

CURRICULUM VITAE



Dr. George T. Opande. PhD

PERSONAL INFORMATION

NAME: GEORGE TIMOTHY OGUENO OPANDE

SEX : MALE

NATIONALITY : KENYAN

MARITAL STATUS : MARRIED

POSTAL ADDRESS : KAIMOSI FRI. UNI. COLLEGE,
SCHOOL OF SCIENCE.
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Google scholar: https://scholar.google.com/scholar?start=10&q=G+OPANDE&hl=en&as_sdt=0,5

ACADEMIC QUALIFICATIONS

- (i) 1975 Kenya Certificate of Primary Education. (C.P.E)
- (ii) 1979 East African Certificate of Education. (E.A.C.E)
- (iii) 1981 Kenya Advanced Certificate of Education. (K.A.C.E.)
- (iv) 1985 B.sc (gen). Second class hon. Jabalpur University, Jabalpur, India.
- (v) 1988 M.Sc. (Botany) Bhopal University, Bhopal, India.
- (vi) 2002 PhD (Botany- Plant Pathology/Fresh water ecology) Maseno University, Maseno, Kenya.

WORKING EXPERIENCE

- (i) 1992-1994; *Tutorial Fellow* Department of Botany, Maseno University.
Duties and Responsibilities; Lecturer and research scientist.
- (ii) 1994-2019; *Lecturer* Department of Botany, Maseno University.
Duties and Responsibilities; Lecturer and research scientist
- (iii) 2019-Todate; *Senior Lecturer* School of science, Dept of biological and agricultural Sciences, Kaimosi Friends University College, Kaimosi.

Duties and Responsibilities; Senior Lecturer and Senior research scientist.

COURSES TAUGHT AT UNIVERSITY LEVEL AND SPECIALIZATIONS

Current areas of teaching in both post-graduate and under-graduate courses include;

- Environmental science,
- Gymnosperm and Angiosperm taxonomy.
- Plant ecology
- Plant taxonomy.
- Plant pathology,
- Plant Physiology and biochemistry,
- Mycology,
- Virology,
- Phycology,
- Bacteriology,
- Nematology,
- Entomology,
- Biological control of plant diseases,
- Bryology,
- Pteridology,
- Control of aquatic and invasive plants.
- Weed science
- Microbiology
- Limnology.
- Herbarium principles and practice
- Agricultural research methods
- Research projects management

RELEVANT RESEARCH UNDERTAKEN

1. Acquisition of resistant *Colocasia esculenta* germplasm that are suitable for Republic of Maldives growing conditions (On going)
2. Field research and assessments to identify the suitability of *Colocasia esculenta* germplasm of select varieties. (On going)
3. Finalization of a cultivation plan for selected germplasm for cultivation in the Republic of Maldives (On going)
4. Provision of trainings and information to selected island communities and extension personnel from the Ministry of Fisheries and Agriculture, Republic of Maldives (On going)

5. Production and optimization of bioethanol gel fuel, briquette fuel and biofertilizer from selected agricultural wastes and water hyacinth (*Eichhornia crassipes*) around Bahir Dar, Northern Ethiopia By Desta Mulu, Prof. Fantaw Yimer (Hawassa University), Tsegaye Bekele (Hawassa University) and Dr. George T. Opande (Kaimosi Friends University College)
6. “Mitigation of Climate Change through Sustainable Integration of Maize Based Agro-Forestry Systems for Food Security and Poverty Reduction in Western Kenya” (2018-2021) research ongoing by Dr. George T. Opande, Prof David Mutisya Musyimi, Dr Phoebe A. Shikuku, and Prof. George Odhiambo).
7. “Determination of seasonal variations of pest and diseases incidence in maize / banana based agro forestry system in Vihiga and Kisii counties Kenya”. (2018-2021) research ongoing by Dr. George T. Opande, Prof David Mutisya Musyimi, Dr Phoebe A. Sikuku, and Prof. George Odhiambo).
8. “Studies on the control of *Eichhornia crassipes* and its associated limnology in Lake Victoria”. (1995-1996) (Supported by UNESCO). Unpublished report (1996) by GT Opande and K. William.
9. “A study of disease causative Organism on cacti *Opuntia* sp. In; Nyando plains of Nyanza province (Kenya) ”; Unpublished report by GO Opande and M. Kariaga (1999)
10. “L. Victoria, the water hyacinth (*E. crassipes*, its distribution, socioeconomic effects, control measures and resurgence in the Winam gulf (L. Victoria.) 2002-2003. Report published
11. “Distribution and disease incidences of cacti *Opuntia* disease in the Kolwa division, Kisumu, Kenya”. Unpublished report by GO Opande and M. Kariaga. (1999)
12. “Distribution of the water hyacinth (*Eichhornia crassipes* [Mart.] Solms), its carpet characteristics, some of its diseases and pests in the Winam gulf (L. Victoria). 1997-2002. (Supported by the Government of Federal Republic of Germany, through DAAD). Report published
13. “Medicinal plants from Laminaceae in Uriri division Migori County (Kenya)”. Report published
14. “Climatic and regional effect on disease and pathogenicity of taro leaf blight pathogen *Phytophthora colocassiae* L. (Scot) in western and central Kenya”. Unpublished report
15. “Studies on control of lethal maize necrosis, occurrence, incidences and severity through the use of immune boosters in Muhoroni, (Kenya)”. Unpublished report.
16. “Rhizospheric microorganisms isolates of sugar cane *Saccharum officinarum* and their antagonistic activity against *Ustilago scitaminea* in Kibos (Kenya)”. Published report

