

PROFESSOR NANCY BUDAMBULA

Name: Prof Nancy Budambula

Title/Qualification: PhD **Position:**

Associate Professor **Department:**

Biological Sciences

School: Pure and Applied Sciences (SPAS)

Area of Specialization: Microbiology and Genetics

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Short Biography

Teaching experience at the University

2014 to Present: Associate Professor at University of Embu

2007 to 2014: Senior Lecturer Jomo Kenyatta University of Agriculture and Technology (JKUAT)

1998 to 2007: Lecturer (JKUAT).

1995 to 1998: Assistant Lecturer (JKUAT)

Management and Administration

July 2014 to Present: Director BPS, University of Embu

September 2013 to June 2014: Acting Dean, School of Biological Sciences (JKUAT)

February 2013 to August 2013: Associate Dean, Faculty of Science (JKUAT) October

2012 to January 2013: Acting Associate Dean (JKUAT)

2009 to 2013: Chairman, Department of Botany 2009 to 2013 (JKUAT)

Research Interests

Bio prospecting for novel microorganisms from the environment Antibiotic resistance

Viral genetics

Water pollution

Publications in Journals:

1. Muli J.K., J O. Neondo, P. K. Kamau and **N.L.M. Budambula (2020)**. Genetic diversity and use of African indigenous vegetables especially slender leaf. *International Journal of Vegetable Science* <https://doi.org/10.1080/19315260.2020.1829768>
2. Muriuki S. W., J.O Neondo and **N. L.M. Budambula (2020)**. Detection and profiling of antibiotic resistance among culturable bacterial isolates in vended food and soil Samples. *International Journal of Microbiology* <https://doi.org/10.1155/2020/6572693>
3. Wasonga, M. A., E. E. Arunga, J. O. Neondo, J.K Muli, P.K. Kamau and **N.L.M Budambula (2020)**. A hybridization technique for orphan legumes: Development of an artificial interspecific pollination protocol for *Crotalaria* spp. *Journal of Crop Improvement* <https://doi.org/10.1080/15427528.2020.1810189>
4. Mwakha, F., **Budambula, N.**, Neondo, J., Gichimu, B., Odari, E., & Kamau, P. et al. (2020). Witchweed's Suicidal Germination: Can Slenderleaf Help?. *Agronomy*, 10(6), 873. doi: 10.3390/agronomy10060873
5. Omire, A., Neondo, J., **Budambula, N.**, Gituru, R., & Mweu, C. (2020). *Hyphaene compressa*, an important palm in the arid and semi-arid regions of Kenya. *Ethnobotany Research And Applications*, 20. doi: 10.32859/era.20.4.1-15

6. Omire, A., **Budambula, N.**, Kirumbi, L., Langat, H., Kerosi, D., Ochieng, W., & Lwembe, R. (2020). Cervical Dysplasia, Infection, and Phylogeny of Human Papillomavirus in HIV-Infected and HIV-Uninfected Women at a Reproductive Health Clinic in Nairobi, Kenya. *Biomed Research International*, 2020, 1-10. doi: 10.1155/2020/4945608
7. Mwakha, F. A., Gichimu, B.M., Neondo, J.O., Kamau, P.K, Odari, E. O., Muli, J. K., **Budambula, N.L.M** (2020). Agro-Morphological Characterization of Kenyan Slender Leaf (*Crotalaria brevidens* and *C. ochroleuca*) Accessions. Hindawi, *International Journal of Agronomy Volume 2020*, Article ID 2710907, 10 pages <https://doi.org/10.1155/2020/2710907>
8. M. M. Nzivo , R. M. Lwembe, E. O. Odari, J. M. Kang'ethe, and **N. L. M. Budambula** (2019). Prevalence and Risk Factors of Human Herpes Virus Type 8 (HHV-8), Human Immunodeficiency Virus-1 (HIV-1), and Syphilis among Female Sex Workers in Malindi, Kenya. *Interdisciplinary Perspectives on Infectious Diseases* Volume 2019, Article ID 5345161, 8 pages <https://doi.org/10.1155/2019/5345161>
9. Gatimbu K.K., Ogada M.J. and **Budambula N.L.M.** (2019). Environmental efficiency of small-scale tea processors in Kenya: an inverse data envelopment analysis (DEA) approach. *Environment Development and sustainability*. <https://doi.org/10.1007/s10668-019-00348-x>
10. Gatimbu K.K., Ogada, M.J. **Budambula N.** and S. Kariuki (2018). Environmental sustainability and financial performance of the small-scale tea processors in Kenya. <https://doi.org/10.1002/bse.2243>
11. Ghilamical A.M., **N. L. M. Budambula**, S.E. Anami, T. Mehari and H.I. Boga (2018). Thermotolerant bacteria of biotechnological potential from hot springs in Eritrea. *African Journal of Microbiology Research* 12(22): 512-524. DOI: 10.5897/AJMR2017.8626.
12. Muli J. K., **N. Budambula**, C. Mweu and S. E. Anami (2018). Drought Response in Selected Tropical Inbred Maize Lines and Relative Expression of PARP2 Gene under Limited Water Conditions. *Plant* 6:8-15. doi: 10.11648/j.plant.20180601.12

