

CV – Anders Johansen

Name: Anders Johansen. **Born:** August 10th, 1956 / Ph.D. degree in microbiology, Senior Scientist

Personal website: <https://pure.au.dk/portal/en/persons/anders-johansen> (a321bf32-5b17-4273-866a-cf276147b4f0).html.

ORCID: <https://orcid.org/0000-0001-7115-948X>

Education:

Ph.D. in Biology, 1992 (Role of mycorrhizal fungi in plant nutrition, Dept. Microbial Ecology, Copenhagen Univ.).

M.Sc. in Biology, 1988 (soil microbial ecology, Dept. of Population Biology, Copenhagen Univ.).

Main research areas/activities: Environmental microbial ecology. Bioremediation/biodegradation of different organic micropollutants (pesticides, chlorinated solvents, endocrine disrupters, cyanotoxins, oil constituents) in soil, groundwater, biofilters/bioGAC filters and constructed wetlands. Bioaugmentation and monitored natural attenuation using biomolecular methodology. Influence of agricultural management practice on soil quality and key microbial parameters. Fungal volatiles as early-warning bioindicators of microbial food spoilage. Public policy advises and consultancy for private sector. Supervision of master and Ph.D. students. I have supervised/co-supervised 8 Ph.D. students. Regular censor on master and bachelor examines at Copenhagen University. After four years as head of section, I have returned to research and advisory work.

Employments:

2023-pres Senior Scientist at Dept. of Environmental Science at AU

2019-2023 Head of Section of Environmental Microbiology (appr. 42 staff)

2006-2019 Senior Scientist at Dept. of Environmental Science (Land-care Research/NZ for 7 months, 2007-8)

2002-2006 Project Senior Scientist at AU

2001-2002 Not working (family caretaking)

2000-2001 Project Senior Scientist at AU

1997-2000 Post doc at Copenhagen Univ.

1995-1996 Own private consultancy company (BIKO)

1992-1994 Post doc at Risø-DTU (visiting scientist at Lund University/SE for 6 month).

Relevant grants as main coordinator recent years - amount to AU:

2014, In situ test of stimulated aerobic degradation of pesticides in contamination hotspot (100,000 DKR) Technology Development Fund, Region Zealand/Danish EPA; 2014, Food Spoilage (714,000 DKR) DK Innovation Fund; 2017, Sol-gel technology for precise measurement of soil bacterial- fungal Interactions at warm and cold climates and with relevance for degradation of organic contaminants (285,000 DKR) International Network Program, Danish Agency for Science and Higher Education; 2017, writing scientific paper on monitored natural attenuation of pesticides in groundwater (85,000 DKR) DCE Aarhus University. Consultancy private enterprises and NGOs (~350,000 DKR in 2021-2023). 2024, EU Soil Monitoring Program (150.000 DKR) Danish EPA.

Publication data:

56 (23 as first or last/corresponding author) peer reviewed journal articles in international journals, 5 reports, 12 proceeding papers, 32 posters at Int. conferences, 7 popular articles. Contributed 2 interviews in journals, magazines.

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|-------------------------------------|------|---|-----|
| Peer-reviewed publications | 56 | h-index (<i>google Scholar</i>) | 34 |
| Citations (<i>Web of Science</i>) | 2104 | Publications in top 10% journals by CiteScore Percentile (SciVal) | 80% |

- 1 Nybroe O, **Johansen A**, Laake M (1990) Enzyme-linked immunosorbent assays for detection of *Pseudomonas fluorescens* in sediment samples. *Letters in Applied Microbiology* 11:293-296. **DOI:** 10.1111/j.1472-765X.1990.tb00185.x, 19 WOS citations.
- 2 **Johansen A**, Jakobsen I, Jensen ES (1992) Hyphal transport of ¹⁵N-labelled nitrogen by a vesicular-arbuscular mycorrhizal fungus and its effect on depletion of inorganic soil N. *New Phytologist* 122:281-288. **DOI:** 10.1111/j.1469-8137.1992.tb04232.x. 136 WOS citations.
- 3 **Johansen A**, Jakobsen I, Jensen ES (1993) Hyphal transport by a vesicular-arbuscular mycorrhizal fungus of N applied to the soil as ammonium or nitrate. *Biology and Fertility of Soils* 16:66-70. 81 WOS citations.
- 4 **Johansen A**, Jakobsen I, Jensen ES (1993) External hyphae of vesicular-arbuscular mycorrhizal fungi associated with *Trifolium subterraneum* L. 3. Hyphal transport of ³²P and ¹⁵N. *New Phytologist* 124:61-68. **DOI:** 10.1111/j.1469-8137.1993.tb03797.x. 86 WOS citations.
- 5 **Johansen A**, Jakobsen I, Jensen ES (1994) Hyphal N transport by a vesicular-arbuscular mycorrhizal fungus associated with cucumber grown at three nitrogen levels. *Plant and Soil* 160:1-9. **DOI:** doi.org/10.1007/BF00150340. 118 WOS citation.
- 6 **Johansen A**, Finlay RD, Olsson PA (1996) N metabolism in the external hyphae of the arbuscular mycorrhizal fungus *Glomus intraradices*. *New Phytologist* 133:705-712. **DOI:** 10.1111/j.1469-8137.1996.tb01939.x. 110 WOS citations.
- 7 **Johansen A**, Jensen ES (1996) Transfer of N and P from intact or decomposing roots of pea to barley interconnected by an arbuscular mycorrhizal fungus. *Soil Biology and Biochemistry* 28:73-81. **DOI:** doi.org/10.1016/0038-0717(95)00117-4. 112 WOS citations.