17. "Effect of mycoherbicide efficacy in the control of water hyacinth (*Eichhornia crassipes* [Mart] Solms." Report published
18. "Isolation and characterization of actinomycetes from Maseno soils and their antagonistic effects on *Pyricularia grisea* infecting finger millet (*Eueusine coracana*)". Report published
19. "Effect of water deficit on the growth and development of *Amaranthus palmeri* (C₃) and *Amaranthus hybridus* (C₄) plants". Report unpublished

INTERNATIONAL SCIENTIFIC INSTITUTIONS AND LABORATORIES VISITED

1. Prof William T. Haller,

University of Florida,

Institute of Food and Agricultural sciences (I.F.A.S),

Center for Aquatic and Invasive Plants,

Gainesville, Florida.

- Maintenance control of water hyacinth
- Calibration of spray equipments;
- Mechanical harvesting and chopping of water hyacinth.
- Pesticide safety,
- Application of pesticides,
- Applicator training,
- Herbicide labels and use,
- Invasive plant identification

2. Prof. R. Charudattan,

University of Florida,

Institute of Food and Agricultural sciences (I.F.A.S.),

Department of plant pathology,

Gainesville, Florida.

- Isolation, purification and storage of bacterial pathogens.
- Testing techniques and developments of integrated control of the water hyacinth using two fungal pathogens and water hyacinth weevils (*Neochetina* spp.)
- Methods and techniques developed by Prof. S. Chandramohan in the combinations of fungi to improve efficacy of biocontrol systems.
- Aquatic plants information retrieval systems APIRS
- Large scale field trials with bio-herbicides

3. Universitat Konstanz,

Faculty of Biology,

Limnology institute (Walter-Schilenz institute)

Konstanz, Germany.

- Limnology of major water bodies in East and Central Europe.

4. **Prof. K. Mendgen,**
Universitat Konstanz,
Faculty of Biology,
Plant Pathology laboratory.
Konstanz, Germany.
- Plant pathogenic fungi
 - Plant pathogenic bacteria

POST-GRADUATE STUDENTS SUPERVISED.

A COMPLETED POST GRADUATE PROJECTS (GRADUATED)

1. **Mutebi Chrispus Makhete** (M.sc); “Effect of mycoherbicide efficacy in the control of water hyacinth (*Eichhornia crassipes* [Mart.] Solms” (Project completed, student graduated on 30th April 2021)
2. **William Omuketi Emitaro** (PhD): “Diversity, Phylogeny and antagonistic potential of endophytic microorganisms of selected agroforestry trees in a maize banana intercrop against *Cercospora zea-maydis* *Phaeosphaeria maydis* and *Xanthomonas campestris* pv. *Musacearum* in Maseno, Kenya” (Project completed student graduated on 30th April 2021).
3. **Philip O. Onyango.** (Ph.D); “Melisopalynological, physico-chemical and organoleptic characterization of aboriginal Ogiek honey in Mau forest complex blocks: A perspective in incentivisation of biodiversity conservation”. (Project completed student graduated in December 2019)
4. **Otieno Caren Adhiambo** (Ph.D); “Determination of climatic and regional effect on disease and pathogenicity of taro leaf blight pathogen *Phytophthora colocassiae* L. (Scot) in western and central Kenya”. (Project completed graduated in December 2019)
5. **Mary Adhiambo Shiranda** (M.sc); “ Morphological identification of *Phytophthora cinnamomi* and screening of avocado rootstocks for tolerance to *Phytophthora cinnamoni* and water logging on Lake Victoria ” (Project completed student graduated in Maseno University December 2018)
6. **Sofi Arum** (Msc); “Antimicrobial effects of *Carica papaya* seed, leaf and bark extracts on *Escherichia coli*, *Staphylococcus aurens* and *Candida albicans*”. (Project completed student graduated in December 2017)

