



CURRICULUM VITAE

Personal Details

Name: Fredrick Mutie Musila, PhD.

Gender: Male

Nationality: Kenyan

Contact: Address: P O Box 52428-00200 Nairobi, Kenya.

Mobile: +254725932497

Email: musilamutie@gmail.com, musila@tukenya.ac.ke

Religion: Christian

Languages: Fluent in English & Kiswahili

Career objectives

To be a competent and self-driven professional who is conscious and responsive to dynamic challenges and needs of the society.

To work in a challenging environment that demands continuous improvement, total dedication, creativity and sound decision making as a pre-requisite for success.

Academic Qualifications

Doctor of Philosophy Degree (Plant Taxonomy & Economic Botany)

University of Nairobi; 2013 – 2017

PhD. Thesis title: Molecular Phylogeny, Leaf micromorphology and Antimicrobial activity of

Phytoconstituents of Kenyan *Plectranthus* species in the *Coleus* clade

Master of Science Degree (Plant Taxonomy & Economic Botany)

University of Nairobi; 2010-2012

Msc. Thesis title: In vivo Antimalarial Activity, Toxicity and Phytochemical screening of aqueous and organic extracts of selected Antimalarial plants in Msambweni District, Kenya.

Bachelor of Science Degree (Biology)

University of Nairobi; 2006 - 2010; First class honors

Kenya Certificate of Secondary Education (KCSE)

Kithunguini Secondary School; 2001 - 2004; Mean grade; A - (Minus)

Work experience

Lecturer, Department of Applied & Technical Biology, School of Biological & Life Sciences at the Technical University of Kenya. **2018 to Date.**

Tutorial Fellow, Department of Applied & Technical Biology, School of Biological & Life Sciences at the Technical University of Kenya. **2015 to 2017.**

Part-time lecturer, Department of Plant and Microbial sciences, School of Pure and Applied Sciences, Kenyatta University: **2013- 2015.**

Part-time lecturer, Department of Biological sciences, School of Pure and Applied Sciences, Embu University College: **2014- 2015.**

Part-time Lecturer, Department of Botany, School of Pure & Applied Sciences at Jomo Kenyatta University of Agriculture and Technology: **Sept 2014- 2015.**

Part-time lecturer, Department of Biological sciences, School of Pure and Applied Sciences, South Eastern Kenya University: **2014- 2015**

Regional Medical representative, Beximco Pharmaceuticals: **June 2013-Sept 2013**

Research Interests

I have a keen interest in: Economic Botany, Medicinal Plants, Biostatistics, Microbiology, Molecular biology and Bioinformatics.

Professional Qualifications

1. Proficient in Microsoft Office (Word, Excel, PowerPoint, Access and Publisher).
3. Data Analysis using SPSS, R & Excel.
4. Data Mining using R, LINUX & WEKA.

Skills and Attitudes

1. Strong interpersonal and communication skills.
2. Good writing and reporting skills.
3. Ability to work under pressure.
4. Excellent planning and organizational skills.
5. Team player

Publications

Musila, F.M., Dossaji, S.F., Nguta, J.M., Lukhoba, C.W., Munyao, J.M., **2013.** *In vivo* antimalarial activity, toxicity and phytochemical screening of selected antimalarial plants. *Journal of Ethnopharmacology* 146, 557-561.

Michael, E.S., Yole,D., **Musila, F.M.**, Kutima, H.,Kareru, P., **2013.** Assessment of Molluscicidal, Cercericidal and Miracicidal Activities of Crude Extracts of *Azadirachta indica* and *Entada leptostachya*. *Journal of Biology, Agriculture and Healthcare*, 3(5), 11-17.