- 8 Johansen A (1999) Depletion of soil mineral N by hyphae of AM fungi associated with roots of *Cucumis sativus* L. *Plant and Soil* 209:119-127. DOI: 10.1023/A:1004558126118. 24 WOS citations.
- 9 Joner EJ, Johansen A (2000) Phosphatase activity of external hyphae of two arbuscular mycorrhizal fungi. *Mycological Research* 104:81-86. DOI: 10.1017/S0953756299001240. 69 WOS citations.
- 10 Olsson PA, Johansen A (2000) Lipid and fatty acid composition of hyphae and spores of arbuscular mycorrhizal fungi at different growth stages. *Mycological Research* 104:429-439. DOI: 10.1017/S0953756299001410. 102 WOS citations.
- 11 Hawkins H, Johansen A, George E (2000) Uptake, uptake mechanisms, and transport of organic and inorganic nitrogen by arbuscular mycorrhizal fungi. *Plant and Soil* 226:275-285. DOI: 10.1023/A:1026500810385. 201 WOS citations.
- 12 Joner EJ, Johansen A (2000) Phosphatase activity of external hyphae of two arbuscular mycorrhizal fungi. *Mycological Research* 104:81-86. DOI: 10.1017/S0953756299001240. 166 WOS citations.
- 13 Thirup L, Johansen A, Winding A (2003) Microbial succession in the rhizosphere of live and decomposing barley roots as affected by the antagonistic strain *Pseudomonas fluorescens* DR54 or the fungicide imazalil. *FEMS Microbiology Ecology* 43:383-392. DOI: 10.1111/j.1574-6941.2003.tb01079.x. 31 WOS citations.
- 14 Holst T, Jørgensen NOG, Jørgensen C, Johansen A (2003) Degradation of microcystin in sediments at oxic and anoxic, denitrifying conditions. *Water Research* 37:4748-4760. DOI: 10.1016/S0043-1354(03)00413-5. 123 WOS citations.
- 15 Ekelund F, Olsson S, Johansen A (2003) Changes in the succession of protozoan and microbial populations in soil spiked with a range of copper concentrations. *Soil Biology and Biochemistry* 35:1507-1516. DOI: 10.1016/S0038-0717(03)00249-9. 31 WOS citations.
- 16 Johansen A, Olsson S (2005) Using phospholipid acid technique to study short term effects of the biological control agent *Pseudomonas fluorescens* DR54 on the microbial population in barley rhizosphere. *Microbial Ecology* 49:1-10. DOI: 10.1007/s00248-004-0135-2. 31 WOS citations.
- 17 Johansen A, Knudsen IMB, Binnerup SJ, Winding A, Johansen JE, Jensen LE, Andersen KS, Svenning MM, Bonde TA (2005) Non-target effects of the microbial control agents *Pseudomonas fluorescens* DR54 and *Clonostachys rosea* IK726 in soils grown with barley followed by sugar beet: a greenhouse assessment. *Soil Biology and Biochemistry* 37:2225-2239. DOI: 10.1016/j.soilbio.2005.04.004. 30 WOS citations.
- 18 Larsen J, Johansen A, Larsen SE, Heckman LH, Jakobsen I, Krogh PH (2008) Population performance of collembolans feeding on soil fungi from different ecological niches. *Soil Biology & Biochemistry* 40:360-369. DOI: 10.1016/j.soilbio.2007.08.016. 38 WOS citations.
- 19 Johansen A, Pedersen AL, Jensen KA, Karlson U, Hansen BM, Scott-Fordsmand JJ, Winding A (2008) Effects of C60 fullerene nanoparticles on soil bacteria and protozoans. *Environmental Toxicology and Chemistry* 27:1895-1903. DOI: 10.1897/07-375.1. 94 WOS citations.
- 20 Scott-Fordsmand JJ, Krogh PH, Maike S, Johansen A (2008) The toxicity testing of Double-Walled NanoTubes contaminated food to *Eisenia veneta*. *Ecotoxicology and Environmental Safety* 71:616-619. DOI: 10.1016/j.ecoenv.2008.04.011. 93 WOS citations.
- 21 Pedersen AL, Ekelund F, Johansen A, Winding A (2010) Interaction of bacterial feeding flagellates and antagonistic *Pseudomonas*. *Biology and Fertility of Soils* 46:151-158. DOI: 10.1007/s00374-009-0417-4. 8 WOS citations.
- 22 Carter M, Hauggaard-Nielsen H, Heiske S, Jensen M, Thomsen ST, Schmidt JE, Johansen A, Ambus P (2012) Consequences of field N₂O emissions for the environmental sustainability of plant-based biofuels produced within an organic farming system. *Global Change Biology* 4:435-452. DOI: 10.1111/j.1757-1707.2011.01132.x. 20 WOS citations.
- 23 Müller-Stöver D, Hauggaard-Nielsen H, Eriksen J, Ambus P, Johansen A (2012) Microbial biomass, microbial diversity, soil carbon storage, and stability after incubation of soil from grass-clover pastures of different age. *Biology and Fertility of Soils* 48:371-383. DOI: 10.1007/s00374-011-0633-6. 15 WOS citations.
- 25 Schmidt M, Priemé A, Johansen A, Stougaard P (2012) *Alkalilactibacillus ikkensis*, gen. nov., sp. nov., a novel enzyme-producing bacterium from a cold and alkaline environment in Greenland. *Extremophiles* 16:297-305. DOI: 10.1007/s00792-012-0430-7. 3 WOS citations.
- 26 Johansen A, Carter MS, Jensen ES, Hauggaard-Nielsen H, Ambus P (2013) Effects of digestate from anaerobic fermented cattle slurry and plant materials on soil microbiota and fertility. *Applied Soil Ecology* 16:297-305. DOI: 10.1016/j.apsoil.2012.09.003. 66 WOS citations.
- 27 Ellegaard-Jensen L, Jensen KA, Johansen A (2012) Nano-silver induces dose-response effects on nematode *Caenorhabditis elegans*. *Ecotoxicology and Environmental Safety* 80:216-223. DOI: 10.1016/j.scitotenv.2013.07.095. 38 WOS citations.
- 28 Hauggaard-Nielsen H, Johansen A, Carter MS, Ambus P, Jensen ES (2012) Strip intercropping of alternating perennial grass-clover and annual rye-vetch intercrops when grown within an organic farming system. *Field Crop Research*. 136:1-11. DOI: 10.1016/j.fcr.2012.07.003. 3 WOS citations.