7. **Christine Wesonga**; (M.sc); “Survey of maize ear rot causing pathogens and response of hybrids to *Stenocarpella* spp. in Nyanza, Kenya” (Project completed student graduated December in 2016).
8. **Antony Elvis Juma** (M.sc): “Rhizospheric microorganisms isolates of sugar cane *Saccharum officinarum* and their antagonistic activity against *Ustilago scitaminea* in Kibos (Kenya)”. (Project completed student graduated in December 2016)
9. **Were John Jose Okumu** (M.sc); “Isolation and characterization of actinomycetes from Maseno soils and their antagonistic effects on *Pyricularia grisea* infecting finger millet (*Eueusine coracana*)” (Project completed student graduated in December 2016).
10. **Okach Daniel Osieko** (M.sc). “Phytochemical investigations and mineral analysis of some wild plants their role in traditional medicine Uriri Division (Kenya)”. (Completed student graduated in December 2013).

B. CONTINUING POST GRADUATE PROJECTS

1. **Desta Mulu** (PhD) “Production and optimization of bioethanol gel fuel, briquette fuel and biofertilizer from selected agricultural wastes and water hyacinth (*Eichhornia crassipes*) around Bahir Dar, Northern Ethiopia” (On going research registered at Hawassa University, Ethiopia to be completed in 2022).
2. **Edmond Odhiambo** (Msc) “Pathogen diversity and seasonal variations of maize (*Zea mays*) and banana diseases in a maize, banana (*Musa* spp), *Calliandra calothyrsus*, *Sesbania sesban* and *Leucaena diversifolia* intercrop in Maseno, Kenya” (On going to be completed in 2021).
3. **Josiah Mogaka** (Msc) “Pathogen diversity and seasonal variations in diseases of maize (*Zea mays*) and agroforestry trees (*Calliandra calothyrsus*, *Sesbania sesban* and *Leucaena diversifolia*) in an intercrop in Kisii, Kenya” (On going to be completed in 2021).
4. **Rachael Aduma** (Msc) “Ethno botanical survey of medicinal plants used to manage HIV/AIDS opportunistic infection in Nyando sub-county, Kenya”. (On going project to be completed in 2022)
5. **Mokoro Benard Karan** “Ethnobotanical survey, mineral analysis and conservation status of some edible wild fruits in Kisii County, Kenya” (On going project to be completed in 2021)
6. **Paul Adoda**; (Msc); “Control of lethal maize necrosis, occurrence, incidences and severity through the use of immune boosters in Muhoroni, (Kenya)”. (On going project be completed 2022).

7. **Ogotu Simon Osule** (Msc): “Isolation Identification and characterization of soil micro-organisms associated with sediments from carwashes, garages and effluents in Kisumu Town (Kenya)” (On going project to be completed 2021).
8. **Masara Edna** (M.sc); “Effect of water deficit on the growth and development of *Amaranthus palmeri* (C₃) and *Amaranthus hybridus* (C₄) plants” (On going to be completed 2021)

INTERNATIONAL POST- GRADUATE RESEARCHERS HOSTED.

1. **Desta Mulu** (2020-2022) “Production and optimization of bioethanol gel fuel, briquette fuel and biofertilizer from selected agricultural wastes and water hyacinth (*Eichhornia crassipes*) around Bahir Dar, Northern Ethiopia” (Sandwich PhD research hosted at Kaimosi Friends University College and registered at Hawassa University (Ethiopia) sponsored by OWSD PhD fellowship 2020 .
2. **Desta Mulu** (2019-2020) “Production and optimization of bioethanol gel fuel, briquette fuel and biofertilizer from selected agricultural wastes and water hyacinth (*Eichhornia crassipes*) around Bahir Dar, Northern Ethiopia” Research visit conducted at Kaimosi Friends University College sponsored by ICIPE BIO-INNOVATE Africa.

