



## Curriculum Vitae

**Personal Information****First name(s) / Surname(s)****Address(es)****Telephone(s)****E-mail****Nationality****Date of birth****Gender**

**DR. OMayio Dennis Ondieki (PhD); Plant pathologist & biotechnologist**  
 Masinde Muliro University of Science and Technology; P.O. Box 190-50100  
 Kakamega  
 +254719270730  
[denomatec@gmail.com](mailto:denomatec@gmail.com) or [domayio@mmust.ac.ke](mailto:domayio@mmust.ac.ke)  
 Kenyan; **I.D NO: 25208499**  
 09.09.1986 **ORCID ID: <https://orcid.org/0000-0002-5793-4168>**  
 Male **WOS RESEARCHER'S ID: AAU-1223-2021**

**Career Objective**

To glorify God through the work of my hands in an innovative manner based on; wisdom, knowledge, humility and understanding towards making the world a better place for all of us.

**Professional Body Affiliations**

1. American Phytopathological Society (APS) – **MEMBER ID: 264104**
2. International Society for Plant Pathology – **APS associate organization**
3. Horticulture Association of Kenya (HAK)

**Authored & Deposited Molecular Sequences in NCBI's GenBank Database**

1. Eighteen *Ustilago kamerunensis* isolates' genome elements sequences

**Current research interests**

1. Papaya fruit trees and seed modification towards enhanced vigour and improved rapid fruit production
2. Hormone signalling and manipulation towards improving resistance of crops to stressors.
3. Juvenile phase reduction and growth vigor enhancement of fruit trees using physical modification strategies.
4. Chromosome manipulation of plants to enhance tolerance to stressors.
5. Role of plant hormones in balancing immune responses.

**Broad Fields of Specialization**

- ❖ Microbial biotechnology
- ❖ General Microbiology
- ❖ Genetics
- ❖ Plant pathology
- ❖ Plant breeding & improvement
- ❖ Crop protection
- ❖ Agricultural biotechnology
- ❖ Plant biotechnology
- ❖ Molecular biology
- ❖ Environmental Biotechnology
- ❖ Plant physiology
- ❖ Seed Technology
- ❖ Mycology
- ❖ Cytogenetics and chromosomal manipulations
- ❖ Biostatistics

**Areas of teaching specializations****Current areas of teaching in postgraduate and undergraduate courses include;**

- ❖ Plant pathology
- ❖ Plant breeding and seed technology
- ❖ Seed pathology and seed fortification
- ❖ Crop diseases epidemiology and management
- ❖ Microbial processes on environmental management
- ❖ Plant mycology and bacteriology
- ❖ Microbiology II
- ❖ Plant structure and function
- ❖ Survey of the plant kingdom
- ❖ Genetics

- ❖ Genome organization
- ❖ Biostatistics
- ❖ Chromosomal manipulation and cytogenetics
- ❖ Cytology and cytogenetics
  
- ❖ Research and Project work
- ❖ Plant biotechnology
- ❖ Mycology I
- ❖ Molecular biology

### Education and training

<b>Date</b>	2015-2018
<b>Title of qualification targeted</b>	Doctor of Philosophy in Plant Pathology
<b>Thesis title</b>	Morphological and molecular characterization, pathogenicity and co-infection of <i>Ustilago kamerunensis</i> with “ <i>Candidatus</i> Phytoplasma oryzae” strain Mbita 1 on napier grass growth tolerance under varying nutrients and moisture levels.
<b>Principal subjects</b>	Plant pathology, Microbiology, Molecular genetics, Biostatistics & modeling, Mycology, Phylogenetics
<b>Institution</b>	Maseno University
<b>Level in international</b>	Tertiary institution
<b>Date</b>	2011-2013
<b>Title of qualification awarded</b>	Master of Science in Crop Protection & Biotechnology
<b>Thesis title</b>	Resistance of napier grass ( <i>Pennisetum purpureum</i> ) accessions to head smut pathogen <i>Ustilago kamerunensis</i> .
<b>Principal subjects</b>	Molecular biology, microbiology, mycology, plant pathology, Plant genetics, Biotechnology & Biostatistics
<b>Skills acquired</b>	Presentation skills, data analysis, data collection and management, experimentation
<b>Institution</b>	Masinde Muliro University of Science and Technology
<b>Level in international</b>	Tertiary institution
<b>Date</b>	2007-2011
<b>Title of qualification awarded</b>	Bachelor of Science in Biotechnology