13. Ghilamical A.M., H.I. Boga, S. E. Anami, T. Mehari and **N.L.M. Budambula (2018)**. Potential human pathogenic bacteria in five hot springs in Eritrea revealed by next generation sequencing. PLoS ONE 13(3): e0194554. <https://doi.org/10.1371/journal.pone.0194554>
14. Koech C.C., Lwembe R.M., Odari E.O., **Budambula N.L.M. (2018)**. Prevalence and Associated Risk Factors of HTLV/HIV Co-Infection among People who inject Drugs (PWIDs): A Review. *Journal of Human Virology and Retrovirology* 6(1): 00188. DOI: 10.15406/jhvr.2017.06.00188
15. Nzivo M.M., R. Lwembe, E.O Odari and N.L.M. **Budambula N.L.M (2017)**. Human Herpes Virus Type 8 among Female-Sex Workers. *J Hum Virol Retrovirol* 5(6): 00176. DOI: 10.15406/jhvr.2017.05.00176
16. Muli J.K., C. Mweu, **N. Budambula** and S.E. Anami (2017). Yeast Extract Peptone Based Co-cultivation Media Promotes Transient GUS Expression in Tropical Maize Genotypes. *Asian Journal of Crop Science* 9:
17. Ghilamical A.M., **N. L. M. Budambula**, S. E. Anami, T. Mehari and H. I. Boga (2017). Evaluation of Prokaryotic Diversity of Five Hot Springs in Eritrea. *BMC Microbiology* 17:203. <https://doi.org/10.1186/s12866-017-1113-4>.
18. Ghilamical A.M., H.I. Boga, S. E. Anami, T. Mehari and **N.L.M. Budambula (2017)**. Physical and Chemical Characteristics of Five Hot Springs in Eritrea. *Journal of Natural Sciences Research* 7(12): 88-94.
19. Budambula V. and **N. L. M. Budambula (2017)**. Chasing the Dragon: Drug Use and Abuse. ISBN: 9789966103024

20. Imbo M.C., **N. L. M. Budambula**, C.M. Mweu, J. K. Muli and S. E. Anami (2016). Genetic Transformation of Sweet Potato for Improved Tolerance to Stress: A Review. *Advances in Life Science and Technology* 49:67-76
21. Muli J.K., N. L. M. Budambula, C. Mweu, M. C. Imbo and S. E. Anami (2016). Genetic Improvement of African Maize towards Drought Tolerance: A Review. *Advances in Life Science and Technology* 48: 1-9.
22. Muwawa E.M, **N. L. M. Budambula**, Z. L. Osiemo, H. I. Boga and H.M. Makonde (2016). Isolation and characterization of some gut microbial symbionts from fungus-cultivating termites (*Macrotermes* and *Odontotermes* spp). *African Journal of Microbiology Research* 10:994-1004 DOI: 10.5897/AJMR2016.8060.
23. Missiani O., J. H. Kimotho, J. Oyugi, F. Okoth, H. Kioko, S. Mining, **N. L. M. Budambula**, E. Giles, A. Andonov, E. Songok and C. Osiowy (2016). Hepatitis B infection is highly prevalent among patients presenting with jaundice in Kenya. *BMC Infectious Diseases* 16:101 DOI 10.1186/s12879-016-1409-2
24. Kerosi D.O., **N. L. M. Budambula**, E. Odari, R. Lihana, S. Osman, A. Omire, H. Langat, R. Aman and R. Lwembe. (2015). Human Immunodeficiency Virus -1 and Hepatitis B Virus Co-Infections among Injecting Drug Users in Malindi, Kenya. *Journal of Biology, Agriculture and Healthcare* 5 (22): 45-50
25. Kiama C., **N. L. M Budambula**, S. Okoth, R. Kagali and V. Matiru. (2015). Cultural Characterization of Fungi Isolated From Oil Contaminated Soils. *Journal of Biology, Agriculture and Healthcare* 5: 16-21
26. Onchwari R. G., Potentially beneficial rhizobacteria associated with banana plants in Juja, Kenya. *Journal of Biodiversity and Environmental Sciences* 7:181-188
27. Webale M. K., V. Budambula, R. Lihana, F.O. Musumba, A. K. Nyamache, **N. L. M. Budambula**, A. A. Ahmed, C. Ouma and T. Were (2015). Hepatitis B virus sero-profiles and genotypes in HIV-1

