

CURRICULUM VITAE

Prof. Sheila A. Okoth PhD, FRSB, FKNAS

PERSONAL INFORMATION

Nationality	Kenyan
Present position	Associate Professor
Address	School of Biological Sciences University of Nairobi P. O. Box 30197, Nairobi 00100 Kenya
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Prof Sheila Okoth has 29 years of experience as a University of Nairobi lecturer, researcher and consultant. She teaches several applied biological courses to both undergraduate, open and distant learners (ODL) and postgraduate students. She has to date trained to completion and mentored 27 MSc and 7 PhD graduates. Prof. Okoth has attracted and coordinated several international and regional research grants such as the Sustainable Management of Below Ground Biodiversity (CSM-BGBD) Project funded by UNEP-GEF. This was a global project involving seven developing countries: Brazil, Cote d'Ivoire, Indonesia, India, Kenya, Mexico, and Uganda, of which she was the national coordinator of the Kenyan chapter made up of five national institutions; EU Horizon 2020 -Linking East and West African Farming Systems Experience into a BELT of Sustainable Intensification (EWA-BELT). In 2009, she was one of the 70 winners of the first round of fellowship of the African Women in Agricultural Research and Development Program (AWARD) of the CGIAR Gender & Diversity funded by the Bill & Melinda Gates Foundation and the United States Agency for International Development.

ACADEMIC QUALIFICATIONS

Programme	Institute	Date
PhD Botany (Mycology)	University of Nairobi, Kenya	1998
Molecular techniques for fungal identification (Certificate)	Stellenbosch University, South Africa	2012
Detection techniques for mycotoxins and toxigenic fungi in the food chain (Certificate)	Institute of Sciences of Food Production (ISPA-CNR) Bari, Italy	2010
Mycotoxin and antibiotics residue analysis in foods and feeds	Finnish Food Safety Authority (EVIRA) and Agrifood Research (MTT), Finland	2010
Protein and Proteomics techniques, nucleic acid and genomics techniques	University of Hertfordshire, Hatfield, UK	2005
Plant biotechnology and biosafety course	Wageningen University, The Netherlands	2002

OTHER SELECTED QUALIFICATIONS

KENYA PUBLIC SERVICE COMMISSION TRAINING

Programme	Resource Institution	Venue	Date
Corporate Governance	Kenya School of Government, Matuga, Kenya	Kenya School of Government Matuga, Kenya	2019
Mwongozo Induction Program for Board Members of State Corporations 2017	State Corporations Advisory Committee (SCAC)	Mombasa Beach Hotel	2017
Mentoring course	Training Resources Group Inc USA; funded by AWARD	Leisure Hotel, Mombasa, Kenya	2008
Women's leadership training course	Training Resources Group Inc USA; funded by AWARD	Safari Park Hotel, Nairobi, Kenya	2009

MENTORING AND LEADERSHIP TRAINING

Subject	Resource Institution	Venue	Date
Mentoring Fellowship (AWARD fellowship)	African Women in Agricultural Research and Development (AWARD)	Kenya, South Africa and Italy	2010
Mentoring course	Training Resources Group Inc., USA	Leisure Hotel, Mombasa, Kenya	2008
Women's leadership training course	Training Resources Group Inc., USA	Safari Park Hotel, Nairobi, Kenya	2009

PROFESSIONAL EXPERIENCE

EMPLOYMENT

Period	Position	Institution
March 2011-to date	Associate Professor	School of Biological Sciences, University of Nairobi, Kenya
30 th April 2002-March 2011	Senior Lecturer	Department of Botany, University of Nairobi, Kenya
4 th July 1995-March 2002	Lecturer	Department of Botany, University of Nairobi, Kenya
2 nd May 1991-1 st May 1995	Tutorial Fellow	Department of Botany, University of Nairobi, Kenya

APPOINTMENTS

Date	Position
October 2020	Appointed member of Coffee International Trade Technical Committee, Kenya
July 2019	Appointed member of International Scientific Advisory Board of Africa Center of Excellence for Mycotoxin and Food Safety, Federal University of

