

**A map of the world with numbers

Description automatically generated**

**Figure S2.** Countries’ Scientific production: A) WoS and B) Scopus

The intensity of the blue color is related to the countries with the highest number of published papers. In contrast, the gray color is related to the countries where no papers related to this topic have been published.



**Figure S3.** Highly cited articles: A) WoS and B) Scopus