POST-GRADUATE THESIS EXAMINED

1. **Simon Meso Obila** (Msc 2020) “ Characterization of *Phaeoisariopsis griseola*, phytochemical screening and fungicidal activity of selected plants extracts against *Phaeoisariopsis griseola* of common bean Var. GLP1127 Mwezi moja” (Maseno University)
2. **Malick Annina Ndzovu** (MSc 2019) “Phytochemical composition, larvicidal activity of *Cocos nucifera* extracts on *Busseola fasca* Fuller and its effects on growth and yield of maize” (Maseno University)
3. **Korir Vicky Jepchirchir** (Msc 2019) “Phytochemical analysis of pyrethrum extracts and anti-aphid effects on growth, yields, chlorophyll and phytonutrient contents of African nightshades” (Maseno University)
4. **John Keya Wekulo** (MSc 2019) “Seasonal variations of microbiological and physicochemical characters of river Kuywa water in Bungoma County, Kenya” (Maseno University)

5. **Collins Wafula Masinde** (MSc 2018) “Taxonomic revision of *Lippia japonica* (BURM F.) Springs. Complex (Verbenaceae) East Africa Using morphological and molecular characters and evolution of its pesticidal efficacy on aphids” (Maseno University)
6. **Dennis Ondieki Omayio** (PhD 2018) “Molecular characterization of *Ustilago kamerunensis* P.&H. SYD of Napier grass and evaluation of its interactions with *Candidus phytoplasma oryzae* strain Mbita-1 under nutrients and moisture stress” (Maseno University)
7. **Dennis Simiyu Wamalwa** (Msc 2017) “Effect of NPK blended fertilizer application on soil physico-chemical properties, growth, physiology and yield of finger millet (*Eleusine coracana* L Gaertn” (Maseno University)
8. **Omuketi William Emitaro** (Msc 2017) “Characterization of *Xanthomonas campestris* pv. *Vesicatoria* in African night shade (*Solanum scubrum* Mill.) and its control using plant extracts of *Bidens pilosa* L. and *Euphorbia hirta* L.” (Maseno University)
9. **Buyela Daniel Khasabuli** (Msc 2017) “Profiling and pathogenicity of *Rolstonia solanacearum* of tomato and its control using *Senna didymobotrya* and *Moringa oleifera* plant extracts.” (Maseno University)
10. **Ombima Joseph** (Msc. 2016); “Assesment of water deficit effects on Agromorphology and physiology of Bambara groundnuts (*Vigna subterranean* (L.) *Verdc*) I. land races grown in Kenya”. (Maseno University)
11. **Oula Dora Auma** (Msc 2015); “The effects of local isolates of *Fusarium oxysporium* f. sp *strigae* as a antimicrobial agent for striga (*Striga hermonthica* (Del) Benth) weed control on maize in Siaya county, Kenya” (Maseno University)
12. **Joseph Ondier Otieno** (Msc 2014); “Effects of management and rainfall manipulation on soil, respiration in a moist Kenyan savanana, Ruma Lambwe Valley”. (Maseno University)
13. **Aswani Aytso Susan** (Msc 2014); “Isolation and characterization of antibiotic producing microorganisms from the gut of macrotermes species in Maseno University, Maseno Kenya” (Maseno University)
14. **Omondi Philip Onyango**(Msc 2013; “ Palynological characterization of some *Indigofera* Linn (*Fabaceae-papilionoideae*) in Western Kenya” (Maseno University)
15. **Seline Omondi** (Msc 2013); “Annotated checklist of the vascular plants conservation, phytochemicalanalysis, educational and economic values of the University botanical garden, Maseno Kenya” (Maseno University)