	Technology, Minna, Nigeria
March 2019	Appointed member of secretariat of Kenya - Partnership for Aflatoxin Control in Africa (African Union) by Ministry of Health
Sept 2018	Re-appointed Board Member of the Biosafety Appeals Board of Kenya
June 2018	Elected President African Society of Mycotoxicology
June 2018	Member of Partnership for Aflatoxin Control in Africa (African Union), Steering Committee
June 2016	Re-appointed Board Member of the African Women Study Center, University of Nairobi
May 2015	Elected the first Vice President of the African Society of Mycotoxicology
Aug 2014	Appointed Board Member of the Biosafety Appeals Board of Kenya
May 2014	Appointed Fellow of the Kenya National Academy of Sciences
May 2013	Appointed Board Member of the African Women Study Center, University of Nairobi
Dec 2010	Appointed Fellow of the Royal Society of Biology (FRSB), UK

PROFESSIONAL RECOGNITION AND OTHER APPOINTMENTS

Date	Recognition
April 2019	Featured by AGRI – SCIENCE WETENSKAPPE, Stellenbosch University newsletter as an African prominent researcher
Dec 2018	Featured by African Women in Agricultural Research and Development (AWARD) at the 10 th Anniversary as one of her prominent researchers with successful fellowship
October 2018	Trainer at Mycotoxins Workshop, University of Johannesburg
September 2018	Keynote speaker at 2 nd International Conference for Food Safety and Security, Pretoria, SA. 15-17 September 2018
August 2018	Keynote speaker at IPBO Scientific innovation for a sustainable development of African agriculture", Ghent Belgium. 30-31 August 2018
Dec 2017	Featured by UoN in Utafiti News Issue 5 as one of her prominent researchers
June 2017	Nominated top 53 African Scientist who have contributed to science. Science in Africa: Celebrating African Scientists Advancing the continent and the world. By Department of Science and Technology, Republic of South Africa and The National Development Plan, Republic of South Africa. http://online.flipbuilder.com/siyc/sqnm/mobile/index.html#p=40

PROFESSIONAL COLLABORATION

2017 Partner in Mytox-South (Intercontinental partnership to solve mycotoxin problems)
<http://mytoxsouth.org/>

2017 External faculty at University of Johannesburg
<https://www.uj.ac.za/faculties/science/foodtech/Pages/Prof-Sheila-A-Okoth-PhD-FRSB-KAS.aspx>

SELECTED PROFESSIONAL CONSULTANCIES

Laboratory Director of ISO/IEC 17025:2017 Mycotoxin Laboratory (ML) located at CEBIB, University of Nairobi.

<https://conquestcapital.co.ke/websites/directory/testing-laboratories/>

External Examiner

External Examiner for the examination of Masters and PhD dissertations at the

- Faculty of Agriculture, Science and Technology, North West University (Mafikeng Campus), Republic of South Africa.
- Department of Plant Pathology, Faculty of Agriculture, Stellenbosch University, Republic of South Africa.
- University of the Free State, Bloemfontein, South Africa
- Department of Biological Sciences, University of Botswana, Botswana.
- University of Zimbabwe, Harare, Zimbabwe
- University of South Africa
- Tshwane University of Technology, South Africa
- University of Johannesburg
- University of Addis Ababa

