

CURRICULUM VITAE

DR. PETER MUTURI WACHIRA

DATE OF BIRTH: 20th August 1973.

MARITAL STATUS: Married

CURRENT ADDRESS: School of Biological Sciences, University of Nairobi.
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SUMMARY

I am currently a senior lecturer at the University of Nairobi, teaching Microbiology and specifically in mycology. I have published on soil fungi as biological control organisms, mycorrhiza and other related topics as well as supervised many undergraduate and postgraduate students. My research interests are:

- i. Soil biodiversity monitoring and evaluation
- ii. Effects of land use/change on soil biodiversity
- iii. Identification and management of crops soil pests and diseases
- iv. Sustainable use of soil biodiversity for crop productivity
- v. Mushroom production
- vi. Microbial characterization of soil inoculants (bio-fertilizers)
- vii. Microorganisms as biological control agents of soil pests and diseases
- viii. Laboratory biosafety and biosecurity

EDUCATION BACKGROUND

2006 – 2009:	Institution:	University of Nairobi.
	Degree:	Doctor of Philosophy (PhD) in Mycology
2000 - 2004:	Institution	University of Nairobi.
	Degree:	Masters of Science in Mycology
1994 - 1998:	Institution	University of Nairobi
	Degree:	B.Sc. Second Class Honours

1989 - 1992:	Institutions	(Upper Division) Botany and Zoology Maralal High School
	Results	K.C.S.E.
1980 - 1988:	Institution	Kiwanja Primary School
	Results:	K.C.P.E

OTHER TRAINING

October, 2017	Institution	Wuhan Institute of Virology, WIV
	Course	International Workshop on Biosafety Laboratory Management and Experimental Techniques
March, 2012	Institution	University of Nairobi
	Course	Research and Grant Proposal Writing
December, 2011	Institution	Yokohama National University (YNU), Japan
	Course	International Environment Leaders Training for Sustainable Living with Environmental Risk
September, 2007	Institution	University of Nairobi
	Course	Plant Nematology Training Course
March, 2007	Institution	University of Nairobi.
	Course	Effective scientific communication and publishing
March, 2005	Institution	University of Agricultural Sciences, GKVK Campus, Bangalore-65: India.
	Course	Abuscular Mycorrhiza Fungi and Ectomycorrhiza Taxonomy (Morphological and Molecular)
November, 2003	Institution	Department of Resource Surveys and Remote Sensing
	Course	Geographic Information System (GIS) Application in Biodiversity Management
1998 –1998	Computer:	Certificate (Windows 95) Certificate (Internet and E-mail)

PEER REVIEWED PUBLICATIONS

JOURNAL PAPERS

Ndisio Boaz, **Peter Wachira**, Victor Kagot and Sheila Okoth, 2017. Susceptibility of locally cultivated groundnut (*Arachis hypogaea*) varieties to aflatoxin accumulation in Homa Bay County, Kenya. African Journal of Microbiology Research. Vol. 11(33), pp. 1329 -1337.

Loise M. Njoki, Sheila A. Okoth, and **Peter M. Wachira**, 2017. “Effects of Medicinal Plant Extracts and Photosensitization on Aflatoxin Producing *Aspergillus flavus* (Raper and Fennell),” International Journal of Microbiology. Pages 9 doi:10.1155/2017/5273893

Z. M. Mwathi, W. M. Muiro, J. W. Kimenju, **P. Wachira**. 2017. Evaluation of bio-wastes for multiplication of *Paecilomyces lilacinus*. International Journal of Agronomy and Agricultural Research Vol.10, (6) p. 1-5.

Njunge Leah Wathira, **Wachira Peter**, Okoth Sheila, 2016. Enhancement of Colonisation of Soybean Roots by Arbuscular Mycorrhizal Fungi Using Vermicompost and Biochar. Agriculture, Forestry and Fisheries. Vol. 5, (3) 71-78.

P. K. Maina, **P. M. Wachira**, S. A. Okoth, J. W. Kimenju and J. M. Mwangi, 2016. Co-occurrence and Diversity of Soil *Trichoderma* and *Fusarium* species from Different Land Use Intensities in Machakos County, Kenya. ACRI, 4(1): 1-13.

Wachira P. M., Muindi J. N., Okoth S. A. 2015. Survey of Nematode Destroying Fungi from Selected Vegetable Growing Areas in Kenya. Agriculture, Forestry and Fisheries. Vol 4, (4): 159-164.

