

Curriculum Vitae

Mark Mazzola

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Education:

1990 Ph.D., Plant Pathology, Washington State University, Pullman
1985 M.S., Forest Pathology, University of Vermont, Burlington
1983 B.S., Forest Biology, University of Vermont, Burlington

Research Interests:

Soil/rhizosphere microbiome, sustainable crop production systems, disease suppressive soils, plant-microbe interactions

Professional Experience:

1995-present Research Plant Pathologist/Lead Scientist, USDA, ARS, Wenatchee, WA
2008-present Extraordinary Professor, Stellenbosch University, Stellenbosch, South Africa
2007-present Affiliate, WSU Center for Sustaining Agriculture and Natural Resources
2007-present Adjunct Professor, Dept. Soil Science, Washington State University
2001-2007 Adjunct Professor, Dept. Horticulture, Oregon State University
1996-present Adjunct Professor Dept. Plant Pathology, Washington State University
1993-1995 USDA NRI Postdoctoral Fellow, USDA, ARS, Pullman, WA
1990-1993 Postdoctoral Research Associate, Dept. Plant Pathology, Kansas State University
1985-1986 Manager, Nematode Diagnostic Services, Dept. Plant & Soil Sciences, Univ. of Vermont.

Awards :

Fellow, American Phytopathological Society (2013)
Lee M. Hutchins Award, American Phytopathological Society (2001)
Fellow-Organization for Economic Co-operation and Development, Paris, France (2001)
National Science Foundation/National Research Council Visiting Associateship Award (1993)
Xi Sigma Pi Honor Society (Forestry)
Phi Kappa Phi Honor Society
Phi Kappa Phi Outstanding Graduate Student (1989)

Professional Membership:

Soil Ecology Society
American Society for Microbiology
American Phytopathological Society
International Society for Molecular Plant-Microbe Interactions
International Society for Microbial Ecology

RESEARCH FUNDING HISTORY:

Secured over 12 million dollars in competitive external funding directly for support of research programs in soil microbial ecology, soil nutrient management, plant-microbe interactions, and soil-borne disease management.

Current Funding:

- Renewable Energy Group, \$60,250; 2016-2018. Soil/rhizosphere microbiome composition as influenced by carbon source input during ASD.
- USDA-AFRI, \$152,000; 2017-2019. Characterizing genotype-specific apple root biochemistry and its implications for rhizosphere microbial ecology in apple replant disease.
- Washington Tree Fruit Research Commission, \$129,988; 2017-2020. Implementation of Alternative Methods to Control Replant Disease.
- USDA-NIFA-Methyl Bromide Transitions, \$500,000; 2016-2019. Refining anaerobic soil disinfestation for disease management in strawberry and apple production.
- USDA-NIFA-Specialty Crops Research Initiative, \$4,281,618; 2016-2021. Accelerating the Development, Evaluation, and Adoption of New Apple Rootstock Technologies to Improve Apple Growers Profitability and Sustainability.
- Washington Tree Fruit Research Commission, \$150,000; 2016-2019. Managing rhizosphere/soil microbiology via apple rootstock chemistry.
- USDA Area Wide Pest Management Program. \$750,000; 2014-2018. Optimization and implementation of biologically active soil amendments as an alternative to soil fumigation.
- California Department of Pesticide Regulations, \$298,472; 2014-2017. Project Title: Improving efficacy of biologically-mediated soilborne disease management.
- USDA-FAS-Technical Assistance for Specialty Crops, \$806,511; 2014-2018. Project Title: Identifying and Managing Sources of Quarantine-Significant Post Harvest Diseases in Pacific Northwest Apple and Pear Orchards
- California Strawberry Commission, \$308,485; 2015-2018. Project Title: Mechanisms of action contributing to efficacy of biologically active soil amendments as a fumigation alternative for soil-borne disease control in California strawberry.

Previous funding:

Funding totaling more than 5 million dollars was obtained from USDA-NIFA organic grants program, USDA-National Research Initiative Competitive Grants Program, USDA-NIFA Methyl Bromide transitions program, United States Forest Service, the McKnight Foundation, Organic Farming Research Foundation, the Consortium For Plant Biotechnology Research, USDA Integrated Pest Management Grants Program, Washington Tree Fruit Research Commission and California Strawberry Commission.