<b>Principal subjects</b>	Molecular biology, Genetics, biotechnology, Industrial microbiology and Plant breeding
<b>Name of organisation</b>	Masinde Muliro University of Science and Technology
<b>Level in international Classification</b>	Tertiary institution First Class Honours (80.5 Points)
<b>Dates</b>	2001-2004
<b>Title of qualification awarded</b>	Kenya Certificate of Secondary Education (KCSE)
<b>Principal subjects</b>	Physics, Chemistry, Biology, Mathematics, geography, English
<b>Name of organisation</b>	Alliance High School
<b>Level in international Classification</b>	Secondary education A-
<b>Dates</b>	1996-2000
<b>Title of qualification awarded</b>	Kenya Certificate of Primary Education (KCPE)
<b>Name of organisation</b>	Eronge Adventist Primary School
<b>Level in international Points</b>	Primary education 83/84
<b>Work experience</b>	
<b>Dates</b>	From August 2019 to date
<b>Occupation or position held</b>	Lecturer, Academic advisor, Departmental graduate school committee chairman.
<b>Main responsibilities</b>	Lecturing, curriculum review, postgraduate students' supervision, research, knowledge dissemination & community outreach
<b>Employer name and address</b>	Masinde Muliro University of Science and Technology, P. O. Box 190-50100 Kakamega
<b>Faculty and department</b>	School of Natural Sciences; Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From September 2014 to August 2019
<b>Occupation or position held</b>	Assistant Lecturer, Exam coordinator, Academic advisor, Quality assurance coordinator and University Biosecurity officer.
<b>Main responsibilities</b>	Lecturing, Curriculum review, Exam setting, Practicals designing, Exam coordination

<b>Employer name and address</b>	Masinde Muliro University of Science and Technology, P. O. Box 190-50100 Kakamega
<b>Faculty and department</b>	Faculty of Science; Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From August 2012 to August 2014
<b>Occupation or position held</b>	Research Consultant/Partner- Eastern Africa Agricultural Productivity Project Pasture
<b>Main activities</b>	Co-ordinating and Implementing of Biotechnology & Crop protection project
<b>Employer name and address</b>	KALRO-Muguga & Kakamega, P. O. Box 30148 Nairobi
<b>Type of business or sector</b>	Agricultural research sector
<b>Date</b>	From August 2011 to August 2014
<b>Occupation or position held</b>	Graduate assistant and Masinde Muliro University scholar
<b>Main activities</b>	Co-lecturing, Lecturing, Practicals designing/Implementation, Exam marking/Invigilation
<b>Employer name and address</b>	Masinde Muliro University of Science and Technology, P. O. Box 190-50100 Kakamega
<b>Type of business or sector</b>	Higher education sector
<b>Dates</b>	From May 2010 to August 2010
<b>Occupation or position held</b>	Molecular diagnostics laboratory technologist
<b>Main activities</b>	Diagnosis of virus infected plant samples and reporting results
<b>Employer name and address</b>	Kenya Agricultural Research Institute- Njoro; Private bag Njoro, Kenya
<b>Type of business or sector</b>	Agricultural research sector
<b>Dates</b>	From March 2009 to April 2009
<b>Occupation or position held</b>	MMUSO Constitutional review commissioner
<b>Main activities</b>	Review the old constitution, gather views and draft a new MMUSO constitution

<b>Employer name and address</b>	Masinde Muliro University Students Welfare Docket; 190-50100 Kakamega
<b>Type of business or sector</b>	University students' Social and welfare sector
<b>Dates</b>	From May 2008 to February 2009
<b>Occupation or position held</b>	Research assistant
<b>Main activities</b>	Data collection, management and analysis and mushroom spawn developer
<b>Employer name and address</b>	Dr. Valerie Palapala; Masinde Muliro University- 190 Kakamega
<b>Type of business or sector</b>	Private biological research projects

### Appointments

<b>Dates</b>	From June 2021 to Date
<b>Occupation or position held</b>	Chairman Alcohol and Drug Abuse (ADA) Committee - MMUST
<b>Main responsibilities</b>	Develop and implement policy on management of alcohol & drug abuse in MMUST. Implement a student/employee assistance program for MMUST focusing on identification, treatment and rehabilitation of individuals with ADA related disorders.
<b>Employer name and address</b>	Vice Chancellor (Masinde Muliro University of Science & Technology)
<b>Section and department</b>	Dean of Students Office
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From March 2021 to Date
<b>Occupation or position held</b>	Webometric champion DPS MMUST
<b>Main responsibilities</b>	Contribute in improvement of webometric ranking of university through DPS docket
<b>Employer name and address</b>	DVC PRI (Masinde Muliro University of Science & Technology)
<b>Section and department</b>	SOLACE and Webometrics coordinator
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From April 7 <sup>th</sup> to 7 <sup>th</sup> May 2021
<b>Occupation or position held</b>	Acting chairman (COD); department of biological sciences