16. **Carren Otieno Odhiambo** (Msc 2012); “Nutritional effects of fresh and composted agricultural wastes on native wood ear mushroom (*Auricularia auricular L.*)” (Maseno University)
17. **Benson Odhiambo Onyango** (Msc 2010); “Evaluation of phonetic characters and growth performance of native wood ear mushrooms (*Auricularia* spp.) on partially composted agricultural wastes in western Kenya” (Maseno University)
18. **Ruth Kerubo Kebati** (Msc thesis in Plant pathology), “Effect of canopy management and shading on severity of coffee berry disease in Kiambu County, Kenya”. (Degree awarded in 2015 by Kisii University, Kisii Kenya).
19. **Nyang’au Evans Kebaso** (Msc thesis in Plant pathology) “Identification of Bean rust (*Uromyces appendiculatus*) races and evaluation of selected bean cultivars for tolerance to bean rust in Nyamira and Narok South, Kenya”. (Degree awarded in 2015 by Kisii University, Kisii Kenya).
20. **Stella Kemunto Atuti** (Msc thesis in Plant pathology); “Effect of staggered dates and determination of tolerant maize varieties, in management of maize lethal necrosis disease in Kisii County, Kenya”. (Degree awarded in 2016 by Kisii University, Kisii Kenya in 2016).
21. **Jackson Ombuna Gitange** (Msc thesis in Plant Pathology) ; “ Effects of hot water seed treatment, mulching and pruning of black rot disease in cabbage” (Degree awarded in 2019 by Kisii University, Kisii Kenya)

MEMBERSHIP OF ORGANIZATIONS AND ASSOCIATIONS,

- Member *American Phytopathological Society (APS)*.
- Member *International society of Horticultural Sciences (ISHS)*.
- Member *Horticultural Association of Kenya (HAK)*.

WORKSHOPS AND CONFERENCES ATTENDED.

1. *10th KEMRI Annual scientific & health conference (KASH)* held at the Safari Park Hotel Nairobi, Kenya 11th -13th February 2020
2. *1st Health, Environment & Climate change international conference* at the Safari Park Hotel 2nd – 3rd December 2019
3. “*NRF research project partners conference for analysis of status of project and way forward*” at the Heritage resort, Naivasha Kenya 15th - 17th August 2019

4. “*To develop a pre-proposal on ecosystem services, conservation and land use changes in Mount Elgon national park*” CREATE-PPW1/3-2016 workshop at Kibos rice mills, LBDA facility, Kisumu 16th -17th March 2016.
5. “*Climate change, ecological interactions, land use management and social impacts*” University botanical garden, Maseno University (February 19 2014)
6. “*1st international symposium on ornamentals in Africa*”, theme; Ornamentals for people, planet and profit, Morendat, Naivasha Kenya.(September 9-14, 2013)
7. *Sub-regional symposium on conservation of the bio-diversity of Lake Victoria and Other East African Lakes; Application of Biotechnology and Aqua culture* (17-22 January 1993).
8. *UNESCO/DAAD-ALUMNI conference “water in Africa”* theme; Sustainable water management in African countries. In; *Maseno University, Kisumu Kenya. 1st – 3rd October 2012.*
9. *Lakeshore2003 conference*; theme; “Ecology. Quality assessment sustainable development”, venue; Konstanz University Limnology institute, Konstanz, Germany 17-21 June 2003
10. *Science teachers’ workshop*; Theme “The analysis of teaching and evaluation of science subjects (with special attention to topics and KCSE questions which pose difficulties to candidates) in Nyanza province (Kenya)”; Tom Mboya labor College, 15 – 17 September 2003.
11. *8th Living Lakes Conference Climate Change and governance* “Managing impacts on lakes”, University of East Anglia, Norwich England, UK 7 -12 September 2003
12. Lake Victoria Environment Management Program (LVEMP); “*1st National Scientific Conference*” Imperial hotel, Kisumu (Kenya); 15 -19 October 2001

PUBLICATIONS

(a) PhD thesis;

Opande George Timothy; (2002), “Distribution of the water hyacinth *Eichhornia crassipes* [Mart] Solms, its carpet characteristics, some of its diseases and pests in the Winam gulf (L. Victoria).” (*A thesis submitted for award of degree of PhD to Maseno University, Maseno, Kenya.*)

(b) Selected publications in international peer reviewed scientific journals;