Directed Research:

Postdoctoral Scientists:

Current:

Dr. Parama Sikdar- Identifying and Managing Sources of Quarantine-Significant Post Harvest Diseases in Pacific Northwest Apple and Pear Orchards. (2014-present)

Former:

Dr. Rachel Leisso- Metabolomic and metagenomic characterization of endophytic/rhizosphere microbial communities associated with plant resistance to soil-borne pathogens (2015-2017). *Current Position: Research Plant Pathologist, USDA-ARS*

Dr. Andrew Reed- Transformations in soil and rhizosphere microbial community structure in response to apple rootstock genotypes (2013-2015). *Deceased*

Dr. Sarah Strauss-Effect of *Brassica* seed meal amendment on nitrogen cycling gene abundance and soil microbial community structure (2010-2012). *Current Position: Assistant Professor, University of Florida.*

Dr. Catherine Reardon-Organic amendment-induced transformation of soil microbial community structure and function (2009-2011). *Current Position: Research Microbiologist, USDA-ARS*

Dr. Antonio Izzo-Development of DNA arrays for monitoring soil microbial community structure in the rhizosphere (2004-2007). *Current Position: Associate Professor, Elon University*

Dr. Michael F. Cohen-Role of nitric oxide production by *Streptomyces* in the *Brassica napus* seed meal induced suppression of fungal root pathogens (2003-2005). *Current Position: Professor, Sonoma State University*

Dr. Deanna Funnell-Microbial remediation of soils induced in a wheat cultivar-specific manner (2001-2003). *Current Position: Research Plant Pathologist, USDA-ARS, University of Nebraska*

Dr. Yu-Huan Gu-Modification of microbial community structure resident to orchard soils in response to wheat cropping (1999-2002). *Current Position: Research Scientist, College of Medicine, University of Washington.*

Visting Scientists:

Dr. Renuka Attanayake, Borlaug Fellow University of Kelaniya, Sri Lanka, 2017

Dr. Manuela Vincente Dominguez, University of Córdoba, Spain, 2011

Dr. Ebaa Ebrahim El-Sharouny, Alexandria University, Egypt, 2010

Dr. Brenda Aluda, Borlaug Fellow, Nairobi, Kenya, 2009

Dr. Luisa Manici, Research Center for Industrial Crops, Bologna, Italy, 2001

Dr. Baruch Sneh, Tel Aviv University, Israel, 1997-98

<i>Graduate Students mentored:</i>	<i>Degree</i>	<i>Institution/Department</i>
Feliz Yamak	MSc	Washington State University, Plant Pathology
Shien Lu	PhD	Washington State University, Plant Pathology
Yared Tesfai Tewoldemedhin	MSc	Stellenbosch University (South Africa), Plant Pathology
Leonardo de la Fuentes	PhD	Washington State University, Plant Pathology
Srisangwan Laywisadkul	PhD	Oregon State University, Horticulture
Lori Hoagland	PhD	Washington State University, Soil Sciences
Rita Abi Ghanem	PhD	Washington State University, Soil Sciences
Chris Spies	PhD	Stellenbosch University, Plant Pathology
Jacomina Bloem	PhD	University of Pretoria (South Africa), Microbiology
Yared Tesfai Tewoldemedhin	PhD	Stellenbosch University, Plant Pathology
Leigh Ann Harrison	PhD	Washington State University, Plant Pathology
Emi Yamamoto	MSc	Sonoma State University, Biology
Maxwell Handesini	MSc	University of Idaho, Soil Sciences.
Jessica Gigot	PhD	Washington State University, Horticulture
Muditha Weerakoon	MSc	Washington State University, Plant Pathology
Emily Gatch	PhD	Washington State University, Plant Pathology
Catherine Crosby	PhD	Washington State University, Soil Sciences
Reinette Gouws	PhD	Stellenbosch University, Plant Pathology
Aaron Agostini	MSc	Sonoma State University, Biology
Parama Sikdar	PhD	Washington State University, Plant Pathology
Muditha Weerakoon	PhD	Washington State University, Plant Pathology
Bodh Paudel	PhD	Washington State University, Soil Sciences
Likun Wang	PhD	Washington State University, Plant Pathology
Christian Aguilar	PhD	Washington State University, Plant Pathology
Shashika S. Hewavitharana	PhD	Washington State University, Plant Pathology
Makomborero Nyoni	PhD	Stellenbosch University, Plant Pathology
Sharooz Moein	MSc	Stellenbosch University, Plant Pathology
Rachel Rudolph	PhD	Washington State University, Horticulture
Kathleen McKeever	PhD	Washington State University, Plant Pathology
Whitney Garton	MSc	Washington State University, Horticulture
Alan Raeder	MSc	Washington State University, Soil Sciences
Emmi Klarer	MSc	Washington State University, Plant Pathology