<b>Main responsibilities</b>	Coordination of departmental processes
<b>Employer name and address</b>	Vice Chancellor; Masinde Muliro University of Science & Technology
<b>Section and department</b>	Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From November 2020 to December 2020
<b>Occupation or position held</b>	Co-chairperson MMUSO constitution review commission
<b>Main responsibilities</b>	Management of the MMUSO constitution review commission
<b>Employer name and address</b>	Vice Chancellor (Masinde Muliro University of Science & Technology)
<b>Section and department</b>	Dean of Students Office
<b>Type of business or sector</b>	Higher Education sector/Students' Welfare
<b>Dates</b>	From November 2019 to May 2020
<b>Occupation or position held</b>	Deputy chairperson conference logistic sub-committee
<b>Main responsibilities</b>	General organization of the 14 <sup>th</sup> International research conference
<b>Employer name and address</b>	Vice Chancellor (Masinde Muliro University of Science & Technology)
<b>Section and department</b>	Directorate of Research and Post-graduate Support
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From November 2019 to May 2020
<b>Occupation or position held</b>	Member conference scientific sub-committee
<b>Main responsibilities</b>	Conference presentations & publications management of the 14 <sup>th</sup> International research conference
<b>Employer name and address</b>	Vice Chancellor (Masinde Muliro University of Science & Technology)
<b>Section and department</b>	Directorate of Research and Post-graduate Support
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From February 2019 to date
<b>Occupation or position held</b>	Departmental graduate studies board chairperson (Biological sciences department)

<b>Main responsibilities</b>	Coordination of proposal presentation, seminars, thesis defences and examination
<b>Employer name and address</b>	CoD Biological Sciences
<b>Section and department</b>	Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From June 10 <sup>th</sup> to 14 <sup>th</sup> 2019
<b>Occupation or position held</b>	Acting chairman (COD); department of biological sciences
<b>Main responsibilities</b>	Coordination of departmental processes
<b>Employer name and address</b>	CoD Biological Sciences
<b>Section and department</b>	Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From February 25 <sup>th</sup> to 27 <sup>th</sup> 2019
<b>Occupation or position held</b>	Acting chairman (COD); department of biological sciences
<b>Main responsibilities</b>	Coordination of departmental processes
<b>Employer name and address</b>	CoD Biological Sciences
<b>Section and department</b>	Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From February 14 <sup>th</sup> - 14 <sup>th</sup> February 2018
<b>Occupation or position held</b>	Departmental quality assurance coordinator
<b>Main responsibilities</b>	Coordination of departmental quality assurance processes
<b>Employer name and address</b>	CoD Biological Sciences
<b>Section and department</b>	Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From February 14 <sup>th</sup> 2018 to date
<b>Occupation or position held</b>	Academic advisor year two group
<b>Main responsibilities</b>	Guiding the second years on academic matters
<b>Employer name and address</b>	CoD Biological Sciences

<b>Section and department</b>	Department of Biological Sciences
<b>Type of business or sector</b>	Higher Education sector
<b>Dates</b>	From June 4 <sup>th</sup> 2018 to date
<b>Occupation or position held</b>	DCCM representative directorate of research and linkages and STIPL
<b>Main responsibilities</b>	Participate in field marketing activities, identify and propose training needs.
<b>Employer name and address</b>	Vice chancellor
<b>Section and department</b>	Vice chancellor office
<b>Type of business or sector</b>	Higher Education sector

### Consultancies/Collaborations

<b>Date</b>	2015 to date
<b>Occupation or position held</b>	Plant pathology and plant interactions dynamics consultant
<b>Main responsibilities</b>	Participation in development of proposal and collaborative research
<b>Organization</b>	ICIPE- Mbita
<b>Section and department</b>	Crop protection and plant sciences
<b>Type of business or sector</b>	Research sector
<b>Date</b>	2012 to date
<b>Occupation or position held</b>	Pasture improvement and pathology consultant
<b>Main responsibilities</b>	Participation in development of proposal and collaborative research
<b>Organization</b>	KALRO-Muguga south
<b>Section and department</b>	Animal health and production department
<b>Type of business or sector</b>	Research sector

### Community service & outreach

<b>Date</b>	2018 to date
<b>Occupation or position held</b>	DCCM representative (Directorate of research-postgraduate support and Income generation unit)

