

List of publications

Peer reviewed articles in international journals and book chapters

98. Wikström J, Chaudhary S, Persson L, Wikström M, Fatehi J, Karlsson M (2025) Distribution of plant pathogenic *Aphanomyces* species in Sweden, Denmark and Lithuania and its relationship with soil factors. *Journal of Plant Pathology* (in press)
97. Gonzales V, Huallpan M, Ramirez X, San Miguel Y, Dubey M, Funck Jensen D, Karlsson M, Crespo C (2024) Rhizosphere bacteria from the Bolivian highlands improve drought tolerance in quinoa (*Chenopodium quinoa* Willd.). *Journal of Applied Microbiology* **135**:lxae296.
96. Chaudhary S, Ricardo R, Dubey M, Funck Jensen D, Grenville-Briggs L, Karlsson M (2024) Genotypic variation in winter wheat for fusarium foot rot and its biocontrol using *Clonostachys rosea*. *G3: Genes/Genomes/Genetics* jkae240.
95. Piombo E, Tzelepis G, Gustavsson Ruus A, Rafiei V, Funck Jensen D, Karlsson M, Dubey M (2024) Sterol regulatory element-binding proteins mediate intrinsic fungicide tolerance and antagonism in the fungal biocontrol agent *Clonostachys rosea*. *Microbiological Research* **289**:127922.
94. Piombo E, Vetukuri R, Konakalla N, Kalyandurg P, Sundararajan P, Funck Jensen D, Karlsson M, Dubey M (2024) Dicer-mediated RNA silencing is a key regulatory mechanism in the biocontrol fungus *Clonostachys rosea*-wheat interactions. *BMC Biology* **22**:219.
93. Sofianos G, Piombo E, Dubey M, Karlsson M, Karaoglanidis G, Tzelepis G (2024) Transcriptomic and functional analyses on a *Botrytis cinerea* multidrug resistant (MDR) strain provides new insights on the potential molecular mechanisms of MDR and fitness. *Molecular Plant Pathology* **25**:e70004.
92. Kälin C, Piombo E, Bourras S, Kolodinska Brantestam A, Dubey M, Elfstrand M, Karlsson M (2024) Transcriptomic analysis identifies candidate genes for *Aphanomyces* root rot disease resistance in pea. *BMC Plant Biology* **24**:144.
91. Piombo E, Vetukuri R, Tzelepis G, Funck Jensen D, Karlsson M, Dubey M (2024) Small RNAs: A new paradigm in fungal-fungal interactions used for biocontrol. *Fungal Biology Reviews* **48**:100356.
90. Bösch Y, Pold G, Saghai A, Karlsson M, Jones C, Hallin S (2023) Distribution and environmental drivers of fungal denitrifiers in global soils. *Microbiology Spectrum* **11**:e00061-23.
89. Himmelstrand K, Brandström Durling M, Karlsson M, Stenlid J, Olson Å (2023) Multiple rearrangements and low inter and intra species mitogenome sequence variation in the *Heterobasidion annosum* s.l. species complex. *Frontiers in Microbiology* **14**:1159811.
88. Stenberg J, Becher P, Jonsson M, Karlsson M, Sundh I, Viketoft M (2023) Political deafness may impede transition to biological control. *Trends in Plant Science* **28**:498-500.
87. Kälin C, Kolodinska Brantestam A, Arvidsson A, Dubey M, Elfstrand M, Karlsson M (2023) Evaluation of pea genotype PI180693 partial resistance towards *Aphanomyces* root rot in commercial pea breeding. *Frontiers in Plant Science* **14**:1114408.