- Kaigongi, M. M., Dossaji, S.F., Lukhoba, C.W., **Musila, F.M.**, 2014. Antimicrobial activity, Toxicity and Phytochemical Screening of Four Medicinal Plants Traditionally used in Msambweni District, Kenya, *Journal of Biology, Agriculture and Healthcare*.
- Kaigongi, M., **Musila, F. M.** 2015. Ethnobotanical study of medicinal plants used by Tharaka people of Kenya. *International Journal of Ethnobiology & Ethnomedicine*, 1(1).1-8
- Musila, F. M.** Nguta JM, Lukhoba CW, Dossaji SF. 2017. Antibacterial and antifungal activities of ten Kenyan *Plectranthus* Species in the *Coleus* Clade, *Journal of Pharmacy Research*, 1(8), 1003-1014.
- Musila F. M.**, Lukhoba CW, Nguta JM, Dossaji SF. 2017. Phylogeny of ten Kenyan *Plectranthus* species in the coleus clade inferred from leaf micromorphology, RbcL and MatK genes, *Journal of Botany*, vol. 2017, Article ID 4369029, 16 pages, doi:10.1155/2017/4369029.
- Matara DN, Nguta JM, **Musila F.M.**, Mapenay I, Ali HM, Omambia VM. Botanical description, ethnomedicinal uses, phytochemistry and pharmacological effects of *Croton dichogamus* Pax (*Euphorbiaceae*). *J Phytopharmacol* 2021; 10(1):42-47.
- Ali HM, Nguta JM, Mapenay IO, **Musila F.M.**, Omambia VM, Matara DN. Ethnopharmacological uses, biological activities, chemistry and toxicological aspects of *Ocimum americanum* var. *americanum* (Lamiaceae). *J Phytopharmacol* 2021; 10(1):56-60.
- Vincent OM, Nguta JM, Mitema ES, **Musila F. M.**, Nyak DM, Mohammed AH, Gervason MA. Ethnopharmacology, pharmacological activities, and chemistry of the Hypericum genus. *J Phytopharmacol* 2021; 10(2):105-113.
- Gichuki, D.K.; Li, Q.; Hou, Y.; Liu, Y.; Ma, M.; Zhou, H.; Xu, C.; Zhu, Z.; Wang, L.; **Musila, F.M.**; Wang, Q.; Xin, H. Characterization of Flavonoids and Transcripts Involved in Their Biosynthesis in Different Organs of *Cissus rotundifolia* Lam. *Metabolites* 2021, 11, 741.
<https://doi.org/10.3390/metabo11110741>
- Hashim Ali, Joseph Nguta, **Fredrick Musila**, Isaac Ole-Mapenay, Dorine Matara, James Mailu, "Evaluation of Antimicrobial Activity, Cytotoxicity, and Phytochemical Composition of *Ocimum americanum* L. (Lamiaceae)", *Evidence-Based Complementary and Alternative Medicine*, vol. 2022, Article ID 6484578, 11 pages, 2022. <https://doi.org/10.1155/2022/6484578>
- Fredrick M. Musila**, Grace W. Gitau , Magrate M. Kaigongi , Dickson B. Kinyanyi, Jeremiah M. Mulu, Joseph M. Nguta. *In silico* exploration of *Lycoris* alkaloids as potential inhibitors of SARS-CoV-2 main protease (Mpro). *European Journal of Biological Research*. 2022. Under review.
- Magrate M. Kaigongi, Catherine W. Lukhoba, **Fredrick M. Musila**, Malcolm Taylor, Regina W. Mbugua, Joseph Githiomi, Abiy Yenesew, Nokwanda P. Makunga. "A versatile untargeted metabolomics-driven technology for rapid phytochemical profiling of stem barks of *Zanthoxylum*

species with antioxidant and antimicrobial activities." *Advances in Traditional Medicine*. **2022**. Under review

Daisy Chebet, **Fredrick M. Musila**, Sarah N. Kituyi, George M. Muthike and Magrate M. Kaigongi.

“Molecular phylogeny of selected Kenyan *Eucalyptus* species inferred from *MatK*, *rbcL* and *TrnL-F* genes and their suitability for power transmission poles”, *Diversity*, **2022**, Under review.