PUBLICATIONS

A. JOURNALS

1. Managed bees as pollinators and vectors of bio control agent (*Trichoderma harziunum*) against grey mold disease (*Botrytis cinerea*) for increased strawberry quality and yields. Accepted for Publication in *African Journal of Agricultural Research*. October 26, 2020.
2. Salome W. Kiarie , Susan S. Imbahale , Sheila Okoth , Mary Gikungu, 2020. A Survey of Farmers Knowledge and Practice on the Management of Watermelon Diseases in Horticultural Belt of Mt. Kenya Slopes. *International Journal of Sustainable Agricultural Research*, 7(4): 244-254. DOI: 10.18488/journal.70.2020.74.244.254
3. Marijani, E., Charo-Karisa, H., Kigadye, E. and Okoth, S., 2020. Occurrence and Exposure Assessment of Aflatoxin B1 in Omena (*Rastrineobola argentea*) from Kenya. *Journal of Food Quality*, 2020.
<https://www.hindawi.com/journals/jfq/2020/8823340/>
4. Kemboi, D.C.; Antonissen, G.; Ochieng, P.E.; Croubels, S.; Okoth, S.; Kangethe, E.K.; Faas, J.; Lindahl, J.F.; Gathumbi, J.K. A Review of the Impact of Mycotoxins on Dairy Cattle Health: Challenges for Food Safety and Dairy Production in Sub-Saharan Africa, 2020. *Toxins*, 12, 222. <https://doi.org/10.3390/toxins12040222>
5. Ouko A, Okoth S, Netshifhefhe NE, Viljoen A, Rose LJ., 2020. Tolerance to Fusarium verticillioides infection and fumonisin accumulation in maize F1 hybrids and subsequent F2 populations. *Agronomy Journal*. 2020;1–13. <https://doi.org/10.1002/agj2.20145>
6. Jenoh EM, de Villiers EP, de Villiers SM, Okoth S, Jefwa J, Kioko E, et al., 2019). Infestation mechanisms of two woodborer species in the mangrove *Sonneratia alba* J. Smith in Kenya and co-occurring endophytic fungi. *PLoS ONE* 14(10): e0221285. <https://doi.org/10.1371/journal.pone.0221285>

7. Dooso Oloo, Okoth S, Wachira P., Mutiga S., Ochieng P, Kago L., Nganga F., Entfellner J., Ghimire S, 2019. Genetic Profiling of *Aspergillus* Isolates with Varying Aflatoxin Production Potential from Different Maize-Growing Regions of Kenya. *Toxins*, **11**, 467. <https://doi.org/10.3390/toxins11080467>
8. Ahlberg, S., Randolph D., Okoth S., Lindahl J., 2019. Aflatoxin binders in foods for human consumption - can this be promoted safely and ethically? *Toxins* **11**(7) 410. <https://doi.org/10.3390/toxins11070410>.
9. Shen, T., Miao, Y., Ding, C., Fan, W., Liu, S., Lv, Y., Gao, X., De Boevre, M., Yan, L., Okoth, S. and De Saeger, S., 2019. Activation of the p38/MAPK pathway regulates autophagy in response to the CYPOR-dependent oxidative stress induced by zearalenone in porcine intestinal epithelial cells. *Food and Chemical Toxicology*, **131**, p.110527.