86. Piombo E, Guaschino M, Funck Jensen D, Karlsson M, Dubey M (2023) Insights into the ecological generalist lifestyle of *Clonostachys* fungi through analysis of their predicted secretomes. *Frontiers in Microbiology* **14**:1112673.
85. Kälén C, Berlin A, Kolodinska Brantestam A, Dubey M, Arvidsson A, Riesinger P, Elfstrand M, Karlsson M (2022) Genetic diversity of the pea root pathogen *Aphanomyces euteiches* in Europe. *Plant Pathology* **71**:1570–1578.
84. Piombo E, Vetukuri R, Sundararajan P, Kushwaha S, Funck Jensen D, Karlsson M, Dubey M (2022) Comparative small RNA and degradome sequencing provide insights into antagonistic interactions in the biocontrol fungus *Clonostachys rosea*. *Applied and Environmental Microbiology* **88**:e00643-22.
83. Bösch Y, Jones C, Finlay R, Karlsson M, Larsbo M, Keller T, Hallin S (2022) Minimizing tillage modifies fungal denitrifier communities, increases denitrification rates and enhances the genetic potential for fungal relative to bacterial denitrification. *Soil Biology and Biochemistry* **170**:108718.
82. Mesny F, Miyauchi S, Thiergart T, Pickel B, Atanasova L, Karlsson M, Hüttel B, Barry K, Haridas S, Drula E, Henrissat B, Kohler A, Grigoriev I, Martin F, Hacquard S (2021) Genetic determinants of endophytism in the *Arabidopsis* root mycobiome. *Nature Communications* **12**:7227.
81. Piombo E, Vetukuri R, Broberg A, Kalyandurg P, Kushwaha S, Funck Jensen D, Karlsson M, Dubey M (2021) The role of Dicer-dependent RNA interference in regulating mycoparasitic interactions. *Microbiology Spectrum* **9**:e01099-21.
80. Funck Jensen D, Dubey M, Jensen B, Karlsson M (2021) *Clonostachys rosea* for the control of plant diseases. In: Köhl J, Ravensberg W (eds) *Microbial bioprotectants for plant disease management*. BDS Publishing, 429-471.
79. Elfstrand M, Chen J, Cleary M, Halecker S, Ihrmark K, Karlsson M, Davydenko K, Stenlid J, Stadler M, Brandström Durling M (2021) Comparative analyses of the *Hymenoscyphus fraxineus* and *Hymenoscyphus albidus* genomes reveals potentially adaptive differences in secondary metabolite and transposable element repertoires. *BMC Genomics* **22**:503.
78. Mgbeahuruike A, Ejiofor T, Ashang M, Ojiako C, Obasi C, Ezema C, Okoroafor O, Mwanza M, Karlsson M, Chah K (2021) Reduction of the adverse impacts of fungal mycotoxin on proximate composition of feed and growth performance in broilers by combined adsorbents. *Toxins* **13**:430.
77. Broberg M, Simaan H, Shmoish M, Rabner A, Karlsson M, Horwitz B (2021) Ferulic acid, an abundant maize phenolic, regulates ABC and MFS transporter gene expression in the maize pathogen *Cochliobolus heterostrophus*. *Journal of Plant Diseases and Protection* **128**:1383-1391.
76. Stenberg J, Sundh I, Becher P, Björkman C, Dubey M, Egan P, Friberg H, Gil J, Funck Jensen D, Jonsson M, Karlsson M, Khalil S, Ninkovic V, Rehmann del Rio G, Vetukuri R, Viketoft M (2021) When is it biological control? A framework of definitions, mechanisms, and classifications. *Journal of Pest Science* **94**:665-676.
75. Ben Amira M, Faize M, Karlsson M, Dubey M, Fraç M, Panek J, Fumanal B, Gousset-Dupont A, Julien J, Chaar H, Auguin D, Mom R, Label P, Venisse J (2021) Fungal X-

intrinsic protein aquaporin from *Trichoderma atroviride*: Structural and functional considerations. *Biomolecules* **11**:338.

74. Zapparata A, Baroncelli R, Brandström Durling M, Kubicek C, Karlsson M, Vannacci G, Sarrocco S (2021) Fungal cross-talk: an integrated approach to study distance communication. *Fungal Genetics and Biology* **148**:103518.