Peer Reviewed Publications:

Manici, L. M., Caputo, F., Sacca, M. L., Kelderer, M., Nicoletti, F., Topp, A. R. and **Mazzola, M.** 2017. Long-term plant growth effects on soilborne fungi in apple orchards and role of *Dactylonectria* and *Ilyonectria* spp. in tree decline. *Plant Pathology* (submitted).

Leisso, R., Rudell, D., and **Mazzola, M.** 2017. Metabolic composition of apple rootstock rhizodeposits differs in a genotype-specific manner and affects growth of subsequent plantings. *Soil Biology and Biochemistry* (submitted).

Shennan, C., Muramoto, J., Koike, S., Baird, G., Fennimore, S., Samtani, J., Bolda, M., Dara, S., Daugovish, O., Lazarovits, G., Butler, D., Roskopf, E., Kokalis-Burelle, N., Klonsky, K. and **Mazzola, M.** 2017. Anaerobic soil disinfestation is a potential alternative to soil fumigation for control of certain soil-borne pathogens in strawberry production. *Plant Pathology* (accepted).

Mazzola, M., and Freilich, S. 2017. Prospects for biological soil-borne disease control: application of indigenous versus synthetic microbiomes. *Phytopathology* 107:256-263.

Mazzola, M., Agostini, A., and Cohen, M. F. 2017. Incorporation of *Brassica* seed meal soil amendment and wheat cultivation for control of *Macrophomina phaseolina* in strawberry. *European Journal of Plant Pathology* DOI 10.1007/s10658-017-1166-0.

Aguilar, C. G., **Mazzola, M.**, and Xiao, C. L. 2017. Timing of apple fruit infection by *Neofabraea perennans* and *Neofabraea kienholzii* in relation to bull's-eye rot development in stored apple fruit. *Plant Disease*. <http://dx.doi.org/10.1094/PDIS-11-16-1637-RE>.

Raaijmakers, J. M. and **Mazzola, M.** 2016. Soil immune responses: Soil microbiomes may be harnessed for plant health. *Science* 352:1392-1393.

Zhu, Y., Shin, S., and **Mazzola, M.** 2016. Genotype-specific responses of apple roots to pathogenic infection by *Pythium ultimum*. *Canadian Journal of Plant Pathology* 38:483-491

Hewavitharana, S. S., and **Mazzola, M.** 2016. Carbon source-dependent effects of anaerobic soil disinfestation on soil microbiome and suppression of *Rhizoctonia solani* AG-5 and *Pratylenchus penetrans*. *Phytopathology* 106:1015-1028.

Mazzola, M., Hewavitharana, S. S., Strauss, S. L., Shennan, C., and Muramoto, J. 2016. Anaerobic soil disinfestation and *Brassica* seed meal amendment alter soil biology and system resistance. *International Journal of Fruit Science*. 16(S1):47-58.

Muramoto, J., Shennan, C., Zavatta, M., Baird, G., Toyama, L., and **Mazzola, M.** 2016. Effect of anaerobic soil disinfestation for control of charcoal rot in California strawberries. *International Journal of Fruit Science* 16 (S1):59-70.

Shin, S., Zheng, P., Fazio, G., **Mazzola, M.**, Main, D., and Zhu, Y. 2016. Transcriptome changes specifically associated with apple (*Malus domestica*) root defense response during *Pythium ultimum* infection. *Physiological and Molecular Plant Pathology* 94:16-26.

Mazzola, M., Hewavitharana, S. and Strauss, S. L. 2015. *Brassica* seed meal soil amendments transform the rhizosphere microbiome and improve apple production through resistance to pathogen re-infestation. *Phytopathology* 105:460-469.

Song, C., **Mazzola, M.**, Cheng, X., Alexandrov, T., Dorrestein, P., Watrous, J., van der Voort, M., and Raaijmakers, J. 2015. Molecular and chemical dialogues in bacteria-protzoa interactions. *Nature Scientific Reports* 5:12837.