10. Marijani, E., Kigadye, E. and Okoth, S., 2019. Occurrence of Fungi and Mycotoxins in Fish Feeds and Their Impact on Fish Health. *International Journal of Microbiology*, 2019. <https://www.sciencedirect.com/science/article/pii/S0278691519303023>
11. Marijani, E., Charo-Karisa, H., Gnonlonfin, G.J.B., Kigadye, E. and Okoth, S., 2019. Effects of aflatoxin B1 on reproductive performance of farmed Nile tilapia. *International Journal of Veterinary Science and Medicine*, **7**(1), pp.35-42.
12. Mitema, A., Okoth S., Rufadeen S., 2019. The Development of a qPCR Assay to Measure *Aspergillus flavus* biomass in maize and the use of a biocontrol strategy to limit aflatoxin production. *Toxins* **11**,179; <https://doi.org/10.3390/toxins11030179>
13. Kagot V., Okoth S., Marthe De Boevre, Sarah De Saeger, 2019. Biocontrol of *Aspergillus* and *Fusarium* mycotoxins in Africa: benefits & limitations. *Toxins*, **11**(2), 109. <https://doi.org/10.3390/toxins11020109>
14. Olotu IA., Patrick Njobeh, Adewale Obadina, Sofie Landschoot, Kris Audenaert, Sheila Okoth, Marthe De Boevre, Sarah De Saeger, 2019. Investigation of the metabolic profile and toxigenic variability of fungal species occurring in fermented foods and beverage from Nigeria and South Africa using UPLC-MS/MS. *Toxins*, **11**, 85; doi:10.3390/toxins11020085
15. Benigni AT., Fletcher MT., Fox GP., Harvey J., Okoth SA., Sultanbawa Y., 2019. Curcumin-based photosensitization inactivates *Aspergillus flavus* and reduces aflatoxin B1 in maize kernels. *Food Microbiology* **82**: 82 – 88.
16. Ouko A., Okoth S., Amugune N., Vesa J., 2018. Field assessment of agronomic performance, resistance to aflatoxin, and fumonisin accumulation in selected maize inbred lines in Kenya. *Agriculture, Forestry and Fisheries* **7**(4): 94-100.
17. Ogot H.A., Okoth, S.A, Obiero, G.O., Mahasi J.M., 2018. Screening of Kenyan soybean cultivars for resistance to different races of *Phakopsora pachyrhizi* (soybean rust). *Int. J. Biosci.* **13**(6): 61-69.
18. Ouko A., Okoth S., Amugune N., Vesa Joutsjoki, 2018. Characterization of mating type genes in *Aspergillus flavus* populations from two locations in Kenya. *Advances in Agriculture, Vol. 2018, Article ID 3095096, 6 pages, 2018.* <https://doi.org/10.1155/2018/3095096>
19. Ngugi, CN., Mbaka, JN., Wachira, PN, and Okoth, S, 2018. Laboratory screening for infectivity of selected indigenous entomopathogenic nematode isolates on *Tuta absoluta* in Kenya. *Inter. J. of Agri. Environ and Bioresearch* **3**:06. http://ijaeb.org/uploads2018/AEB_03_256.pdf
20. Njuguni SKM, Nyawira MM, Wachira PM, Okoth S, Muchai SM, Saado AH., 2018. Effects of Land Use on the Diversity of Macrofungi in Kereita Forest Kikuyu Escarpment, Kenya. *Current Research in Environmental & Applied Mycology* **8**(2): 254–281.