73. Ejioffor T, Mgbeahuruike A, Orjiakor C, Ushie A, Nwoko E, Remigius O, Dada T, Mwanza M, Karlsson M (2021) *Saccharomyces cerevisiae*, bentonite and kaolin as adsorbents for reducing the adverse impacts of mycotoxin contaminated feed on broiler histopathology and hemato-biochemical changes. *Veterinary World* **14**:23-32.

72. Dubey M, Funck Jensen D, Karlsson M (2021) Functional characterization of the AGL1 aegerolysin in the mycoparasitic fungus *Trichoderma atroviride* reveals a role in conidiation and antagonism. *Molecular Genetics and Genomics* **296**:131-140.

71. Broberg M, Dubey M, Iqbal M, Gudmundsson M, Ihrmark K, Schroers H, Funck Jensen D, Brandström Durling M, Karlsson M (2021) Comparative genomics highlights the importance of drug efflux transporters during evolution of mycoparasitism in *Clonostachys* subgenus *Bionectria* (Fungi, Ascomycota, Hypocreales). *Evolutionary Applications* **14**:476-497.

70. Tzelepis G, Karlsson M (2021) The fungal chitinases. In: Zaragoza O, Casadevall A (eds) *Encyclopedia of Mycology*. Elsevier, **1**:23-31.

69. Iqbal M, Broberg M, Haarith D, Broberg A, Bushley K, Brandström Durling M, Viketoft M, Funck Jensen D, Dubey M, Karlsson M (2020) Natural variation of root lesion nematode antagonism in the biocontrol fungus *Clonostachys rosea*, and identification of biocontrol factors through genome-wide association mapping. *Evolutionary Applications* **13**:2264-2283.

68. Kadoon A, Mgbeahuruike A, Karlsson M, Chah K (2020) Identification, antifungal susceptibility and phylogenetic comparison of fungal community in a poultry environment in Nigeria. *International Journal of Poultry Science* **19**:548-556.

67. Dubey M, Broberg M, Funck Jensen D, Karlsson M (2020) LysM proteins regulate fungal development and contribute to hyphal protection and biocontrol traits in *Clonostachys rosea*. *Frontiers in Microbiology* **11**:679.

66. Iqbal M, Dubey M, Broberg A, Viketoft M, Funck Jensen D, Karlsson M (2019) Deletion of the non-ribosomal peptide synthetase gene *nps1* in the fungus *Clonostachys rosea* attenuates antagonism and biocontrol of plant pathogenic *Fusarium* and nematodes. *Phytopathology* **109**:1698-1709.

65. Tzelepis G, Karlsson M (2019) Killer toxin-like chitinases in filamentous fungi: Structure, regulation and potential roles in fungal biology. *Fungal Biology Reviews* **33**:123-132.

64. Broberg M, Dubey M, Sun M, Ihrmark K, Schroers H, Li S, Funck Jensen D, Brandström Durling M, Karlsson M (2018) Out in the cold: Identification of genomic regions associated with cold tolerance in the biocontrol fungus *Clonostachys rosea* through genome-wide association mapping. *Frontiers in Microbiology* **9**:2844.