- 29 **Johansen A**, Carlsgart J, Hansen CM, Roepstorff A, Andreasen C, Nielsen HB (2013) Survival of animal parasites and weed seeds as affected by anaerobic digestion at meso- and thermophilic conditions. *Waste Management*. 33:807–812. **DOI:** 10.1016/j.wasman.2012.11.001. 19 WOS citations.
- 30 Hauggaard-Nielsen H, **Johansen A**, Carter MS, Ambus P, Jensen ES (2013) Annual maize and perennial grass-clover strip cropping for increased resource use efficiency and productivity using organic farming practice as a model. *European Journal of Agronomy*. 47:55-64. **DOI:** 10.1016/j.eja.2013.01.004. 8 WOS citations.
- 31 Pedroli B, Elbersen B, Frederiksen P, Grandin U, Heikkilä R, Krogh PH, Izakovicova Z, **Johansen A**, Meiresonne L, Spijker J (2013) Is biomass production in Europe compatible with biodiversity ? – Opportunities and threats to biodiversity from land-based energy cropping. *Special Issue Energy Landscapes – Biomass & Bioenergy*. 55:73-86. **DOI:** 10.1016/j.biombioe.2012.09.054. 75 WOS citations.
- 32 Ellegaard-Jensen L, Knudsen BE, **Johansen A**, Albers CN, Aamand J, and Rosendahl S. (2014) Fungal-bacterial consortium increases diuron degradation in water-unsaturated systems. *Science of the Total Environment*. 466:699-705. **DOI:** 10.1016/j.scitotenv.2013.07.095. 87 WOS citations.
- 33 Sechi V, D'Annibale A, Maraldo K, **Johansen A**, Jensen J; Krogh PH. (2014) Species composition of a soil invertebrate multi-species test system determines the level of ecotoxicity. *Environmental Pollution*. 184:586-596. **DOI:** 10.1016/j.envpol.2013.10.008. 9 WOS citations.
- 34 Frková Z, Badawi N, **Johansen A**, Schultz-Jensen N, Bester K, Sørensen SR, Karlson UG. (2014) Degradation of three benzonitrile herbicides by *Aminobacter* MSH1 and soil microbial communities: pathways and kinetics. *Pest Management Science*. 70:1291-1298. **DOI:** 10.1002/ps.3697. 8 WOS citations.
- 35 Frková Z, **Johansen A**, Karlson UG. (2015) Mecoprop mineralization potential at oxygen-reduced conditions in subsoil with phenoxy acid contamination history. *Soil biology & Biochemistry*. 84:189-198. **DOI:** 10.1016/j.soilbio.2015.02.004. 1 WOS citation.
- 36 Imperato V, Santos S, **Johansen A**, Winding A (2016) Stimulation of bacteria and protists by in rhizosphere of glyphosate-treated barley. *Applied Soil Ecology*. 98:47-55. **DOI:** 10.1016/j.apsoil.2015.09.007. 17 WOS citations.
- 37 Frkova Z, **Johansen A**, de Jonge LW, Olsen P, Karlson UG, Bester K (2016) Degradation and enantiomeric fractioning of mecoprop in soil previously exposed to phenoxy acid herbicides - new insights into remediation. *Science of the Total Environment*. 569:1457-1465. **DOI:** 10.1002/ps.3697. 8 WOS citations.