Tewoldemedhin, Y. T., Lamprecht, S. C., and **Mazzola, M.** 2015. *Rhizoctonia* anastomosis groups associated with diseased rooibos seedlings and the potential of compost as soil amendment for disease suppression. *Plant Disease* 99:1020-1025.

Manici, L. M., Kelderer, M., Caputo, F., and **Mazzola, M.** 2015. Auxin-mediated relationships between apple plants and root inhabiting fungi: impact on root pathogens and potentialities of growth-promoting populations. *Plant Pathology* 64:843-851.

Shin S, Lv J, Fazio G, **Mazzola, M.** and Zhu Y. 2014. Transcriptional regulation of ethylene and jasmonate mediated defense response in apple (*Malus × domestica*) root during *Pythium ultimum* infection *Horticultural Research* 1: 53.

Sikdar, P., **Mazzola, M.**, and Xiao, C. L. 2014. Infection courts and timing of infection of apple fruit by *Phacidiopycnis washingtonensis* in the orchard in relation to speck rot during storage. *Plant Disease* 98:1467-1475.

Hewavitharana, S. S., Rudell, D., and **Mazzola, M.** 2014. Carbon source-dependent antifungal and nematicidal volatiles derived during anaerobic soil disinfestation. *European Journal of Plant Pathology* 140:39-52.

Zhu, Y., Fazio, G. and **Mazzola, M.** 2014. Elucidating the molecular responses of apple rootstock resistant to ARD pathogens: challenges and opportunities for development of genomics-assisted breeding tools. *Horticultural Research* 1:43.

Liu, Y., de Bruijn, I., Jack, A., van der Voort, M., Drynan, K., van den Berg, A., van West, Pl, Thoen, E., Kdaar, I., Sandoval-Sierra, J., Dieguez-Uribeondo, J., Mendes, R., **Mazzola, M.**, and Raaijmakers, J. 2014. Deciphering microbial landscapes of fish eggs to mitigate emerging diseases. *International Society for Microbial Ecology Journal* 8:2002-2014.

Mazzola, M., and Strauss, S. L. 2014. Replant disease control and system resilience to pathogen re-infestation in response to *Brassica* seed meal amendment. *Acta Horticulturae*. 1044:105-112.

Mazzola, M., and Hewavitharana, S. 2014. Carbon source-dependent volatile production and ASD efficacy for suppression of apple root pathogens. *Acta Horticulturae* 1044:209-214.

Shennan, C., Muramoto, J., Lamers, J., **Mazzola, M.**, Roskopf, E., Kokalis-Burelle, N., Momma, N., Butler, D., and Kobara, Y. 2014. Anaerobic soil disinfestation for soil borne disease control in strawberries and vegetable systems: Current knowledge and future directions. *Acta Horticulturae* 1044:165-175.

Muramoto, J., Shennan, C, Baird, G., Zavatta, M., Koike, S. T., Bolda, M. P., Daugovish, O., Dara, S. K., Klonsky, K. and **Mazzola, M.** 2014. Optimizing anaerobic soil disinfestation for California strawberries. *Acta Horticulturae* 1044:215-220.