<b>Main responsibilities</b>	Marketing and co-ordination of various university/respective sections programmes
<b>Organization</b>	Masinde Muliro University of Science and Technology
<b>Section and department</b>	DCCM
<b>Type of business or sector</b>	Higher Education sector
<b>Date</b>	2015 to date
<b>Occupation or position held</b>	Chairman Berean financial self-help group (ICOC church organization Kakaemga)
<b>Main responsibilities</b>	General management and formulation of by laws governing the organization
<b>Organization</b>	International Church of Christ Kakamega
<b>Section and department</b>	Welfare section
<b>Type of business or sector</b>	Religious sector
<b>Conferences organized</b>	
<b>Date</b>	20 <sup>th</sup> November 2019 -15 <sup>th</sup> May 2020
<b>Conference</b>	14 <sup>TH</sup> Multi-disciplinary international conference 2020
<b>Theme of conference</b>	Transformational Leadership, Innovation and Technology Transfer for Sustainable Development in Developing Countries
<b>Roles</b>	Logistics and Scientific sub- committee, papers reviewer and general conference logistics
<b>Institution</b>	Masinde Muliro University of Science and Technology
<b>Level of conference</b>	International
<b>Date</b>	19 <sup>th</sup> -21 <sup>st</sup> June 2019
<b>Conference</b>	13 <sup>TH</sup> Multi-disciplinary international conference 2019
<b>Theme of conference</b>	Transformational Leadership, Innovation and Technology Transfer for Sustainable Development in Developing Countries
<b>Roles</b>	Organizing committee, papers reviewer, general logistics and sessions rapporteur
<b>Institution</b>	Masinde Muliro University of Science and Technology
<b>Level of conference</b>	International
<b>Journals involved in review &amp; processing</b>	

<b>Date</b>	1 <sup>ST</sup> June 2019
<b>Journal</b>	Journal of Science Technology, Education and Management (J-STEM)
<b>Publisher</b>	Directorate of Research and Postgraduate Support, MMUST
<b>Volume</b>	Volume 8 No.1
<b>Institution</b>	Masinde Muliro University of Science and Technology
<b>ISSN</b>	1991-2889
<b>Journal Type</b>	Multi-disciplinary

### Examined theses; and the year of examination

- ✓ Evans A. Boge, (Reg. No. SMB/G/01-54625/2017) MSc Microbiology thesis. Biological sciences department, School of Natural Sciences (SONAS), Masinde Muliro university of Science and Technology. **Thesis Title:** Antimicrobial resistance profiles and biofilms in *Escherichia coli* recovered from wastewater treatment plants in Kakamega municipality. April; 2021
- ✓ Omuketi William Emitaro, (Reg. No. PHD/SC/00074/017) PhD Microbiology thesis. Botany department, School of Physical & Biological Sciences (SPBS), Maseno University. **Thesis Title:** Diversity and antagonistic potential of endophytes, phytochemical and antimicrobial activity of selected gro forestry trees against *Xanthomonas campestris* pv *musacearum* and *Cercospora zeaemaydis*. March, 2021
- ✓ Edwin M. Karoney, (Reg. No. SCP/G/09/2015) MSc Crop Protection thesis. Biological sciences department, School of Natural Sciences (SONAS), Masinde Muliro university of Science and Technology. **Thesis Title:** Phytochemical influence on host mediated interactions between root nodulating rhizobium species and the foliar pathogen *Colletotrichum lindemuthianum* in common bean *Phaseolus vulgaris*. October, 2020
- ✓ Anthony Simiyu Mabele, (Reg. No. SCP/G/04/2015) MSc Crop Protection thesis. Biological sciences department, School of Natural Sciences (SONAS), Masinde Muliro university of Science and Technology. **Thesis Title:** Occurrence, distribution and diversity of groundnut rosette assistor virus causing groundnut rosette disease in Western Kenya. October, 2019
- ✓ Andrew Lyani, (Reg. No. SEB/G/07/11) MSc Environmental Biology thesis. Biological sciences department, School of Natural Sciences (SONAS), Masinde Muliro university of Science and Technology. **Thesis Title:** Effects of cropping systems on soil invertebrates diversity, abundance and physicochemical characteristics around Kakamega forest in Kenya. Year, 2019.