21. Okoth, SO., De Boevre, M., Vidal, A., Di Mavungu, J.D., Landschoot, S., Kyallo, M., Njuguna, J., Jagger, H., DeSaeger, S., 2018. Genetic and toxigenic variability within *Aspergillus flavus* population isolated from maize in two diverse environments in Kenya. *Frontiers in Microbiology*, **9**:57.
22. Adekoya, I., Obadina, A., Adaku, C.C., De Boevre, M., Okoth, S., De Saeger, S., Njobeh, P., 2018. Mycobiota and co-occurrence of mycotoxins in South African maize-based opaque beer. *International Journal of Food Microbiology*, **270**:22-30.
23. Okoth S., Francis JA., Jefwa JM., 2017. Aflatoxin and the agriculture– nutrition nexus in Africa.
file:///Users/sheilaokoth/Downloads/CTA256%20%20Aflatoxin%20and%20the%20agric
ulture-nutrition%20nexus_01.pdf
24. Kang’ethe, E. K., H. Korhonen, K. A. Marimba, G. Nduhiu, J. K. Mungatu, S. A. Okoth, V. Joutsjoki, L. W. Wamae, and P. Shalo, 2017. Management and mitigation of health risks associated with the occurrence of mycotoxins along the maize value chain in two counties in Kenya. *Food Quality and Safety* **4**: 268-274.
25. Okoth S., Rose LJ., Ouko A., Netshifhefhe NEI., Sila H., Viljeon A., 2017. Assessing Genotype-By-Environment Interactions in *Aspergillus* Ear Rot and Pre-Harvest Aflatoxin Accumulation in Maize Inbred Lines. *Agronomy* **7**:86.
<https://doi.org/10.3390/agronomy7040086>
26. Mitema A., Okoth S., Rafudeen M. S., 2017. Vegetative compatibility and phenotypic characterization as a means of determining genetic diversity of *Aspergillus flavus* isolates. *Fungal Biology* **122**(4): 203-213. <https://doi.org/10.1016/j.funbio.2017.11.005>
27. Okoth, S., Rose, LJ., Ouko, A., Beukes I., Sila H, Mouton M., Flett BC., Makumbi D., Viljoen A., 2017. Field evaluation of resistance to aflatoxin accumulation in maize inbred lines in Kenya and South Africa. *Journal of Crop Improvement*, **31**:(6) 862-878, DOI: 10.1080/15427528.2017.1391915
28. Olotu I.A., Njobeh P.G., Obadina A., Chilaka C.A., Okoth S., De Boevre M., De Saeger S., 2017. Awareness and Prevalence of Mycotoxin Contamination in Selected Nigerian Fermented Foods. *Toxins* **9**:363. DOI:10.3390/toxins9110363
29. Marijani E., Nasimolo, J., Kigadye, E., Gnonlonfin GJB, Okoth S., 2017. Sex-related differences in hematological parameters and organosomatic indices of *Oreochromis niloticus* exposed to aflatoxin B₁ diet. *Hindawi Scientifica Article ID 4268926*, 7 pages
<https://doi.org/10.1155/2017/4268926>
30. Mukhebi D., de Villiers S., Okoth S., Wilde V., Nkwake AM, 2017. Building science skills to improve the contributions of women to agricultural research and development in Sub-Saharan Africa. *Jour. of Gender, Agri. and Food Security*, **2**(1): 56-76. DOI: 10.19268/JGAFS.212017.4 -56- 57
31. Marijani, E., Wainaina, J.M., Charo-Karisa, H., Nzayisenga, L., Munguti, J., Joselin Benoit Gnonlonfin, G., Kigadye, E., Okoth, S., 2017. Mycoflora and mycotoxins in finished fish feed and feed ingredients from smallholder farms in East Africa. *Egypt. J. Aquat. Res.* **43**, 169–176. doi:10.1016/j.ejar.2017.07.001
32. Ogot HA., Okoth SA., Obiero GO., Mahasi JM., 2017. Assessment of Asian soybean rust (*Phakopsora pachyrhizi*) disease severity in selected districts of Western Kenya. *Int. J. Agron. Agri. R.* **11**(2): 50-53.
33. Maina P. K., Wachira P.M., Okoth S.A., Kimenju J.W., 2017. Cultural, Morphological and Pathogenic Variability among *Fusarium oxysporum* f. sp. phaseoli Causing Wilt in French Bean (*Phaseolus vulgaris* L.). *Journal of Advances in Microbiology* **2**(4): 1-9, 2017; Article no.JAMB.32684
34. Loise, M.N., Sheila, A.O., Peter, M.W. 2017. Effects of Medicinal Plant Extracts and Photosensitization on Aflatoxin Producing *Aspergillus flavus* (Raper and Fennel).