- Sikdar, P., Okubara, P., **Mazzola, M.**, and Xiao, C. L. 2014. Development of PCR assays for diagnosis and detection of the pathogens *Phacidiopycnis washingtonensis* and *Sphaeropsis pyriputrescens* in apple fruit. *Plant Disease* 98:241-246
- Strauss, S. L., Reardon, C. L., and **Mazzola, M.** 2014. The response of ammonia-oxidizer activity and community structure to fertilizer amendment of orchard soils. *Soil Biology and Biochemistry* 68:410-418
- Mazzola, M.**, and Strauss, S. L. 2013. Resilience of orchard replant soils to pathogen re-infestation in response to Brassicaceae seed meal amendment. *Aspects of Applied Biology* 119:69-77.
- Handiseni, M., Brown, J., Zemetra, R., and **Mazzola, M.** 2013. Effect of *Brassicaceae* seed meals with different glucosinolate profiles on Rhizoctonia root rot of wheat. *Crop Protection* 48:1-5
- Reardon, C. L., Strauss, S. L., and **Mazzola, M.** 2013. Effect of *Brassicaceae* seed meal amendments on nitrogen cycling and nematode populations in orchard soils. *Soil Biology & Biochemistry* 57:22-29.
- Handiseni, M., Brown, J., Zemetra, R., and **Mazzola, M.** 2012. Use of Brassicaceous seed meals to improve seedling emergence of tomato and Pepper in *Pythium ultimum* infested soils. *Archives of Phytopathology and Plant Protection* 45:1204-1209.
- Mazzola, M.** and Manici, L. M. 2012. Apple Replant Disease: Role of Microbial Ecology in Cause and Control. *Annual Review of Phytopathology* 50:45-65.
- Raaijmakers, J. M., and **Mazzola, M.** 2012. Diversity and natural functions of antibiotics produced by beneficial and pathogenic soil bacteria. *Annual Review of Phytopathology* 50:403-424.
- Weerakoon, D.M.N., Reardon, C. L., Paulitz, T. C., Izzo, A. D., and **Mazzola, M.** 2012. Long-term suppression of *Pythium abappressorium* induced by *Brassica juncea* seed meal amendment is biologically mediated. *Soil Biology & Biochemistry* 51:44-52.
- Mazzola, M.**, Reardon, C. L., and Brown, J. 2012. Initial species composition and brassicaceae seed meal type influence extent of *Pythium*-induced plant growth suppression. *Soil Biology & Biochemistry* 48:20-27
- Spies, C.F.J., **Mazzola, M.**, Botha, W. J., Langenhoven, S., Mostert, L., and McLeod, A. 2011. *Pythium irregulare* isolates from grapevines in South Africa represent one phylogenetic species that may include aneuploids or polyploids. *Fungal Biology* 115:1210-1224.
- Spies, C. F. J., **Mazzola, M.**, and McLeod, A. 2011. Characterization and detection of *Pythium* and *Phytophthora* species associated with grapevines in South Africa. *European Journal Plant Pathology* 131:103-119.
- Lamprecht, S. C., Tewoldemedhin, Y. T., Calitz, F. J. and **Mazzola, M.** 2011. Evaluation of strategies for the control of canola and lupin seedling diseases caused by Rhizoctonia anastomosis groups. *European Journal of Plant Pathology* 130: 427-439.
- Spies, C. F., **Mazzola, M.**, Botha, W. J., Van der Rijst, M., Mostert, L. and McLeod, A. 2011. Oogonial biometry and phylogenetic analyses of the *Pythium vexans* species group from woody agricultural hosts in South Africa reveal distinct groups within this taxon. *Fungal Biology* 115:157-168.

Tewoldemedhin, Y. T., **Mazzola, M.**, Labuschagne, I. and McLeod, A. 2011. Towards understanding the etiology of apple replant disease in South Africa using a multiphasic approach. *Soil Biology & Biochemistry* 43:1917-1927.

Tewoldemedhin, Y. T., **Mazzola, M.**, Mostert, L., and McLeod, A. 2011. *Cylindrocarpon* species associated with apple tree roots in South Africa and their quantification using real-time PCR. *European Journal of Plant Pathology* 129:637-651.

Tewoldemedhin, Y. T., **Mazzola, M.**, Botha, W. J., *Spies, C. F.*, and McLeod, A. 2011. Characterization of fungi (*Fusarium* and *Rhizoctonia*) and oomycetes (*Phytophthora* and *Pythium*) associated with apple orchards in South Africa. *European Journal Plant Pathology* 130:215–229.

Handiseni, M., Brown, J., Zemetra, R., and **Mazzola, M.** 2011. Herbicidal activity of *Brassicaceae* seed meal on wild oat (*Avena fatua*), Italian rye grass (*Lolium multiflorum*), redroot pigweed (*Amaranthus retroflex*) and prickly lettuce (*Lactuca serriola*). *Weed Technology* 25:127-134.

Mazzola, M. and Zhao, X. 2010. *Brassica juncea* seed meal particle size influences chemistry but not soil biology-based suppression of individual agents inciting apple replant disease. *Plant and Soil* 337:313-324.

Mazzola, M. and Brown, J. 2010. Efficacy of brassicaceous seed meal formulations for the control of apple replant disease in organic and conventional orchard production systems. *Plant Disease* 94:835-842.

Mazzola, M., de Bruijn, I., Cohen, M. F., and Raaijmakers, J.M. 2009. Protozoan-induced regulation of cycliclipopeptide biosynthesis is an effective predation defense mechanism for *Pseudomonas fluorescens*. *Applied and Environmental Microbiology* 75:6804-6811.