	<b>Thesis examination / Board examiner</b>
	<ul style="list-style-type: none"> <li>✓ Milton Wanyama, (Reg. No. SMB/G/10/14) MSc thesis. Masinde Muliro university of Science and Technology. Antibiotic susceptibility patterns of pathogenic bacteria from unprocessed bovine milk produced by farmers in Ndivisi ward, Bungoma County, Kenya. Biological sciences department, SONAS.</li> </ul>
	<b>Postgraduate students supervision and mentoring</b>
	<ul style="list-style-type: none"> <li>✓ Irene Mutokaa, (Reg. No. SCP/G/01-55586/2017) MSc. research. Masinde Muliro University of Science and Technology. Polyploidization of <i>Solanum nigrum</i> and intercropping with selected plant species towards management of <i>Aphis solanella</i>. (Status: On going)</li> <li>✓ Omeda Habil Keith (Reg. No. MECO/46369/2016) MSc. research. Mount Kenya University. Assessment of the utilization levels and conservation strategies of <i>Prunus Africana</i> and <i>Mondia whytei</i> around Kakamega forest, Kenya. (Status: On going).</li> <li>✓ Philistus N. Wambuti, (Reg. No. MSC/SC/00092/2018) MSc. research. Maseno University. Efficacy of selected <i>Beauveria</i> spp and push-pull technology on the control of fall armyworm (<i>Spodoptera frugiperda</i>).</li> <li>✓ Marrcello Nyaoro Aguok, (Reg. No. SCP/G/01-50620/2017) MSc. research. Masinde Muliro University of Science and Technology. Resistance levels of selected onion varieties against onion blight under modified cultural strategies in Kerelwa West Pokot county.</li> </ul>
<b>Credited Pathogen isolates in NCBI's GenBank</b>	<b>Successfully characterized pathogen isolates' molecular sequences in the National Center for Biotechnology Information's GenBank which can be accessed by their accession numbers below in the database;</b>
	<ul style="list-style-type: none"> <li>✓ MUR001 strain</li> <li>✓ MUR002 strain</li> <li>✓ MUR003 strain</li> <li>✓ KIA001 strain</li> <li>✓ KIA002 strain</li> <li>✓ KIA003 strain</li> <li>✓ NYA001 strain</li> <li>✓ NYA002 strain</li> </ul>

- ✓ NYA003 strain
- ✓ NAK001 strain
- ✓ NAK002 strain
- ✓ NAK003 strain
- ✓ KIR001 strain
- ✓ KIR002 strain
- ✓ KIR009 strain
- ✓ NYE001 strain
- ✓ NYE002 strain
- ✓ NYE004 strain

### Analytical tools expertise

- ✓ ChromasLite molecular sequence's Base calling analyzing tool
- ✓ BioEdit consensus sequences and trimming molecular software tool
- ✓ MAFFT Online sequence alignment and analysis tool
- ✓ MEGA 5 Phylogenetic analysis tool
- ✓ SPSS Biostatistical analysis tool
- ✓ SAS Biostatistical analysis tool
- ✓ ClustalX and ClustalW sequence analysis tools
- ✓ Genestat Biostatistical tool

### Innovations /technologies

- ✓ Enviro-DPEH tool; for monitoring environmental health and productivity (2021).
- ✓ Concept of relative logarithmic abundance; in environmental analysis (2021).
- ✓ OMPT-Algorithm for determining levels of preparedness of ecosystems to mitigate climate change (2021).
- ✓ OMATEC - HTVP Calculator; Invented in 2020
- ✓ OMATEC-PL Tool; Invented in 2020
- ✓ OMATEC-EA Tool; Invented in 2020
- ✓ OMATEC-DPCE Tool; Invented in 2020

- ✓ Novel technique of estimating levels of a plant's resistance to diseases called (**Omatec host plant resistance and pathogen virulence estimator algorithm**)
- ✓ Novel technique of estimating the virulence levels of plant diseases quantitatively
- ✓ Novel technique of estimating environmental wellness levels called (**Omatec algorithm for environmental wellness evaluation**)
- ✓ Technique of standardizing tolerance scale for individual plants
- ✓ Technique of estimating water purity using selected integrated parameters
- ✓ Strategies of managing co-infection of napier grass by NSD and NHSD diseases
- ✓ Eleven napier grass accessions highly tolerant to head smut disease
- ✓ Accession 16806 completely immune to head smut disease

### Conferences attended

- ✓ ANSO-MMU-SAJOREC International conference, Maasai Mara University, (4<sup>th</sup>-6<sup>th</sup> September 2019).
- ✓ EAAPP End of Phase 1 Regional Conference and Exhibition (14<sup>th</sup>-18<sup>th</sup> Sept. 2015)
- ✓ All African Conference on Animal Agriculture (27<sup>th</sup>-30<sup>th</sup> October 2014)
- ✓ First International Interdisciplinary Conf. Kisii University (30<sup>th</sup> July-2<sup>nd</sup> Aug. 2014)
- ✓ 4<sup>TH</sup> African Conference on Edible and Medicinal Mushrooms Masinde Muliro University of Science and Technology (May 26<sup>th</sup>-29<sup>th</sup> 2014)
- ✓ 8<sup>th</sup> Egerton University International conference (26<sup>th</sup>-28<sup>th</sup> March 2014)
- ✓ EAAPP Scientific conference (12<sup>th</sup>- 15<sup>th</sup> November 2013)
- ✓ Sustainable horticultural production in the tropics Meru University of Science and Technology (3<sup>rd</sup> – 6<sup>th</sup> December 2013)

### Workshops attended

- ✓ Biosecurity High Level session (7<sup>th</sup>-10<sup>th</sup> May 2018)