Gathaara, V., Mwaniki, S.W., Wasilwa, L., Thurania, E.G., Kimenju, J.W. and **Wachira, P.M.** 2015. Farmer's knowledge and perceptions on banana (*MUSA SPP.L.*) management in Murang'a South district, Murang'a County, Central Kenya. Acta Hort. 1090, 29-33

John Nyaga, Joyce M. Jefwa, Catherine W. Muthuri, Vivienne N. Matiru, **Peter M. Wachira** and Sheila A. Okoth, 2015. Arbuscular mycorrhizal fungi with different soil fertility amendment practices in agricultural landscapes of Kenyan highlands. Nutrient Cycling in Agroecosystems. Vol 103 (1)

Wachira P. M., Kimenju J. W., Otipa M, 2015. Change in Diversity and Abundance of Nematode Destroying Fungi in Land Use under Irrigation in Selected Small Scale Irrigation Schemes in Kenya . Agriculture, Forestry and Fisheries. Vol 4, (1) 7-13.

P. K. Maina, **P. M. Wachira**, S. A. Okoth, J. W. Kimenju, M. Otipa & J. W. Kiarie, 2015. Effects of Land-Use Intensification on Distribution and Diversity of *Fusarium* Species in Machakos County, Kenya. Journal of Agricultural Science; Vol. 7, (4) 48 – 60.

P. K. Maina, **P. M. Wachira**, S. A. Okoth and J. W. Kimenju, 2015. Distribution and Diversity of Indigenous *Trichoderma* species in Machakos County, Kenya. British Microbiology Research Journal. Volume 9 , (4): 1-15

Titus Mugi Ng'ang'a , **Wachira Peter Muturi**, Kimenju John Wangai, Wango Tim Joash and Ndungu Joseph Matheri, 2014. Solid Waste Dumping Site Selection Using GIS and Remote Sensing for Kajiado County, Kenya. Journal of Earth Science and Engineering 4 (2014) 693-702

P. M. Wachira, J. W. Kimenju, S. A. Okoth, J. W. Wangu and T. M. Ng'ang'a, 2014. Effect of land use on abundance and diversity of nematode destroying fungi and soil nematodes in Embu County, Kenya. Journal of Agricultural Science; Vol. 6 (5) 132 – 141.

John Nyaga; Joyce M. Jefwa; Catherine W. Muthuri; Sheila A. Okoth; Vivienne N. Matiru and **Peter Wachira**, 2014. Influence of soil fertility amendment practices on *ex-situ* utilisation

of indigenous arbuscular mycorrhizal fungi and performance of maize and common bean in Kenyan highlands. *Tropical and Subtropical Agro ecosystems*, 17 (2014): 129 – 141.

Kimenju J. Wangai, Maundu J.Nzesya, Muiru W. Maina, **Wachira M. Peter**, Gichuru K. Elijah, 2014. Reaction of Selected Coffee Germplasm to Root-Knot Nematodes in Kenya. *Journal of Natural Sciences Research*; Vol.4 (3) 68 – 75.

Maundu J. Nzesya, Kimenju J. Wangai, Muiru W. Maina, **Wachira M. Peter**, Gichuru K. Elijah, 2014. Plant Parasitic Nematodes Associated With Coffee in Kenya and Factors Influencing their Occurrence, Abundance and Diversity. *Journal of Biology, Agriculture and Healthcare*; Vol. 4: (3), 120 – 129.

J. W. Kimenju, **P. M. Wachira**, J. K. Lang'at, W. Otieno & G. K. Mutua, 2014. Evaluation of selected methods in the control of plant parasitic nematodes infecting carnation. *Journal of Agricultural Science*; Vol. 6 (3) 31 - 38

Karanja LW, **Wachira PM**, Muthomi JW, Phiri NA, Mutegi CK, Nzioki HS, Gikaru AK, Kanampiu F, J.M W. "Use of geographical information system to determine incidence of *Aspergillus* section *flavi* in different soils in Kaiti, Kenya." *East African Agricultural and Forestry Journal*. 2013; In press.

Wachira P.M, Kimenju J.W, Kiarie, J.W, Kihurani, A.W, Mwaniki, S.W and Gathaara V, 2013. Incidence of pests and diseases affecting banana in a commercial banana productions setting in Kenya. *International Journal of Research in Agriculture and Food Sciences*. Volume 1: 23 - 29

P.M., Wachira, Kimenju, J.W, Kiarie J.W, Kihurani, A.W. and Mwaniki, S.W., 2013. Occurrence and diversity of nematode destroying fungi in banana production zones in Maragua, Kenya. *Journal of Agricultural Science* 5: (12) 180 – 186.

P.M. Wachira, Kimenju, J.W, Okoth, S.A. and Kiarie J.W, 2013. Diversity of nematodes and nematode destroying fungi as influenced by land use in Taita Taveta, Kenya. *Journal of Agricultural Science* 5: (12) 154 – 161.