Pusey, P. L., Stockwell, V.O., and **Mazzola, M.** 2009. Epiphytic bacteria and yeasts on apple blossoms and their potential as antagonists of *Erwinia amylovora*. *Phytopathology* 99:571-581.

Izzo, A. and **Mazzola, M.** 2009. Hybridization of an ITS-based macroarray with ITS community probes for characterization of complex communities of fungi and fungal-like protists. *Mycological Research* 113:802-812.

Mazzola, M., Brown, J., Zhao, X., Izzo, A., and Fazio, G. 2009. Interaction of brassicaceous seed meal and apple rootstock on recovery of *Pythium* spp. and *Pratylenchus penetrans* from roots grown in replant soils. *Plant Disease* 93:51-57.

Wissuwa, M., **Mazzola, M.** and Picard, C. 2009. Novel approaches in plant breeding for rhizosphere-related traits. *Plant and Soil* 321:409-430.

Hoagland, L., Carpenter-Boggs, L., Granatstein, D., **Mazzola, M.**, Smith, J., Peryea, F., and Reganold, J. P. 2008. Impact of floor management strategies on nitrogen fertility and biological soil quality in newly established organic apple orchards. *Biology & Fertility of Soils* 45:11-18.

Hoagland, L., Carpenter-Boggs, L., Reganold, J., and **Mazzola, M.** 2008. Role of native soil biology in brassicaceae seed meal induced weed suppression. *Soil Biology & Biochemistry* 40:1689-1697.

Cohen, M. F. Yamamoto, E., Condeso, E., Anacker, B. L., Rank, N., and **Mazzola, M.** 2008. Microbial- and isothiocyanate-mediated control of *Phytophthora* and *Pythium* species. Pages 337-340, in

Proceedings of the Sudden Oak Death Third Science Symposium. Gen. Tech. Rep. PSW-GTR-214, Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 491 p.

Mazzola, M. 2007. Manipulation of rhizosphere bacterial communities to induce suppressive soils. *Journal of Nematology* 39:213-220.

Mazzola, M., Zhao, X., Cohen, M. F., and Raaijmakers, J. M. 2007. Cyclic lipopeptide surfactant production by *Pseudomonas fluorescens* SS101 is not essential to the suppression of complex *Pythium* spp. populations indigenous to agricultural soils. *Phytopathology* 97:1348-1355.

Mazzola, M., Brown, J., Izzo, A, and Cohen, M. F. 2007. Mechanism of action and efficacy of seed meal-induced suppression of pathogens inciting apple replant disease differ in a *Brassicaceae* species and time-dependent manner. *Phytopathology* 97:454-460.

Tewoldemedhin, Y. T., Lamprecht, S. C., McLeod, A., and **Mazzola, M.** 2006. Characterization of *Rhizoctonia* spp. from cropping systems in the Western Cape province of South Africa. *Plant Disease*. 90:1399-1406.

Cohen, M. F., and **Mazzola, M.** 2006. Effects of *Brassica napus* seed meal amendment on soil populations of resident bacteria and *Naegleria americana*, and the unsuitability of arachidonic acid as a protozoan-specific marker. *Journal of Protozoology Research* 16:16-25.

Cohen, M. F., **Mazzola, M.**, and Yamasaki, H. 2006. Nitrogen oxidations in bacterium-plant interactions. *Microbe* 1:347.

Fazio, G., Robinson, T., Aldwinckle, H., **Mazzola, M.**, Leinfelder, M., Parra, R.. 2006. Traits of the Next Wave of Geneva Apple Rootstocks. *Compact Fruit Tree* 38:7-11.

Mazzola, M., Brown, J., Abi Ghanem, R., Izzo, A., and Cohen, M. F. 2006. Progress towards development of biologically-based strategies for the management of apple replant disease. *Phytopathologia Polonica* 39:11-18.

Cohen M. F., and **Mazzola, M.** 2006. Impact of resident bacteria, nitric oxide emission and particle size on root infection by *Pythium* spp. and *R. solani* AG-5 in *Brassica napus* seed meal amended soils. *Plant and Soil* 286:75-86.

Cohen, M. F., Yamasaki, H., and **Mazzola, M.** 2005. *Brassica napus* seed meal soil amendment modifies microbial community structure, nitric oxide production and incidence of *Rhizoctonia* root rot. *Soil Biology & Biochemistry* 37:1215-1227.