- ✓ Molecular plant disease diagnostics (5<sup>th</sup> – 10<sup>th</sup> September 2016)
- ✓ Workshop for curriculum development, review and implementation (MMUST) (24<sup>th</sup> June 2014).
- ✓ University multiplication training workshop on curriculum development for public universities in Kenya (23<sup>rd</sup>-24<sup>th</sup> January 2014).
- ✓ Molecular techniques workshop (22<sup>nd</sup> -26<sup>th</sup> July 2013).
- ✓ Gender sensitization workshop (14<sup>th</sup> March 2008).
- ✓ e-resources training workshop (27<sup>th</sup> – 30<sup>th</sup> May 2013).
- ✓ Molecular plant disease diagnostics (5<sup>th</sup> – 9<sup>th</sup> November 2012).

### Research Grants

- ✓ MMUST Innovation grant (2020/2021)
- ✓ National Research Fund grant (2016/2017)

### Exhibitions

- ✓ 8<sup>th</sup> Kenyan Universities exhibition (March 2010)
- ✓ 9<sup>th</sup> Kenyan Universities exhibition (March 2011)

### Professional affiliations

- ✓ American Phytopathological Society (APS) – **MEMBER ID: 264104**
- ✓ International Society for Plant Pathology – **APS associate organization**
- ✓ Horticulture Association of Kenya (HAK)

### Awards

- ✓ HELB Scholar (2016/2017)
- ✓ DAAD scholar (2013/2014)
- ✓ MMUST Scholar (2011/2012)
- ✓ Best undergraduate biotechnology student (2011)
- ✓ Best performing male student faculty of science (2011)

### Publications (Books & Book chapters)

- ✓ Dennis.O.Omayio. 2018. **Morphological and molecular characterization, pathogenicity and co-infection of *Ustilago kamerunensis* with “*Candidatus Phytoplasma oryzae*” strain Mbita 1 on napier grass growth tolerance under varying nutrients and moisture levels.** PhD Thesis, Maseno University -publication, Kenya.
- ✓ D.O. Omayio., J.V. Muoma., F.N. Muyekho., S.I. Ajanga., I.W. Kariuki and M.Mulaa .2015. **Epiphytology of Napier Head Smut Disease and Progress in the Search for Tolerant Cultivars: In Napier grass feed resource; production, constraints and implications for smallholder farmers in Eastern and Central Africa.** Kabirizi J., Muyekho F., Mulaa M., Musangi R., Pallangyo B., et al. 2015. ISBN: 978-9970-9269-1-6. EAAPP Publication, 62-74pp.
- ✓ Dennis.O.Omayio. 2013.**Resistance of napier grass *Pennisetum purpureum* accessions to head smut pathogen *Ustilago kamerunensis*.** Masters Thesis, Masinde Muliro University of Science and Technology-publication, Kenya.

### Publications (Scientific papers)

- ✓ Robert K. Leitich, Jackson C. Korir, John O. Muoma and Dennis O. Omayio. **"Viral synergism and its role in management of maize lethal necrosis disease."** *African Journal of Plant Science* 15, no. 6 (2021): 151-157. <https://doi.org/10.5897/AJPS2021.2132>
- ✓ Matindu Christine., Sifuna Anthony Wawire., Francis Muyekho and Dennis Omayio. 2020. **Soil bacterial community structure of maize and beans smallholder farms in the river Isiukhu watershed, Western Kenya.** *East African Scholars Journal of Agriculture and Life Sciences*, 3(6):174-180.
- ✓ Omayio Dennis. 2020. **An algorithm for estimating resistance magnitude of plants against disease establishment and pathogen virulence levels.** *Plant pathology Journal*, 19(1):16-21. <http://dx.doi.org/10.3923/ppj.2020.16.21>
- ✓ Omayio Dennis and Mzungu Emmanuel.2019. **Modification of Shannon-Wiener diversity index towards quantitative estimation of environmental wellness and biodiversity levels under a non-comparative scenario.**

Journal of environment and earth science, 9(9):46-57.  
<http://dx.doi.org/10.7176/JEES/9-9-06>