63. Iqbal M, Dubey M, Gudmundsson M, Viketoft M, Funck Jensen D, Karlsson M (2018) Comparative evolutionary histories of fungal proteases reveal gene gains in the mycoparasitic and nematode-parasitic fungus *Clonostachys rosea*. *BMC Evolutionary Biology* **18**:171.
62. Atanasova L, Dubey M, Grujić M, Gudmundsson M, Lorenz C, Sandgren M, Kubicek C, Funck Jensen D, Karlsson M (2018) Evolution and functional characterization of pectate lyase PEL12, a member of a highly expanded *Clonostachys rosea* polysaccharide lyase 1 family. *BMC Microbiology* **18**:178.
61. Fatema U, Broberg A, Funck Jensen D, Karlsson M, Dubey M (2018) Functional analysis of polyketide synthase genes in the biocontrol fungus *Clonostachys rosea*. *Scientific Reports* **8**:15009.
60. Mgbeahuruike A, Ejioffor T, Christian O, Shoyinka V, Karlsson M, Nordkvist E (2018) Detoxification of aflatoxin-contaminated poultry feeds by three adsorbents, bentonite, activated charcoal and fuller's earth. *Journal of Applied Poultry Research* **27**:461–471.
59. Schmidt R, Brandström Durling M, de Jager V, Menezes R, Nordkvist E, Svatoš A, Dubey M, Lauterbach L, Dickschat J, Karlsson M, Garbeva P (2018) Deciphering the genome and secondary metabolome of the plant pathogen *Fusarium culmorum*. *FEMS Microbiology Ecology* **94**:fiy078.
58. Nygren K, Dubey M, Zapparata A, Iqbal M, Tzelepis G, Brandström Durling M, Funck Jensen D, Karlsson M (2018) The mycoparasitic fungus *Clonostachys rosea* responds with both common and specific gene expression during interspecific interactions with fungal prey. *Evolutionary Applications* **11**:931-949.
57. Borisova A, Eneyskaya E, Jana S, Badino S, Kari J, Amore A, Karlsson M, Hansson H, Sandgren M, Himmel M, Westh P, Payne C, Kulminskaya A, Ståhlberg J (2018) Correlation of structure, function and protein dynamics in GH7 cellobiohydrolases from *Trichoderma atroviride*, *T. reesei* and *T. harzianum*. *Biotechnology for Biofuels* **11**:5.
56. Iqbal M, Dubey M, McEwan K, Menzel U, Andersson Franko M, Viketoft M, Funck Jensen D, Karlsson M (2018) Evaluation of *Clonostachys rosea* for control of plant-parasitic nematodes in soil and in roots of carrot and wheat. *Phytopathology* **108**:52-59.
55. Karlsson M, Atanasova L, Funck Jensen D, Zeilinger S (2018) Necrotrophic mycoparasites and their genomes. In: Heitman J, Howlett B, Crous P, Stukenbrock E, James T, Gow N (eds) *The Fungal Kingdom*. ASM Press, Washington DC, 1005-1026. Selected for rapid publication in *Microbiology Spectrum* **5**:FUNK-0016-2016.
54. Tzelepis G, Karlsson M, Suzuki T (2017) Deglycosylating enzymes acting on N-glycans in fungi; Insights from a genome survey. *Biochimica et Biophysica Acta – General Subjects* **1861**:2551-2558.
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49. Funck Jensen D, Karlsson M, Sarrocco S, Vannacci G (2016) Biological control using microorganisms as an alternative to disease resistance. In: Collinge DB (ed) *Plant Pathogen Resistance Biotechnology*. Wiley, New York and London, 341-363.

48. Dubey M, Funck Jensen D, Karlsson M (2016) The ABC transporter ABCG29 is involved in H₂O₂ tolerance and biocontrol traits in the fungus *Clonostachys rosea*. *Molecular Genetics and Genomics* **291**:677-686.

47. de Vries S, Nemesio-Gorriz M, Blair P, Karlsson M, Mukhtar S, Elfstrand M (2015) Heterotrimeric G-proteins in *Picea abies* and their regulation in response to *Heterobasidion annosum* s.l. infection. *BMC Plant Biology* **15**:287.

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43. Abd El Daim I, Häggblom P, Karlsson M, Stenström E, Timmusk S (2015) *Paenibacillus polymyxa* A26 sfp-type phosphopantetheinyl transferase inactivation limits bacterial antagonism against *Fusarium graminearum* but not of *F. culmorum*. *Frontiers in Plant Science* **6**:368.

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