Workshops/Conferences

Basic and Intermediate level R training organized by Academic Data Analysts. **October 2021**.

Multi-omics online workshop: Training on working with Linux and Python Programming, Genomics.

Transcriptomics and Epigenomics. Decodlife.org. **23rd November to December 6th 2020**.

Bioinformatics training on Linux, Multiple sequence alignment, Proteomics, Genomics and Phylogenetic analysis at International Center for Insect Physiology & Ecology, Kenya, **September 2018-December 2018**.

Musila F M, Lukhoba C W, Dossaji S F, Nguta J M. **2017**. Molecular Phylogeny of ten Kenyan *Plectranthus* species in the Coleus clade, 15th -18th May. XXI AETFAT congress. Catholic University of Eastern Africa, Nairobi, Kenya.

Participated in Post-AETFAT congress phylogenetic training course held at the University of Nairobi, School of Biological Sciences, **22nd – 24th May 2017**.

E-resources Training Workshop organized by DAAD (German Academic Exchange Service) and ITOCA (Information Training & Outreach Center for Africa); **September 2014**.

Proposal Writing Workshop organized by DAAD (German Academic Exchange Service) and NCST (National Council for Science & Technology); **October 2011**.

Students Supervised

Duncan Kiragu Gichuki, PhD student, University of Chinese Academy of Sciences, Beijing. *Project title*: Characterization of *Cissus rotundifolia* flavonoids and their association to its excellent drought tolerance. **2020 to date**.

Daisy Chebet, Msc student, University of Embu, *Project title*: Assessment of genetic diversity and suitability of *Eucalyptus* species as power transmission poles. **2019 to date**.

Daudi Kiplangat Ruto, Msc Student, Mount Kenya University. *Project title*: Impact of Land use on Riparian land diversity along tributaries of Itare Dam in Nakuru County, Kenya. **2019 to date**.

Abel Nyamamba; Bachelor Technology in Applied Biology, TUK. *Project title*: Antibacterial and Antifungal activities of crude extracts from the leaves of spider Plant (*Cleome gynandra*), **2018**.

Samuel Kariuki, Bachelor Technology in Science Laboratory Technology, TUK. *Project title:*
Comparative study of Helminth load in the gut of Nile Tilapia and Catfish sold at Gikomba
Wholesale Fish Market, Kenya, **2018**.

Lenin Wakahiu, Bachelor of Technology in Applied Biology, TUK. *Project title:* Antifungal activity of
Methanolic crude extracts from the leaves of *Cascabela thevetia* and *Brunfelsia hopeana*, **2018**.

Omollo Duncan; Bachelor Technology in Applied Biology, *Project title:* Antifungal activity of crude
extracts of *Conyza sumatrensis*, **2017**.

Julius Onyango; Bachelor Technology in Science Laboratory Technology, TUK. *Project title:*
Investigations of Antibacterial properties of crude leaf extracts of *Aspillia africana*, **2017**.

Jacob Muema; Bachelor Technology in Applied Biology, TUK. *Project Title:* Isolation and
characterization of Molds that cause bread spoilage within Nairobi region, **2016**.

Referees

Dr. Joseph Mwanzia Nguta
Senior Lecturer
University of Nairobi, CAVS.
P OBOX 30197-00100.Nairobi, Kenya.
Tel. No. +254735750278
joseph.nguta@uonbi.ac.ke

Prof. Dorcas Yole
Professor
Technical University of Kenya
P O Box 52428-00200, Nairobi, Kenya
el. No. +254718797456
dorcas.yole@tukenya.ac.ke

Dr. Lukhoba Catherine W.
Senior Lecturer,
University of Nairobi, CBPS.
P.O BOX 30197-00100.Nairobi, Kenya.
Tel. No. +254733524549
clukhoba@yahoo.co.uk