- ✓ Okoth Patrick., Muoma John., Omayio Dennis., Barasa Mustafa and Angienda Paul. 2018. **Molecular footprint of Kenya's gene bank repositories based on the Cp-Gene signatures.** American Journal of Molecular Biology, 8:215-244. <http://dx.doi.org/10.4236/ajmb.2018.84019>
- ✓ Elsheba A. Imbaya., Millicent F. Ndong'a., Francis N. Muyekho and Dennis .O. Omayio. 2018. **Control of *Aphis fabae* using leaf extracts of *Artemisia annua* and *Thevetia peruviana* on *Solanum scabrum* during the short and long rain seasons in Kenya.** Researchjournal's Journal of Agriculture, 5:1-11.
- ✓ Kennedy O. Ogonda., Millicent F. O. Ndong'a., Francis N. Muyekho and Dennis .O. Omayio. 2018. **Effect of *Artemisia annua* leaf extract on the incidence and severity of *Aphis fabae* in intercropped and pure stand common bean.** International Journal of Agronomy and Agricultural Research, 13:33-42.
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- ✓ D.O. Omayio., S.I. Ajanga., J.V. Muoma., F.N. Muyekho and I. Kariuki .2014. **Internal transcribed spacer primers detect better Ustilago kamerunensis; a napier grass head smut pathogen constraining the dairy sector in Eastern Africa.** Journal of Agri-food and Applied Sciences, 2: 265-274.
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**First report and biological characterization of cowpea mild mottle virus (CPMMV) infecting groundnuts in Western Kenya.** Journal of Agri-food and Applied Sciences, 3: 1-5.

- ✓ D.O. Omayio., S.I. Ajanga., J.V. Muoma., D.M.W. Ochieno., F.N. Muyekho., B. Mukoye and R.K. Leitch .2014. **Predicting endophytes contribution in vivo in napier grass accessions' tolerance against Ustilago kamerunensis using in vitro strategies.** Journal of Agri-food and Applied Sciences, 2: 296-303.
- ✓ D.O. Omayio., S.I. Ajanga., J.V. Muoma., F.N. Muyekho and I. Kariuki .2014. **Towards the management of napier head smut; using in vitro approaches to decipher possible role of antibiosis resistance in selected napier accessions.** Journal of Agri-food and Applied Sciences, 2: 323-329.

## Conference Papers

- ✓ Omayio Dennis and Mzungu Emmanuel.2019. **Modification of Shannon-Wiener diversity index towards quantitative estimation of environmental wellness and biodiversity levels under a non-comparative scenario.** ANSO-MMU-SAJOREC International conference, Maasai Mara University, 4<sup>th</sup>-6<sup>th</sup> September 2019.
- ✓ I.W. Kariuki., S.W. Mwendia., F.N. Muyekho., S.I. Ajanga and D.O. Omayio. 2015. **Biomass production and forage quality of head-smut disease resistant napier grass accessions in highland and lowland environments of Kenya.** Eastern Africa Agricultural Productivity Programme (EAPP) End of Phase 1 Regional Conference and Exhibition 14<sup>th</sup>-18<sup>th</sup> September 2015, 37 pp.
- ✓ D.O. Omayio., S.I. Ajanga., J.V. Muoma., F.N. Muyekho., I. Kariuki and S. Mwendia.2014. **Cultivating napier grass varieties of mixed resistance levels by smallholder livestock farmers; key to sustained head smut pathogen management?** Sub-Theme 2: Which Way for Smallholder Production Systems; All African Conference on Animal Agriculture KICC Nairobi 27<sup>th</sup> -30<sup>th</sup> October 2014.
- ✓ D.O. Omayio., E.B. Luvonga., D.M.W. Ochieno., J.V. Muoma. 2014. **Potential of water hyacinth compost formulations as substrates for the cultivation of white oyster mushroom *Pleurotus ostreatus*.** 4<sup>th</sup> African Conference on Edible and Medicinal Mushrooms MMUST 26<sup>th</sup> -29<sup>th</sup> May 2014.
- ✓ D.O. Omayio., J.V. Muoma., F.N. Muyekho and S.I. Ajanga. 2014. **A probable case of quantitatively controlled antibiosis strategy of pathogen**

**resistance against napier grass' head smut.** 8<sup>th</sup> Egerton University International conference 26<sup>th</sup>-28 March 2014.

- ✓ D.O. Omayio., J.V. Muoma., S.I. Ajanga., F.N. Muyekho and I.W. Kariuki. 2013. **A novel technique in estimating the magnitude of established quantitative resistance in selected *Pennisetum purpureum* (Schum.) accessions against head smut disease.** Eastern Africa Agricultural Productivity Project mini-conference 12<sup>th</sup>-15<sup>th</sup> November 2013.
- ✓ D.O. Omayio., J.V. Muoma., S.I. Ajanga., F.N. Muyekho., E.I.N. Wamalwa., S. Mwendia and I.W. Kariuki. 2013. **Ustilago kamerunensis imposed resistance and its implications in mitigating napier head smut disease challenge.** Eastern Africa Agricultural Productivity Project mini-conference 12<sup>th</sup>-15<sup>th</sup> November 2013.
- ✓ E.I.N. Wamalwa., A.O.C. Midega., S. Ajanga., N.E. Omukunda., D.M.W. Ochieno., D.O. Omayio., F.N. Muyekho., M. Mulaa and R.K. Zeyaur. 2013. **Napier grass accession 16789 tolerant to napier stunt disease (Phytoplasma 16SrXI) constraining dairy industry in Western Kenya/Eastern Africa.** Eastern Africa Agricultural Productivity Project mini-conference 12<sup>th</sup>-15<sup>th</sup> November 2013.
- ✓ D.O. Omayio., J.V. Muoma., D.M.W. Ochieno., F.N. Muyekho., B. Mukoye and S.I. Ajanga. 2013. **Endophytes contribution in vivo to the resistance of Ustilago kamerunensis establishment in napier grass *Pennisetum purpureum* accessions.** 13<sup>th</sup> Workshop on sustainable horticultural production in the tropics 3<sup>rd</sup>-6<sup>th</sup> December 2013.