- infected and uninfected injection and Non-injection drug users from coastal Kenya. *BMC Infectious Diseases* 15:299. DOI 10.1186/s12879-015-1060-3
28. dari E.O, **N. L. M Budambula** and H.Nitschko (2014) .Evaluation of an Antigen-Antibody “Combination” Enzyme Linked Immunosorbent Assay for Diagnosis of Hepatitis C Virus Infections. *Ethiopian Journal of Health Sciences* 24: 343-352.
29. Omire A., **N. Budambula**, W. Ochieng, C. Baliach, D. Kerosi, H. Langat, M.Okemwa, L. Kirumbi, R. Aman, B. Ogutu and R. Lwembe (2014). Assessment of Risk Predisposition to Human Papilloma Virus through Cervical Infections Screening of Women Attending an Outpatient Health Facility in Nairobi, Kenya. *Journal of Biology, Agriculture and Healthcare* 4: 28-36
30. Muwawa E. M., H. M. Makonde, **N. L. M. Budambula**, Z. L. Osiemo and H.I. Boga (2014). Chemical properties associated with guts, soil and nest materials of *Odontotermes* and *Macrotermes* species from Kenya.*Journal of Biodiversity and Environmental Sciences* 4: 253-263
31. Odari E. O., S. G. Odhiambo and **N. L. M. Budambula** (2014). Laboratory surveillance of cholera in Nyanza Province. *Journal of Agriculture, Science and Technology*. 16 (1):79-91.
32. Njire M. M. , **N. L. M. Budambula** and Antimicrobial activity of *Warbugiaugandensis* against Gram-negative Multi-drug resistant bacteria. *Journal of Agriculture, Science and Technology*. 16(2): 45-57
33. Ogot H. A, H. I Boga, Isolation, characterization and identification of roundup degrading bacteria from the soil and gut of 1:31-38.
34. Ogot H.A., , M. Tsanuo and D.O.Andika Isolation, characterization and identification of Diazinon degrading bacteria from the soil and gut of *Macrotermes* *Journal of Biodiversity and Environmental Sciences* 3: 70-79.
35. Ronoh R.C., Isolation and Characterization of Actinobacteria from Lake Magadi, Kenya. *African Journal of Microbiology Research* 7: 4200-4206.

36. Kwange S.O., **N. L.M. Budambula**, M. K. Kiptoo, F. Okoth, M. Oduor, J. M. Ochwoto and J. H. Kimotho Hepatitis B virus subgenotype A1, occurrence of subgenotype D4 and S gene mutations among voluntary Blood Donors in Kenya. *Virus Genes* 47: 448-455
37. Muhonja C., N. Budambula, J. Kiiru and S. Kariuki. (2012). Characterization of antibiotic resistance in environmental enteric pathogens from Kibera slum in Nairobi-Kenya. *Journal of Bacteriology Research* 4: 46-54.
38. Kwange S.O. and **N. L. M. Budambula**. (2010). Effectiveness of antituberculosis treatment among patients receiving highly active antiretroviral therapy at Vihiga District Hospital in 2007. *Indian Journal of Medical Microbiology* 28: 21-25.
39. Mwirichia R.K., **N. M. Budambula** and H.I. Boga (2009). Isolation, characterization and identification of Enterobacteriaceae from well water in Juja Town in Kenya. *Journal of Tropical Microbiology and Biotechnology* 5:31-36.
40. **Budambula** Antibiotic resistance of bacteria isolated from Nairobi River. *Asian Journal of Microbiology, Biotechnology and Environmental Science* 8: 9-12.
41. **Budambula** Isolation and characterization of naphthalene utilising bacteria from Nairobi River. *Asian Journal of Microbiology, Biotechnology and Environmental Science*. 8: 1-8.
42. **Budambula** Metal status of Nairobi River Waters and Bioaccumulation of Metals in *Labeo Cylindricus*. *Water, Air and Soil Pollution* 169:275-291.
43. **Budambula N.L.M.**, E.C. Mwachiro, N.M. Gitonga and S. Kariuki (2004). Isolation of Mercury, Zinc and Cadmium resistant bacteria from Nairobi River. *Proceedings of the 2nd Regional Microbiology Conference Recent advances in microbial research and their implications to Health, Agriculture and Environment*. Pages 181-190.
44. **Budambula N** and P. Wangari. (1998) *Proceedings of the International workshop on Women and Desertification*. Environmental Liason International Centre.
45. Budambula N. (1995). *Implementing the Desertification Convention: The Kenyan Experience*. The Network.

