



# THE TECHNICAL UNIVERSITY OF KENYA

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NAME: DR FREDRICK MUTIE MUSILA

Faculty:	Applied Sciences and Technology
School:	Biological and Life Sciences
Department:	Applied and Technical Biology
Current Designation:	Lecturer, APPLIED AND TECHNICAL BIOLOGY (DATB)
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Consultation Hours:	8AM-5PM MON - FRI



## EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
Doctor of Philosophy (PhD)	PLANT TAXONOMY & ECONOMIC BOTANY	UNIVERSITY OF NAIROBI(Kenya)	2017
Masters of Science (M.Sc.)	BOTANY	UNIVERSITY OF NAIROBI(Kenya)	2012
Bachelor of Science (BSc)	BIOLOGY	UNIVERSITY OF NAIROBI(Kenya)	2010
O level/Equivalent	Kenya Certificate of Secondary Education	KITHUNGUINI SEC SCHOOL(Kenya)	2004

## WORK EXPERIENCE

<b>PERIOD</b>	<b>INSTITUTION</b>	<b>POSITION</b>
2018 - TO DATE	TECHNICAL UNIVERSITY OF KENYA	LECTURER
2015 - 2017	TECHNICAL UNIVERSITY OF KENYA	TUTORIAL FELLOW
2013 - 2015	KENYATTA UNIVERSITY	PART-TIME LECTURER
2014 - 2015	JOMO KENYATTA UNIVERSITY OF AGRICULTURE & TECHNOLOGY	PART-TIME LECTURER
2014 - 2015	EMBU UNIVERSITY COLLEGE	PART-TIME LECTURER

#### CURRENT RESEARCH PROJECTS

Molecular phylogeny, biochemical systematics and antimicrobial activity of <i>Plectranthus</i> species	Plant Taxonomy, Economic Botany, Natural product Research
Development of vibriophage derived endolysin computational library for application in rapid detection and control of <i>Vibrio cholerae</i> pathogen in water	Bioinformatics
Identification of phytochemicals with medicinal properties from Kenyan medicinal plants/ In silico Identification of molecules with anticancer properties	Natural Product Research/Bioinformatics

#### SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
Fredrick M. Musila, Catherine W. Lukhoba, Joseph M. Nguta, and Saifuddin F. Dossaji, "Phylogeny of Ten Kenyan <i>Plectranthus</i> Species in the <i>Coleus</i> Clade Inferred from Leaf Micromorphology, Rbcl and MatK Genes," <i>Journal of Botany</i> , vol. 2017, Article ID 4369029, 16 pages, 2017. doi:10.1155/2017/4369029	<a href="#">View online</a>	2017
Musila, M.F, 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. <i>Journal of Ethnopharmacology</i> 146, 557-561	<a href="#">View online</a>	2013
Kaigongi, M. M., Dossaji, S.F., Lukhoba, C.W., Musila, M. F., 2014. Antimicrobial activity, Toxicity and Phytochemical Screening of Four Medicinal Plants Traditionally used in Msambweni District, Kenya. <i>Journal of Biology, Agriculture and Healthcare</i> , 4(28), 6-12	<a href="#">View online</a>	2014
Kaigongi, M., Musila, M. F. (2015). Ethnobotanical study of medicinal plants used by Tharaka people of Kenya. <i>International Journal of Ethnobiology &amp; Ethnomedicine</i> , 1(1).1-8	<a href="#">View online</a>	2015
Musila,F.M., Lukhoba,C.W., Nguta,J.M. and Dossaji,S.F. 2018.Plectranthus ribulose-1,5-bisphosphate carboxylase/oxygenase large subunit-like gene, partial sequence; chloroplast. Popset.	<a href="#">View online</a>	2018
Musila,F.M., Lukhoba,C.W., Nguta,J.M. and Dossaji,S.F. 2018.Plectranthus maturase K-like gene, partial sequence; chloroplast. PopSet.	<a href="#">View online</a>	2018
Musila FM, Lukhoba CW, Dossaji SF, Nguta JM. 2017. "Molecular Phylogeny of ten Kenyan <i>Plectranthus</i> species in the <i>Coleus</i> clade." in <i>Proceedings of the XXI AETFAT congress;Systematics, biogeography and Conservation of African plants and fungi</i> . Catholic University of Eastern Africa, Nairobi, Kenya.	<a href="#">View online</a>	2017
Ali HM, Nguta JM, Mapenay IO, Musila FM, Vincent OM, Nyak DM. Ethnopharmacological uses, biological activities, chemistry and toxicological aspects of <i>Ocimum americanum</i> var. <i>americanum</i> (Lamiaceae). <i>J Phytopharmacol</i> 2021;10(1):56-60	<a href="#">View online</a>	2021
Musila, F M, Nguta JM, Lukhoba CW, Dossaji SF. 2017. Antibacterial and antifungal activities of ten Kenyan <i>Plectranthus</i> Species in the <i>Coleus</i> Clade, <i>Journal of Pharmacy Research</i> , 11(8),1003-1014	<a href="#">View online</a>	2017
Hashim Ali, Joseph Nguta, Fredrick Musila, Isaac Ole-Mapenay, Dorine Matara, James Mailu, "Evaluation of Antimicrobial Activity, Cytotoxicity, and Phytochemical Composition of <i>Ocimum americanum</i> L. (Lamiaceae)", <i>Evidence-Based Complementary and Alternative Medicine</i> , vol. 2022, Article ID 6484578, 11 pages, 2022. <a href="https://doi.org/10.1155/2022/6484578">https://doi.org/10.1155/2022/6484578</a>	<a href="#">View online</a>	2022
Matara, D. N., Nguta, J. M., Musila, F. M., & Mapenay, I. (2021). Phytochemical Analysis and Investigation of the Antimicrobial and Cytotoxic Activities of <i>Croton dichogamus</i> Pax Crude Root Extracts. <i>Evidence-Based Complementary and Alternative Medicine</i> , 2021.	<a href="#">View online</a>	2021
Michael, E.S., Yole,D., Musila, M.F., Kutima, H.,Kareru, P., 2013. Assessment of Molluscicidal, Cercericidal and Miracidal Activities of Crude Extracts of <i>Azadirachta indica</i> and <i>Entada leptostachya</i> . <i>Journal of Biology, Agriculture and Healthcare</i> , 3(5), 11-17.	<a href="#">View online</a>	2013
Matara DN, Nguta JM, Musila FM, Mapenay I, Ali HM, Omambia VM. Botanical description, ethnomedicinal uses, phytochemistry and pharmacological effects of <i>Croton dichogamus</i> Pax(Euphorbiaceae). <i>J Phytopharmacol</i> 2021;10(1):42-47	<a href="#">View online</a>	2021
In silico exploration of Lycoris alkaloids as potential inhibitors of SARS-CoV-2 main protease (Mpro). <i>European Journal of Biological Research</i> , 12(3), 238-261. 2022.	<a href="#">View online</a>	2022
Chebet, D.; Musila, F.M.; Kituyi, S.N.; Muthike, G.M.; Kaigongi, M.M. Molecular Phylogeny of Selected Kenyan <i>Eucalyptus</i> Species Inferred from MatK, rbcL and TrnL-F Genes and Their Suitability for Power Transmission Poles. <i>Diversity</i> 2022, 14, 563. <a href="https://doi.org/10.3390/d14070563">https://doi.org/10.3390/d14070563</a>	<a href="#">View online</a>	2022
A versatile untargeted metabolomics-driven technology for rapid phytochemical profiling of stem barks of <i>Zanthoxylum</i> species with antioxidant and antimicrobial activities. <i>Advances in Traditional Medicine</i> , 1-17.(2022).	<a href="#">View online</a>	2022
Evaluation of Pathogenicity of Entomopathogenic Oomycetes <i>Lagenidium giganteum</i> and <i>L. ajelloi</i> against <i>Anopheles</i> Mosquito Larvae, <i>Psyche: A Journal of Entomology</i> , vol. 2023, Article ID 2806034, 10 pages, 2023. <a href="https://doi.org/10.1155/2023/2806034">https://doi.org/10.1155/2023/2806034</a>	<a href="#">View online</a>	2023
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 <i>Cissus rotundifolia</i> Lam. <i>Metabolites</i> 2021, 11, 741. <a href="https://doi.org/10.3390/metabo11110741">https://doi.org/10.3390/metabo11110741</a>	<a href="#">View online</a>	2021
Effects of Land Use on the Riparian Vegetation in Mau Forest Complex in Kenya. <i>Global Ecology and Conservation</i> , e02624. doi.org/10.1016/j.gecco.2023.e02624	<a href="#">View online</a>	2023

POSTGRADUATE STUDENTS SUPERVISION

NAME	PROJECT TITLE	PERIOD
Daudi Kiplangat Ruto, Msc Student	Impact of Land use on Riparian land diversity along tributaries of Itare Dam in Nakuru County, Kenya.	2020-2023
Daisy Chebet, Msc student	Project title: Assessment of genetic diversity and suitability of Eucalyptus species as power transmission poles	2020-2024
Njagi Jairus Njeru, Msc student	In-Vitro Antimicrobial Activity and Toxicity of Medicinal Plants Selected from Kirinyaga and Machakos County In Kenya	2023-To date