J.M. Jefwa, S. Okoth, **P. Wachira**, N. Karanja, J. Kahindi, S. Njuguini, S. Ichami, J. Mung'atu, P. Okoth and J. Huising, 2012. Impact of land use types and farming practices on occurrence of arbuscular mycorrhizal fungi (AMF) Taita-Taveta district in Kenya. *Agriculture, Ecosystems and Environment* 157: (2012) 32– 39.

P. M. Wachira . S. Okoth, J. Kimenju, R.K. Mibey and J. Kiarie, 2011. Effect of soil fertility management practices on nematode destroying fungi in Taita, Kenya. *Tropical and Subtropical Agro ecosystems*, 13 (2011): 51-57

Miriam Wepukhulu, John Kimenju, Beatrice Anyango, **Peter Wachira** and Gerald Kyallo, 2011. Effect of soil fertility management practices and *bacillus subtilis* on plant parasitic nematodes associated with common bean, *Phaseolus vulgaris* . *Tropical and Subtropical Agro ecosystems*, 13 (2011): 29 -36 29.

P. Wachira, R. Mibey, S. Okoth, J. Kimenju and J. Kiarie, 2009. Diversity of nematode destroying fungi in Taita Taveta, Kenya. *Fungal Ecology* 2: (2) 60 – 65.

P. M. Wachira, J.W. Kimenju, S.A. Okoth and R. K. Mibey, 2009. Stimulation of nematode –destroying fungi by organic amendments applied in management of plant parasitic nematode. *Asian Journal Plant Sciences*. Volume 8: (2) 153 – 159.

Peter M. Wachira, Sheila Okoth, John Kimenju and Richard Mibey, 2009. Influence of land use and soil management practices on the occurrence of nematode destroying fungi in Taita Taveta, Kenya. *Tropical and Subtropical Agro ecosystems*: 10 (2) 213 – 223.

Peter Wachira and Sheila Okoth, 2009. Use of nematode destroying fungi as indicators of land disturbance in Taita Taveta, Kenya. *Tropical and Subtropical Agro ecosystems*.11: (2) 313 – 321

Sheila A Okoth, Peter Okoth, **Peter M Wachira** and Henry Roimen, 2009. Spatial distribution of *Trichoderma* Sp. in Embu and Taita regions, Kenya. *Tropical and Subtropical Agro ecosystems*. 11: (2) 291 – 302

John Kimenju, Nancy Karanja, Gerald Kyalo Mutua, Benson Rimberia and **Peter Wachira**, 2009. Nematode community structure as influenced by land use and intensity of cultivation. *Tropical and Subtropical Agro ecosystems*.11 :(2) 353 – 360.

J.W. Kimenju, G.O.M. Odero, E.W. Mutitu, P.M. Wachira, R.D. Narla and W.M. Muiru, 2009. Suitability of locally available substrates for Oyster mushroom (*Pleurotus ostreatus*) cultivation in Kenya. *Asian Journal of Plant Sciences*. 8: (7) 510-514

P. M. Wachira, J. W.Kimenju, S. Okoth, R.K. Mibey and J. Mung'atu, 2008. Effect of land use on occurrence and diversity of nematode destroying fungi in Taita Taveta, Kenya. *Asian Journal Plant Sciences*. 7: (5); 447 – 453. ISSN 1682 – 3974

BOOK CHAPTERS

1. Titus M. Ng'ang'a, **Peter M. Wachira**, Tim J. L. Wango, Joseph M. Ndung'u and Margaret N. Ndungo, 2017. Geospatial Digital Rights Management: Challenge to Global

Spatial in Data Infrastructure: Volunteered Geographic Information and the Future of Geospatial Data. IGI Global.

2. **Peter Wachira**, John Kimenju, Sheila Okoth, and Jane Kiarie, 2014. Conservation and Sustainable Management of Soil Biodiversity for Agricultural Productivity in N. Kaneko *et al.* (eds.): *Sustainable Living with Environmental Risks*. Pages 27 – 34. Springer Open.
3. Fredrick O. A, Karanja N.K, Okello J.J, **Wachira P.M**, Mutua G.K, Lelei D.K and Gachene K.K; 2012. Agro-biodiversity and Potential Use for Enhancing Soil Health in Tropical Soils of Africa in Editor(s): R E Hester, R M Harrison: *Soils and Food Security*: Pages 94-134. RSC Publishers.