Mazzola, M., and Mullinix, K. 2005. Comparative field efficacy of management strategies containing *Brassica napus* seed meal or green manure for the management of apple replant disease. *Plant Disease* 89:1207-1213.

Fazio, G., and **Mazzola, M.** 2005. Marker assisted selection of apple rootstocks-prospects, benefits, and limitations. *Acta Horticulturae* 663:823-828.

Mazzola, M. 2004. Assessment and Management of Soil Microbial Community Structure For Disease Suppression. *Annual Review of Phytopathology* 42:35-59.

Mazzola, M., Funnell, D. L. and Raaijmakers, J. M., 2004. Wheat cultivar-specific selection of 2,4-diacetylphloroglucinol-producing fluorescent *Pseudomonas* species from resident soil populations. *Microbial Ecology* 48:338-348.

Allain-Boulé, N., Tweddell, R., **Mazzola, M.**, Bélanger, R., and Lévesque, C. A. 2004. *Pythium attrantheridium* sp. nov.-taxonomy and comparison with related species. *Mycological Research* 108:795-805.

Cohen, M. F., Han, X. Y., and **Mazzola, M.** 2004. Molecular and physiological comparison of *Azospirillum* spp. isolated from *Rhizoctonia solani* mycelia, wheat rhizosphere and human skin wounds. *Canadian Journal of Microbiology*. 50:291-297.

Cohen, M., Yamasaki, H., and **Mazzola, M.** 2004. Bioremediation of soils by plant-microbe systems. *International Journal of Green Energy* 1:301-312.

Cohen, M. F. and **Mazzola, M.** 2004. A reason to be optimistic about biodiesel: seed meal as a valuable soil amendment. *Trends in Biotechnology* 22:211-212.

Paulitz, T. C., Adams, K. and **Mazzola, M.** 2003. *Pythium abappressorium*-a new species from eastern Washington. *Mycologia* 95:80-86.

Botha, A., Denman, S., Lamprecht, S. C., **Mazzola, M.** and Crous, P. W. 2003. Characterization and pathogenicity of *Rhizoctonia* spp. associated with black root rot of strawberry in the Western Cape Province, South Africa. *Australasian Plant Pathology* 32:195-201.

Schneider, S. Roskopf, E. Leesch, J., Chellemi, D., Bull, C. and **Mazzola, M.** 2003. Alternatives to methyl bromide-preplant and postharvest. *Pest Management Science* 58:814-826.

De Souza, J. T., **Mazzola, M.**, and Raaijmakers, J. M. 2003. Conservation of the response regulator gene *gacA* in *Pseudomonas* species. *Environmental Microbiology* 5:1328-1340.

Gu, Y.-H. and **Mazzola, M.** 2003. Modification of fluorescent pseudomonad community and control of apple replant disease induced in a wheat cultivar-specific manner. *Applied Soil Ecology* 24:57-72.

Mazzola, M., Andrews, P. K., Reganold, J. P., and Lévesque, C. A. 2002. Frequency, virulence, and metalaxyl sensitivity of *Pythium* spp. isolated from apple roots under conventional and organic production systems. *Plant Disease* 86:669-675.

Mazzola, M. 2002. Mechanisms of Natural Soil Suppressiveness. Antonie van Leeuwenhoek: *International Journal of General and Molecular Microbiology* 81:557-564.

Mazzola, M. and Gu, Y.-H. 2002. Wheat genotype-specific induction of soil microbial communities suppressive to disease incited by *Rhizoctonia solani* AG 5 and AG 8. *Phytopathology* 92:1300-1307.

Mazzola, M., Granatstein, D. M., Elfving, D. C., Mullinix, K., and Gu, Y.-H. 2002. Cultural management of microbial community structure to enhance growth of apple in replant soils. *Phytopathology* 92:1363-1366.

Granatstein, D., and **Mazzola, M.** 2001. Alternatives to fumigation for control of apple replant disease in Washington state orchards. *Integrated Fruit Production* 24:265-271.

- Gu, Y.-H., and **Mazzola, M.** 2001. Impact of carbon starvation on stress resistance, survival in soil habitats and biocontrol ability of *Pseudomonas putida* strain 2C8. *Soil Biology and Biochemistry* 33:1155-1162.
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Mazzola, M. and Bergdahl, D.R. 1989. The phenology and spore dissemination patterns of *Uredinopsis mirabilis* on *Abies balsamea* and *Onoclea sensibilis*. *Canadian Journal of Forest Research* 19:88-95.