- 38 Griffiths BS, Römbke J, Schmelz R, Scheffczyk A, Faber J, Bloem J, Pérès G, Cluzeau D, Chabbi A, Suhadolc M, Sousa P, Silva PM, Carvalho F, Mendes S, Morais P, Francisco R, Pereira C, Bonkowski M, Geisen S, Bardgett R, de Vries F, Bolger T, Dirilgen T, Schmidt O, Winding A, Hendriksen N, **Johansen A**, Philippot L, Plassart P, Bru D, Thompson B, Griffiths R, Keith A, Rutgers M, Mulder C, Hannula E, Creamer R, Stone D (2016) Selecting cost effective and policy-relevant biological indicators for European monitoring of soil biodiversity and ecosystem function. *Ecological Indicators*. 69:213-223. **DOI:** 10.1016/j.ecolind.2016.04.023. 35 WOS citations.
- 39 Nunes I, Jacquioud S, Brejnrod A, Holm PE, **Johansen A**, Brandt KK, Priemé A, Sørensen SS (2016) Coping with copper: legacy effect of copper on potential activity of soil bacteria following a century of exposure. *FEMS Microbial Ecology*. 92: 1-12. **DOI:** 10.1093/femsec/fiw175. 58 WOS citations.
- 40 Wang A, Casadei F, **Johansen A**, (2016) Emission of volatile organic compounds from healthy and diseased onions. Conference: 3rd International Symposium on Postharvest Pathology - Using Science to Increase Food Availability, Bari, ITALY Date: JUN 07-11, 2015. Book Series: Acta Horticulturae, Vol. 1144: 333-339. **DOI:** 10.17660/ActaHortic.2016.1144.49. 5 WOS citations.
- 41 Imperato V, Hansen V, Santos SS, Nielsen TK, Giagnoni L, Hauggaard-Nielsen H, **Johansen A**, Renella G, Winding A (2016) Gasification biochar has limited effects on functional and structural diversity of soil microbial communities in a temperate agroecosystem. *Soil Biology & Biochemistry*. 99:128-136. **DOI:** 10.1016/j.soilbio.2016.05.004. 19 WOS citations.
- 42 Casas ME, Nielsen TK, Kot W, Hansen LH, **Johansen A**, Bester K (2017) Degradation of mecoprop in polluted landfill leachate and waste water in a moving bed biofilm reactor. *Water Research* 121:213-220. **DOI:** 10.1016/j.watres.2017.05.031. 8 WOS citations.
- 43 Wang A, Haapalainen M, Latvala S, Edelenbos M, **Johansen A** (2018) Discriminant analysis of volatile organic compounds of *Fusarium oxysporum* f. sp. cepae and *Fusarium proliferatum* isolates from onions as indicators of fungal growth. *Fungal Biology* 22:1013-1022. **DOI:** 10.1016/j.funbio.2018.07.005. 7 WOS citations.
- 44 Wang A, Islam MN, **Johansen A**, Haapalainen M, Latvala S, Edelenbos M (2019) Pathogenic *Fusarium oxysporum* f. sp. cepae growing inside onion bulbs after harvest emits volatile organic compounds that correlate with fungal specific DNA. *Postharvest Biology and Technology*. **DOI:** 10.1016/j.postharvbio.2019.02.010. 33 WOS citations.
- 45 Murray AM, Ottosen CB, Maillard J, Holliger C, **Johansen A**, Brabæk L, Kristensen I L, Zimmermann J, Hunkeler D, Broholm MM (2019) Chlorinated ethene plume evolution after source thermal remediation:

- Determination of degradation rates and mechanisms. *Journal of Contaminant Hydrology* 227:1-17. DOI: 10.1016/j.jconhyd.2019.103551. 11 WOS citations.
- 46 Hylling A, Carstens AB, Kot W, Hansen M, Neve H, Franz CMAP, **Johansen A**, Ellegaard-Jensen L, Hansen LH (2020) Two novel bacteriophage genera from a groundwater reservoir highlight subsurface environments as underexplored biotopes in bacteriophage ecology. *Scientific Reports* 10:11879, DOI: 10.1038/s41598-020-68389-1.
- 47 Ji Z, Huang Y, Feng Y, **Johansen A**, Xue J, Tremblay LA, Li Z (2021) Effects of pristine micro- and nanoplastics on soil invertebrates: A systematic review and meta-analysis of available data. *Science of The Total Environment*. DOI: 10.1016/j.scitotenv.2021.147784. 26 WOS citations.
- 48 Doting EL, Davie-Martin CL, **Johansen A**, Benning LG, Tranter M, Rinnan R, Anesio AM (2022) Greenland ice sheet surfaces colonized by microbial communities emit volatile organic Compounds. *Frontiers in Microbiology*. 13:886293. DOI: 10.3389/fmicb.2022.886293.
- 49 Liu Y, Feng M, **Johansen A**, Cheng D, Xue J, Feng Y, Fan S, Li Z (2023) Composting reduces the risks of antibiotic resistance genes in maize seeds posed by gentamicin fermentation waste. *Science of The Total Environment* 870:161785. DOI: 10.1016/j.scitotenv.2023.161785.
- 50 Fan S, Li C, Guo J, **Johansen A**, Liu Y, Feng Y, Xue J, Li Z (2023) Biodegradation of phthalic acid esters (PAEs) by *Bacillus* sp. LUNF1 and characterization of a novel hydrolase capable of catalyzing PAEs. *Environmental Technology & Innovation* 32: 103269. DOI: 10.1016/j.eti.2023.103269.
- 51 Rittl TF, Pommeresche R, **Johansen A**, Steinshamn H, Riley H, Løes A-K (2023) Anaerobic digestion of dairy cattle slurry – long-term effects on crop yields and chemical soil characteristics. *Organic Agriculture*. 13:1-17. DOI: 10.1007/s13165-023-00447-0.
- 52 Thyssen LA, Martinez i Quer A, Arias CA, Ellegaard-Jensen L, Carvalho PN, **Johansen A** (2024) Constructed wetland mesocosms improve the biodegradation of microcystin-LR and cylindrospermopsin by indigenous bacterial consortia. *Harmful Algae*. 131:102549. DOI: 10.1016/j.hal.2023.102549.
- 53 Martinez i Quer A, Larsson Y, **Johansen A**, Arias CA, Carvalho PN (2024) Cyanobacterial blooms in surface waters – Nature-based solutions, cyanotoxins and their biotransformation products. *Water Research*. DOI: 10.1016/j.watres.2024.121122.
- 54 Álvarez AG, Martinez i Quer A, Ellegaard-Jensen L, Sapkota R, Carvalho PN, **Johansen A** (2024) Fungal Removal of Cyanotoxins in Constructed Wetlands: the Forgotten Degradors. *Science of The Total Environment*. 929: 172590. DOI: 10.1016/j.scitotenv.2024.172590.
- 55 Aggerbeck MR, Frøkjær EE, **Johansen A**, Ellegaard-Jensen L, Hestbjerg Hansen L, Hansen M (2024) Non-target Analysis of Danish Wastewater Treatment Plant Effluent: Chemical Fingerprinting as a Monitoring Tool. *Environmental Research*. 257: 119242. DOI: 10.1016/j.envres.2024.119242.
- 56 Martinez i Quer A et al (2024) Saturated constructed wetlands for the remediation of cylindrospermopsin and microcystin-LR: plants, microbes, and biodegradation pathways. *Science of the Total Environment*. 948: 174745. DOI: 10.1016/j.scitotenv.2024.174745.