Selected Conference Papers

1. Kinyua D.M and **N. L. M Budambula (2013)**. Antibiotic resistance of metal tolerant bacteria isolated from soil in Juja, Kenya. JKUAT Scientific, Technological and Industrialization Conference November
2. Njire M.M., **N. L. M. Budambula** and J.N. Kiiru **(2010)**. Antimicrobial effects of selected herbal extracts on Multi-drug resistant Gram-negative bacterial strains. Proceedings of the 2010 JKUAT Scientific, Technological and Industrialization Conference. Pages 131-138
3. Ndegwa D.W, Wahiu F. W. and **N. L. M. Budambula (2007)**. Characterization of bacterial contaminants in milk hawked at Kahawa West. Proceedings of the 2007 JKUAT Scientific, Technological and Industrialization Conference. Pages 292-302.
4. Nzau B., S. Kariuki and **N. L. M .Budambula (2007)**. Antimicrobial resistance in Salmonella enterica serotype typhimurium and Salmonella enterica serotype enteritidis. Proceedings of the 2007 JKUAT Scientific, Technological and Industrialization Conference. Pages 227-233.

Doctor of Philosophy Students

1. OchwotoMissiani

2011 to date

Molecular Characterization of acute and chronic viral hepatitis in selected hospitals in Kenya

2. Peter Onkware

2012 to date

Mycobacteria and bacterial coinfections among patients at Kenyatta National Hospital and their susceptibility to antibiotics and selected plant extracts.

3. Amanuel Menghs Ghilamicael 2013 to date

Prokaryotic Diversity and Thermozyemes from Thermophilic Bacteria from Hot Springs in Eritrea.

Master of Science Students

Romano K. Mwirichia 2005 to 2006 graduated

Isolation and Characterization of Enterobacteriaceae from Well water in Juja town and its

1. Ogot O. Hellen 2005 to 2007 graduated

Isolation, characterization and identification of pesticide degrading bacteria isolated from the soil and intestinal

2. Eddy Okoth Odari 2009 to 2010 graduated.

Evaluation of a “combination” Elisa Kit and genotyping performance of restriction fragment length polymorphism among Hepatitis C virus infected patients’ sera.

3. Moses Mucugi Njire 2009 to 2011 graduated

Antimicrobial effects of selected herbal extracts on clinical multi-drug resistant Gram- negative bacteria.

4. Doris Wangari Ndegwa 2008 to 2011 graduated

Characterisation of aminoglycoside resistant bacterial strains implicated in invasive infections in Kenya.

5. Regina Ronoh 2010 to 2012 graduated

Genetic diversity of actinobacteria in Lake Magadi.

6. Christabel Muhonja 2010 to 2012 graduated

Characterisation of antibiotic resistance among environmental enteric pathogens in Gatwekera village of Kibera slum-Kenya.

7. Simeon Kwange Owour 2011 to 2013 graduated

Distribution of Hepatitis B virus genotypes and frequency of its mutants among Blood Donors in selected regional blood transfusion centres in Kenya

9. Edith Mnyazi Muwawa 2012 to date- graduated

Assessment of dynamics of nitrogen species and microsymbionts in soils, guts and nest materials of termites.

8. Agnes Omire 2012 to date- thesis submitted

Genetic variability of the Human Papillomavirus among HIV positive and HIV negative women attending reproductive health clinic at KenyattaNationalHospital.

10. Ruth Gechemba Onchwari **2012 to date- thesis writing in progress** Isolation and characterization of Rhizosphere bacteria from banana plants within juja with potential to improve plant growth.

11. Kerosi Danvas Ongwacho **2012 to date -research in progress**

Genetic variability of Human immunodeficiency virus and Hepatitis B among HIV/ Hepatitis BC coinfecting intravenous drug users in Malindi.

12. Paulyne Akoth **2013 to date thesis writing in progress**

Genetic Diversity and Distribution of Termites in Taita Taveta County.

13. Joshua Kiilu Muli **2014 to date research in Progress**

Transgenic maize overexpressing PARP hairpin construct for drought stress tolerance.

14. Mary Claire Imbo **2014 to date research in Progress**

Competence to agrobacterium mediated transformation and expression analysis of NUDX gene in eight selected farmer preferred sweet potato genotypes.

15. Mirriam Nzivo **2014 to date Research proposal awaiting ERC approval**

Characterization of Human Herpes Virus Type 8 among Female Commercial Sex Workers in Malindi, Kenya.

16. Douglas Muthomi Kinyua **2014 to date Research proposal awaiting ERC approval**

Hepatitis C Virus- Human Immunodeficiency Virus Coinfection among Prisoners at Shimo La Tewa Prison, Kenya.

17. Caroline Koech **2014 to date Research proposal awaiting ERC approval**

Characterization of human T-cell lymphotropic virus among intravenous drug users in Malindi, Kenya.

18. Grace Mutua 2014 date to Research proposal awaiting ERC approval Relationship between genital Human Papillomavirus infections and prostate cancer in patients attending the urology clinic at Kenyatta National Hospital.