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Select Invited Oral Presentations/Keynote Addresses (over 120 total):

Washington Tilth Producers, November 11, 2016.

XIV Meeting of the Working Group Biological Control of Plant Pathogens, 12-15 September 2016, Berlin, Germany

26th Southern Africa Symposium on Soilborne Diseases and Soil Biology, Stellenbosch, South Africa, September 2016

62nd Annual Conference on Soilborne Plant Pathogens, Parlier, CA, 23 March 2016

Ontario Fruit and Vegetable Congress, Niagara Falls, Ontario, Canada, 18 February 2016

Greenbluff Horticultural Association Conference, Greenbluff, WA, 1 April 2015

North American Strawberry Symposium, Ventura, CA, 4 February 2015

10th International IOBC-WPRS Workshop, Stellenbosch, South Africa, 25 November 2014.

8th International Symposium on Non-chemical Soil Disinfestation. Torino, Italy, 15 July 2014.

Soil Health: a symposium, CA Dept. Pesticide Regulation, Davis, CA,

NW Washington Soil Quality Conference, Mt. Vernon, WA, February 2014.

Celebratory Centenary Congress, East Malling Research Center, United Kingdom, 6 November 2013.

Symposium on Sustainable Crop production Stellenbosch, South Africa, 16 May 2013.

Interpoma 2012, Bolzano, Italy, 17-19 November 2012.

Washington State University, Department of Horticulture, Pullman, WA, 10 April 2012.

Western Washington University, Department of Biology, Bellingham, WA, 28 March 2012

Cornell University, Department of Horticulture, Ithaca, NY, 18 October 2011

EcoRaz 2011 Symposium, Monterey, CA. 1 April 2011.

Focus on Farming Conference, Tulalip, WA 4 November 2009.

20th Southern Africa Symposium on Soilborne Diseases and Soil Biology, Stellenbosch, South Africa, 15-17 September 2009.

Agroscope Changins-Wädenswil Research Station, Switzerland, 21 August 2008.

University of Nebraska, Biotechnology/Life Sciences Department, Lincoln, NE, 5 March 2008.

Washington State University, Department of Crop & Soil Sciences, Pullman, WA, 17 September 2007.

Annual meeting of the Society of Nematologists, San Diego, CA, July 28-August 1, 2007.

18th World Congress of Soil Sciences, Philadelphia, PA, July 9-15, 2006.

Fifth National Integrated Pest Management Symposium, St. Louis, MO, 4-6 April 2006.

16th Southern Africa Symposium on Soilborne Plant Diseases, Stellenbosch, South Africa, 20 Sept. 2005.

Symposium on Biological and pro-ecological methods for control of diseases in orchards and small fruit plantations", Skierniewice, Poland, 29-31 August 2005.

IX International Congress of Ecology, 7-12 August 2005, Montreal, Quebec, Canada.

Symposium on Chemical and Non-Chemical Soil Substrate Disinfestation', Corfu, Greece, October 2004.

Annual meeting of the American Phytopathological Society, Anaheim, CA, July 31-August 4, 2004.

University of Vermont, Department of Plant & Soil Science, Burlington, VT, 12 May 2003.

8th International Congress of Plant Pathology, 2-8 February 2003, Christchurch, New Zealand.

Oregon State University, Department of Horticulture, Corvallis, OR, 7 May 2002.

Research Institute for Industrial Crops, Bologna, Italy, 28 February 2002.

9th Congress of the International Society for Microbial Ecology, Amsterdam, The Netherlands, 26-31 August 2001.

British Columbia Horticultural Forum, Penticton, BC, 15 November 2000.

Annual Meeting of the American Phytopathological Society, August, 2000, New Orleans, LA.

Western Region Sustainable Agriculture Research and Education Conference, Portland, OR, 7-9 March

University of Stellenbosch, Dept. Plant Pathology, Stellenbosch, South Africa, 15 September 1999.

University of California-Davis, Dept. Plant Pathology, Davis, CA, October 1998.

Seventh International Congress of Plant Pathology, Edinburgh, Scotland, 8-16 August 1998

Rutgers University, Department of Plant Pathology New Brunswick, NJ, 1995.

Marquette University, Department of Biology, Milwaukee, WI, October, 1992.

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