1. **Opande GT.**, Onyango JC. and Wagai SO., (2004); “The water hyacinth (*Eichhornia crassipes* [Mart.] Solms.), its socio-economic effects, control measures and resurgence in the Winam gulf”; In *Limnologica* 34 pp 105-109 (2004). [https://doi.org/10.1016/S0075-9511\(04\)80028-8](https://doi.org/10.1016/S0075-9511(04)80028-8)
2. **Opande GT.**, Were OJ. and Arama P. (2013); “Use of soil streptomycetes from Maseno (Kenya) to inhibit growth of *Pyricularia grisea* invitro cultures”, In; *Journal of Agriculture and Veterinary science*; 6 (1) pp 1-3 (2013). e-ISSN: 2319-2380, p-ISSN: 2319-2372
3. Okach DO., **Opande GT.** and Nyunja AR., (2013), “Phytochemical screening of medicinal *Lamiaceae* and their role in traditional medicine in Uriri District (Kenya)”. In; *International journal of herbal medicine* 1 (6) pp 135-143 (2013) ISSN 2321-2187
4. **Opande GT.**, Mutebi C. and Arama PF., (2013), “Inundative *biocontrol* of water hyacinth (*Eichhornia crassipes* (Mart.) Solm. Laubach) using zonate leaf spot (*Acremonium zonatum* Sawada Gams) fungal agent”. In; *Journal of Agriculture and Veterinary sciences*; 6 (3) pp 69-71 (2013) e-ISSN: 2319-2380 p-ISSN: 2319-2372 [DOI 10.9790/2380-0636971](https://doi.org/10.9790/2380-0636971)
5. Mutebi CM, Arama PF., **Opande GT.** and Buyela D. (2014); “Reviewing the sustainable management of water hyacinth in Lake Victoria, Kenya” *Maseno University Journal*; 1 pp 238-244(2015)
6. Nyang’anga HT, Okelo WO, Mugivane FI, Mande JD and **Opande GT.** (2015); “ Extension officers requirements in an artificial intelligent system for diagnosis of maize disease, Kenya” In; *Journal of Agriculture and Veterinary sciences*; 8 (10) Ver. II (Oct 2015) pp 13-19 e-ISSN: 2319-2380 p-ISSN: 2319-2372
7. Nyang’anga HT, Okelo WO, Mugivane FL., Mande JD. and **Opande GT** (2015); “Farmers requirements in an artificial intelligent system for diagnosis of maize diseases, Kenya” In; *Journal of Agriculture and Veterinary sciences*; 8 (10) Ver. II (Oct 2015) pp 20-31 e-ISSN: 2319-2380 p-ISSN: 2319-2372
8. **Opande GT**, Musyimi DM, Cherono KL, Jiveri BK. and Buyela DK. (2017): “Antimicrobial activities of crude leaf extract of *Solanum nigrum* on *Fusarium oxysporum* and *Pseudomonas syringae* cultures in Maseno (Kenya). In; *Journal of Asian scientific research* 7(7) pp 271-278 ISSN: 2223-1331(p) ISSN: 2226-5724

9. **Opande GT**, Musyimi DM and Kaberia MJ. (2017): “Antimicrobial effects of leaf and root extracts of *Crotalaria brevidens* on *Candida albicans*, *Staphylococcus aureus* and *Escherichia coli*” In; *International Journal of pharmaceutical science Invention* 6 (6) (June 2017) pp 33-40 e- ISSN 2319-6718 p- ISSN 2319-670X
10. Musyimi DM., **Opande GT.**, Chesire J. and Buyela DK; (2017): “Phytochemical and antimicrobial activities of plant extract from *Lantana camara* Linn on selected soil microorganisms” In: *IJRDO Journal of biological sciences* 3 (6) pp 18- 35 ISSN: 2455-7676
11. **Opande GT.**, Wagai SO., Onyango JC. and Musyimi DM, (2017) “Carpet characteristics of *Eichhornia crassipes* [Mart.] Solms (Water hyacinth) in the Winam gulf (Lake Victoria, Kenya)”.In; *Journal of Asian scientific research* 7(7) pp 279-287 ISSN: 2223-1331(p) ISSN: 2226-5724
12. **Opande GT.**, Musyimi DM. and Tirop CS. (2017); “A rich mushroom diversity at Maseno University, Siriba campus, Maseno (Kenya)” In *International journal of microbiology and mycology*. 6 (1) pp 1-8 pISSN: 2309-4796
13. **Opande GT**, Musyimi DM, Buyela DK. and Ouko JO. (2017); “Some pathogenic bacteria associated with fresh and smoked Nile perch (*Lates niloticus*) in Luanda market, Vihiga County (Kenya)”. In; *International Journal of pharmaceutical science Invention* 6(7) (July 2017) pp 13-17. e- ISSN 2319-6718 p- ISSN 2319-670X
14. **Opande GT.**, Musyimi DM. and Muthoni KC. (2017). “Effects of planting depth on seed germination and emergence of *Crotalaria brevidens* on Maseno soils, Maseno (Kenya)” In; *Journal of Agriculture and Veterinary sciences*; 10 (8). Ver.1 (Aug 2017) pp 30-34. e-ISSN: 2319-2380 p-ISSN: 2319-2372
15. **Opande GT.**, Musyimi DM. and Nyanganga HT. (2017) “Isolation and identification *Rhizoctonia solani* on the water hyacinth (*Eichhornia crassipes* [Mart] Solms. Laubach) in the Winam gulf (Lake Victoria, Kenya).” In *Journal of Agriculture and Veterinary sciences*; 10 (8) Ver. 1 (Aug 2017) pp 39-43. e-ISSN: 2319-2380 p-ISSN: 2319-2372
16. **Opande GT.** Mutebi C. and Arama PF. (2017); “Evaluation of selected *Acremonium zonatum* Saw. Gams. Mycoherbicide-oil mixtures for *Eichhornia crassipes* (Mart.) Solms. Laubach) biocontrol in Lake Victoria (Kenya)”. In; *Journal of Agriculture and Veterinary sciences*; 10 (8) ver.1 (August 2017) pp 51-53 e-ISSN: 2319-2380 p-ISSN: 2319-2372