OTHER PUBLICATIONS

1. J.W. Kimenju, , N.K. Karanja, S.A. Okoth, **P.M. Wachira**, J.P.H. Kahindi, J.M Jefwa, G.N Nyamasyo, E. Muya, B. Mutsotso, M. Gikungu, H. Roimen and M. Kibberenge, 2010. Effect of land use intensification and soil fertility management practices on soil biodiversity in Embu and Taira, Kenya. A **Farmer's Report**
2. Kimenju J .W., Mwaniki S.W, **Wachira P.M**, Gathaara V, Muturi P.W, Kihurani A.W, Dora K, Kinyanjui C, and Otipa M, 2014. An Introduction to Banana Production and Marketing, **A Farmer's Manual**

CONFERENCE AND WORKSHOP PROCEEDINGS

1. International Workshop on Biosafety Laboratory Management and Experimental Techniques, Wuhan Institute of Virology, (WIV), 18th - 30th October **2017**. Chinese Academy of Sciences (CAS)
2. Karanja LW, Wachira PM, Muthomi JW, Phiri NA, Mutegi CK, Kanampiu F, J.M.Wagacha, Nzioka HS, Gikaru AK, Mahuku G, Karanja DK, Otieno W. 2015. "Influence of weather on the incidence of aflatoxigenic fungi at pre-harvest stage of maize value chain in Makueni, Kenya." In: *African Symposium on Mycotoxicology*. Livingstone, Zambia; **2015**.
3. Wachira, P.M., Kimenju, J.W, Kihurani, A.W, Mwaniki, S.W Gathaara, V. N. and Ndiritu, M. M, 2013. Incidence of pests and diseases affecting banana in a commercial banana production setting in Kenya: 13th Workshop on Sustainable Horticultural Production in the Tropics, 3rd - 6th December 2013, Meru University of Science and Technology (MUST), Meru.
4. J.W. Kimenju, **P.M. Wachira**, N.K. Karanja, S.A. Okoth, J.P.H. Kahindi, J.M Jefwa, G.N Nyamasyo, E. Muya, B. Mutsotso, M. Gikungu, M. Kibberenge, and H. Roimen: Impact of land use on selected soil organisms in Taita and Embu benchmark sites, Kenya: Conservation and Sustainable Management of Belowground Biodiversity, Closing Conference; May 17th – 21st, 2010; World Agro forestry Centre, Nairobi, Kenya.

5. Kimenju, J.W., M.J. Otipa, E. W. Mutitu and **P. M. Wachira, 2007**. Potential of well-designed cropping cycles for root-knot nematode management in tomato. Proceedings: 6th Nematology Society of South Africa Conference, 6-9th May, 2007. Port Elizabeth, South Africa.
6. 13th Workshop on Sustainable Horticultural Production in the Tropics, 3rd - 6th December 2013, Meru University of Science and Technology (MUST), Meru.
7. International Workshop in Molecular Biology and Bioinformatics –AGNES B, 14th to 16th August 2013 ICIPE Campus, Nairobi.
8. 12th Workshop on Sustainable Horticultural Production in the Tropics, 4 - 7th December 2012, Bondo university college, Kisumu.
9. 13th KARI Biennial Scientific Conference: Agricultural innovation system for improved productivity and competitiveness in pursuit of vision 2030, KARI Headquarters Complex 22-26 October 2012
10. International Conference on ‘Integrated Fertility Management in Africa: From Microbes to Markets; Safari Park Hotel, Kenya : 22nd to 26th October 2012
11. Humboldt –Kolleg: The future of Biodiversity research in Africa: Scope, opportunities , collaboration, access and sharing benefits, Taita Taveta University College, Voi, Kenya 17th – 20th July 2012
12. International Environment Leaders Training for Sustainable Living with Environmental Risk, Yokohama National University (YNU), Japan 20th November to 3rd December 2011
13. Conservation and Sustainable Management of Below-Ground Biodiversity Conference, TSBF: Nairobi. 17th – 21st May 2010.
14. 3rd Annual International Conference; Moi University Eldoret, 31st July to 4th August 2007
15. 2nd Regional Nematology Training Course organised by The Nematology Initiative for Eastern and Southern Africa in collaboration with the Gatsby Charitable Foundation; Kenya Forestry Research Institute Training Centre (KEFRI) Nairobi, Kenya. 16th July – 5th August 2007
16. Enhancement of Productivity and Sustainability of Urban /peri-urban Agriculture (UPA) through efficient management of urban waste. UNEP, Nairobi. 8th - 9th October 2001

ONGOING PROJECTS

1. Deployment of natural enemies in the management of plant parasitic nematodes for improved crop production – funded by UoN Deans Grants, University of Nairobi
2. Deployment of natural enemies in the ‘Attract and Kill’ approach for sustainable management of the banana weevil – funded by National Council for Science and Technology, Nairobi
3. A Soil Health Strategy for Boosting Multi-Sector Rural Development in Sub-Saharan Africa: Phase I: What is the Soil Biology Story? Funded by Michagan State University, USA.

4. Developing a Secure Food System Based on Well Adapted Pearl Millet Genotypes in Appropriate Crop Mixtures –funded by National Council for Science and Technology, Nairobi

REFEREES

1. Prof. Richard K. Mibey, Vice Chancellor; Moi University

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