

# DR. JOSHUA KIILU MULI

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## **Vision**

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To be a leading contributor to biotechnology innovations and products towards alleviating hunger, poverty and disease in Africa.

## **Educational Background**

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### **Tertiary**

- January 2018 – September 2022: University of Embu  
P.O Box 6-60100, Embu, Kenya  
PhD Genetics  
Thesis Title: Genetic Diversity and Gene Expression in *Crotalaria* Species from selected counties in Kenya
- May 2013 – November 2017: Jomo Kenyatta University of agriculture and technology (JKUAT)  
P.O. Box 62000- 00200, Nairobi, Kenya  
MSc Genetics  
Thesis title: Competence of Tropical Maize Lines to *Agrobacterium*-Mediated Transformation and The Expression of Maize Poly (ADP-Ribose) Polymerase (PARP2) Gene under Drought Stress.
- May 2010 – December 2012: JKUAT  
P.O. Box 62000- 00200, Nairobi, Kenya  
Bsc Biotechnology- First class honors
- September 2007-December 2009 Bukura Agricultural College  
P.O Box 23-50105, Bukura, Kenya  
Diploma in agriculture and Biotechnology-Distinction
- March 2005-April 2007 Kilifi institute of Agriculture  
Certificate in agriculture- Distinction

## Skills

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Biotechnology laboratory operations including DNA and RNA isolation, transformation, PCR and Gel electrophoresis, bioinformatics analysis of nucleic acid data and biological and agricultural data analysis using various tools such as R, SAS and SPSS

Plant Tissue culture

Marker assisted selection in plant breeding

Crop production and maintenance

## Research interests

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Bioinformatics

Plant transformation and genetic modifications

Genome editing

## Publications

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1. **Muli, J. K.**, Neondo, J. O., Kamau, P. K., Michuki, G. N., Odari, E., & Budambula, N. L. (2022). Genetic diversity and population structure of wild and cultivated *Crotalaria* species based on genotyping-by-sequencing. *Plos one*, 17(9).
2. Wasonga, M. A., Arunga, E. E., Neondo, J. O., **Muli, J. K.**, Kamau, P. K., & Budambula, N. L. (2021). A hybridization technique for orphan legumes: development of an artificial interspecific pollination protocol for *Crotalaria spp.* *Journal of Crop Improvement*, 35(2), 264-275.
3. **Muli, J. K.**, Neondo, J. O., Kamau, P. K., Odari, E., & Budambula, N. L. (2021). Phenomic characterization of *Crotalaria* germplasm for crop improvement. *CABI Agriculture and Bioscience*, 2(1), 1-15.
4. **Muli, J. K.**, Neondo, J. O., Kamau, P. K., & Budambula, N. L. (2020). Genetic diversity and use of African indigenous vegetables especially slender leaf. *International Journal of Vegetable Science*, 1-19.
5. 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. *International Journal of Agronomy*, 2020, 1–10.
6. Mwangangi, I., **Kiilu Muli, J.**, & Neondo, J. (2019). Plant Hybridization as an Alternative Technique in Plant Breeding Improvement. *Asian Journal of Research in Crop Science*, 4(1), 1-11.
7. **Muli J.K.**, N. L. M. 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(1):8-15

8. Bashiloni Naaty, Cecilia Mweu Mbithe, Aggery Bernard Nyende, Peter Njenga, **Joshua Kiilu Muli** (2017). *In Vitro* Regeneration via Somatic Embryogenesis of *Schizosygia coffeoides*. balli (Mpelepele). American Journal of Plant Biology 2(2): 66-72.
9. **Muli J. K.** (2017). Competence of Tropical Maize Lines to Agrobacterium-Mediated Transformation and the Expression of Maize Poly (ADP-Ribose) Polymerase (PARP2) Gene under Drought Stress. Jomo Kenyatta University of Agriculture and Technology
10. **Muli J.K.**, N. L. M. Budambula, C. Mweu, 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(3):71-81.
11. 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
12. **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