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<https://doi.org/10.1155/2017/5273893>

35. Rose, L. J., Okoth S., Beukes I., Mouton M., Flett B. C., Makumbi D. and Viljoen A., 2017. Determining resistance to *Fusarium verticillioides* and fumonisin accumulation in maize inbred lines resistant to *Aspergillus flavus* and aflatoxins. *Euphytica*, **213**(4): 93.
36. Boaz, N., Wachira, P., Kagot, V. and Okoth, S., 2017. Susceptibility of locally cultivated groundnut (*Arachis hypogaea*) varieties to aflatoxin accumulation in Homa Bay County, Kenya. *African Journal of Microbiology Research*, **11**(33): 1329-1337.
37. Okoth, S., 2016. Improving the Evidence Base on Aflatoxin Contamination and Exposure in Africa. CTA Working Paper 16/13. November 2016, 128 pages
<http://www.cta.int/en/article/2016-11-21/confronting-the-aflatoxin-challenge-in-africa.html>
38. Okoth, S.A., Nyongesa, B., Joutsjoki, V., Korhonen, H., Ayugi, V., Kang'ethe, E.K. 2016. Sclerotia Formation and Toxin Production in Large Sclerotial *Aspergillus flavus* Isolates from Kenya. *Advances in Microbiology*, **6**:47- 56.
39. 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* **5**(3): 71-78. doi: 10.11648/j.aff.20160503.17
40. Maina P. K, Wachira P. M, Okoth S. A, Kimenju J. W., Mwangi J. M. 2016. Co-occurrence and Diversity of Soil *Trichoderma* and *Fusarium* species from Different Land Use Intensities in Machakos County, Kenya. *Archives of Current Research International* **4**(1): 1-13.
41. Nyongesa, B. W., Ayugi, V., Okoth, S., 2015. Identification key for *Aspergillus* species isolated from Maize and Soil of Nandi County, Kenya. *Advances in Microbiology*, **5**:205-229
42. Nyaga J, Jefwa JM, Muthuri CW, Matiru VN, Wachira PM., Okoth SA., 2015. Arbuscular mycorrhizal fungi with different soil fertility amendment practices in agricultural landscapes of Kenyan highlands. *Nutr Cycl Agroecosyst*. DOI 10.1007/s10705-015-9744-z
43. Kiama C, Budambula NLM, Okoth S, Kagali R, and Matiru V. 2015. Cultural characterization of fungi isolated from oil contaminated soils. *J of Biology, Agric and Healthcare* **5**:16-21.
44. Maina P. K, Wachira P. M, Okoth S. A, Kimenju J. W. M. Otipa and Kiarie J. W 2015. Effects of Land-Use Intensification on Distribution and Diversity of *Fusarium* Species in Machakos County, Kenya. *J of Agric Science* **7**(4):48 – 60.
45. Mukhongo R.W, Kavoo-Mwangi M.A, Kahangi M.E, Ateka, E.M, Were A.B, Okalebo J.R, Mutegi, M.E, Mwangi K.E, Tepeni T.T, Njuguini, K.S, Onguso J.M, Okoth S.A, and Jefwa J.M, 2015. Occurrence of Arbuscular Mycorrhizal Fungi and *Fusarium* in TC Banana Rhizosphere Inoculated with Microbiological Products in Different Soils in Kenya. *Inter. J of Soil Science* **10**(2): 45-62.
46. Okoth, Peter, Sheila Okoth, and Joyce Mnyazi Jefwa, 2015. The conservation and use of micro-organisms and invertebrates in root crop-based systems: state of knowledge, trends and future prospects. Commission on genetic resources for food and agriculture. <http://www.fao.org/fileadmin/templates/nr/documents/CGRFA/BSP-63-E.pdf>
47. Wachira P. M., J. W. Kimenju, Okoth S. A., Wangu J. W. and Ng'ang'a T. M., 2014. Effect of land use on abundance and diversity of nematode destroying fungi and soil nematodes in Embu County, Kenya. *Journal of Agricultural Science*, **6**:132 – 141.
48. Kawaka, F., John Kimenju J., Okoth S., Ayodo G., Mwaniki S., Muoma J., and Orinda G., 2014. Effects of soil chemical characteristics on the occurrence of entomopathogenic nematodes. *British Journal of Applied Science & Technology*, **4**:2333-2343.
49. Nyaga J., Jefwa J, Catherine W. Muthuri; Okoth S., Matiru V., Wachira P., 2014. Influence of soil fertility amendment practices on ex-situ utilization of indigenous arbuscular

- mycorrhizal fungi and performance of maize and common bean in Kenyan highlands. *Journal of Tropical and Subtropical Agroecosystems*, **17**:129-141.
50. Naluyange V., Ochieno D., John M. Maingi , Omborib O., Mukaminega D., Amoding A., Odeno M., Okoth S.A., Shivoga W.A., Muoma J.V. 2014. Compatibility of Rhizobium inoculant and water hyacinth compost formulations in Rosecoco bean and consequences on *Aphis fabae* and *Colletotrichum lindemuthianum* infestations. *Applied Soil Biology*, **76**:68-77.
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