17. Musyimi DM, Sikuku PA., **Opande GT.** and Korir VJ. (2017), “Allelopathic effects of *Eucalyptus camaldulensis* and *Eucalyptus globules* leaf extracts mixture on germination and growth of *Sorghum*” In; *Journal of biological science* 3 (7)(July 2017) 5 pp 58-78 ISSN: 2455-7676
18. **Opande GT,** Dida M, Onyango P and Wesonga C (2017); “Incidences and severity of maize ear rot disease in Western Kenya”. In *International journal of biosciences* 10 (2) pp 136-143 p-ISSN: 2220-6655 e-2222-5234
19. **Opande GT,** Dida M, Onyango P and Wesonga C (2017) “Evaluation and response of selected maize genotypes to *Stenocarpella maydis* in Maseno farm, Maseno (Kenya)”. In *International journal of biosciences.* 10 (2) pp 170-175. p-ISSN: 2220-6655 e-2222-5234
20. Onyango P, **Opande GT** and Nyunja AR. (2017) “Implications of pollen character coding and their diagnostic value in the determination of taxonomic value in the determination of taxonomic resemblance among some indigofera Linn. Species”. In *International Journal of life sciences research* 5(3) (August 2017) pp 107-115 ISSN 2250-3153
21. Buyela DK, Musyimi DM, Miruka D, **Opande GT** and Pascaline J (2017) “ Isolation and characterization of *Ralstonia solanacearum* strains of tomato wilt disease from Maseno Kenya” In *Journal of Asian scientific research* 7(9) (October 2017) pp404-420 ISSN: 2223-1331(p) ISSN: 2226-5724
22. Onyango P, Nyunja AR and **Opande GT.** (2017) “Validation of hierarchical cluster solution based on qualitative pollen characters of some indigofera Linn. Species”. In *International Journal of life sciences research* 5(4) (October 2017) pp 37- 44 ISSN 2250-3153
23. Buyela DK, Musyimi DM, **Opande GT** and Gichuhi MN (2018) “ Allelopathic effects of *Bidens pilosa* on seed germination and growth of *Amaranthus dubius*” In *Journal of Asian scientific research* Vol. 8 (3) pp 103-112 (e) ISSN: 2223-1331(p) ISSN: 2226-5724 DOI: [0.18488/journal.2.2018.83.103.112](https://doi.org/10.18488/journal.2.2018.83.103.112)
24. Juma EOA., Musyimi DM. and **Opande GT.** (2018). Enumeration and Identification of Rhizospheric Microorganisms of Sugarcane Variety CO 421 in Kibos, Kisumu County, Kenya. In *Journal of Asian scientific research* Vol. 8 (3) pp 113-127 ISSN(e):2223-1331 ISSN(p): 2226-5724 DOI: [10.18488/journal.2.2018.83.113.127](https://doi.org/10.18488/journal.2.2018.83.113.127)
25. Juma EOA, Musyimi DM. and **Opande GT** (2018). Antagonistic Potential Of Selected Fungal and Bacterial Isolates From Rhizosphere of Sugarcane Variety CO 421 against *Sporisorium scitamineum* in Kibos, Kisumu County, Kenya. In *Applied science reports* 23(3) pp 7-15 E-ISSN: 2310-9440 / P-ISSN: 2311-0139 DOI: [10.15192/PSCP.ASR.2018.23.1.715](https://doi.org/10.15192/PSCP.ASR.2018.23.1.715)