### Student's supervised

- ✓ Rachel Muthoni. Reg. No. BTE/0022/15 (2019). Effects of physical modification and varying nutrient formulations in shortening the juvenile phase of *Carica papaya*. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Sharon Varine. Reg. No. SBC/0117/15 (2019). Efficacy of selected chemical formulations in management of *Cuscuta pentagona* parasitic plant. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Isaac Korir. Reg. No. SEC/0069/15 (2019). Efficiency of municipal wastewater stabilization ponds; a case study of mmust pond. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.

- ✓ Khadija Juma. Reg. No. SEC/0021/15 (2019). Potential of vegetative propagation of selected medicinal plants in Lurambi sub-county, Kakamega. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Benard Njuguna. Reg. No. SEC/0014/15 (2019). Evaluation of the efficiency of modified low cost briquette technology products from selected organic wastes. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Polycarp Ojwando. Reg. No. BIO/0076/15 (2019). Banana suckers multiplication using selected modified potting formulations. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Moses Gikundi. Reg. No. BIO/0017/15 (2019). Evaluation of the efficacy of varying feeds and temperature regimen on the growth and development of fall armyworm (*Spodoptera frugiperda*). Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Gloria Lyavoga. Reg. No. SEC/0084/15 (2019). Efficacy of selected organic manure formulations in improving soil fertility. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Wisdom Wanjohi. Reg. No. SBC/0053/15 (2019). Fall armyworm control in selected maize varieties based on the use of natural repellants. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Gladys Ndanu. Reg. No. BTE/0017/15 (2019). Effects of varying levels of *Aloe vera* sap in promoting growth vigor of *Phaseolus vulgaris*. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Bob Anam. Reg. No. BTE/0042/15 (2019). Effects of selected root development promoter agents in initiating growth in *Psidium guajava* marcots. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Eunice W. Wainaina. Reg. No. BTE/0014/14 (2019). Potential of *Spinacia oleracea* polyploidization using varying concentrations of colchicine.

Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.

- ✓ Geoffrey Cheruiyot. Reg. No. SBC/0061/14 (2018). Evaluation of the effects of selected plant concentrates on the growth of field dodder (*Cuscuta campestris*). Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Violet Gitari. Reg. No. SBC/0038/12 (2018). Assessing the allelopathic potential of selected plant species from MMUST botanical garden towards biodiversity management. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Faustine Mwaki. Reg. No. SBC/0014/13 (2017). Shannon Wiener diversity index modification; towards a more informative analysis of its output in an ecosystem evaluation. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Lilian Njeri. Reg. No. SEC/0010/13 (2017). Impact of mixed municipal wastes' in carbon sequestration potential of *Pennisetum purpureum*; Clone 13 variety. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.
- ✓ Allan Wanjala. Reg. No. SEC/0042/13 (2017). Integrated physiochemical parameters in analysis of water quality of Shandivisi river. Undergraduate project, Department of Biological Sciences, Masinde Muliro University of Science and Technology.

### Personal competences

<b>Mother tongue(s)</b>	Kisii
<b>Other language(s)</b>	English, Kiswahili
<b>Social skills &amp; competences</b>	Good communicational skills, Leadership skills, Analytical skills and team work
<b>Organisational skills</b>	Leadership skills, management skills and Good experience in meeting deadlines.
<b>Technical skills</b>	Good command of molecular tools such as PCR, sequencer, vortex and laminar flow system, research proposal and technical reports writing/presentation. Excellent skills

	in microbial product formulation, selection of organisms and breeding. Good command of laboratory mathematics and reagent formulation.
<b>Computer skills</b>	Good command of all Microsoft computer packages, data management, analysis and internet/Online research skills.
<b>Artistic skills</b>	Drawing, singing, diverse swimming styles, Karate and dribbling skills.
<b>Others</b>	Dissemination skills and very innovative.
<b>Driving licence</b>	I hold a driving licence (B- Light)

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Dr. Dennis Omayio

Date:

13<sup>TH</sup> JULY 2021