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31. Jiveri B, Siundu R, **Opande GT** and Ogodo N. (2019) "Bio-alkanol gel fuel as a form of renewable energy" A paper presented at the *1st Health, Environment & Climate change an international conference* held at the Safari Park Hotel, Nairobi, Kenya. 2nd – 3rd December 2019

32. Jiveri B, **Opande GT** (2020) "Delivering bioalkanol gel to rural communities in the Lake Vitoria basin" A paper presented at the *10th KEMRI Annual scientific & health conference (KASH)* held at the Safari Park Hotel Nairobi, Kenya 11th - 13th February 2020

33. William OE, Musyimi DM, **Opande GT** (2020) “Bioactivity of Endophytes from *Calliandra calothyrsus*, *Leucaena diversifolia* and *Sesbania sesban* against *Cercospora zeae-maydis*” In *International Journal of Research and Scientific Innovation (IJRSI)* | Volume 7(6), pp 117-121 June 2020 e-ISSN 2321–2705
34. Emitaro WO , Musyimi DM, **Opande GT** and Odhiambo G. (2020) “Phytochemical and antimicrobial properties of leaf extracts of *Calliandra calothyrsus*, *Leucaena diversifolia* and *Sesbania sesban*” In: *Bacterial Empire 2020*, Vol. 3,(3) pp 20-24 July 2020
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35. Arum S. Fileta, **Opande GT** and David M. Musyimi (2020) Comparative Studies of Phytochemical and Antimicrobial Activity of *Carica papaya* L. Extracts against *Escherichia coli*, *Staphylococcus aureus* and *Candida albicans* In *Archives of Ecotoxicology*, Vol. 2(3) pp. 35-42, 2020
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37. Musyimi DM, Ashioya TA, **Opande GT** and Emitaro WO (2021): “Antibacterial activity of crude extracts of *Solanum incanum* against *Escherichia coli* and *Staphylococcus aureus*” In *Bacterial Empire* 4 (2) pp 183 April 2021 DOI: [10.36547/be.183](https://doi.org/10.36547/be.183). DOI: <https://doi.org/10.36547/be.183>
38. Mutebi CM., Musyimi DM., **Opande GT** (2021) “Bio control of water hyacinth with *Cercospora piaropi* and *Myrothecium roridum* corn oil formulations in the greenhouse for enhanced water resources management and conservation”. In *East African Journal of Science, Technology and Innovation* 2 (special issue) pp 1-15. May 2021 E-ISSN: 2707- 0425
<https://ejasti.org/index.php/EAJSTI/article/view/331>
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<https://doi.org/10.36547/ae.2021.3.3.81-84>
40. **Opande GT**, Musyimi DM. and Sikuku PA. (2021) “Investigation of water hyacinth (*Eichhornia crassipes* [Mart.] Solms-Laubach) phytopathogens in the Winam gulf (Lake Victoria, Kenya)” In: *Journal of Agriculture and Veterinary sciences*; (In Press)

41. Buyela DK, Musyimi DM, Onyango D. M and **Opande GT** (2021) “Effect of *Senna didymobotrya* and *Moringa oleifera* plant extracts on in-vitro and in-vivo growth of *Ralstonia solanacearum* in Maseno, Kenya”, In *International journal of microbiology and mycology*. (In press)
42. Musyimi DM, Buyela D K, **Opande GT** and Wamunyole WH (2021); “Effect of sodium chloride salinity on germination and growth of pumpkin seedlings (*Cucurbita pepo* L.)”. In *Journal of Asian scientific research* (In press)

UNIVERSITY LEVEL TEXT BOOKS PUBLISHED

1. **Opande GT.** and Musyimi DM. (2015); “University and college students practical manual for biology students; A survey of four kingdoms (1st ed) (2015)” *World science and research publishing*. ISBN-13: 978-600-94857-3-4
<http://www.wsrpublishing.com/index.php/wsrp/catalog/book/18>
2. Otieno Carren, **Opande GT** and Palapala VAP (2018) “Current challenges in Production, Management of *Colocasiae esculenta* (L) Schott (Taro) leaf blight disease and biology of *Phytophthora colocasiae* Racib in Kenya” ISBN-13: 978-613-9-84724-2 ISBN-10: 6139847249 EAN: 9786139847242 [LAP LAMBERT Academic Publishing](https://www.lap-publishing.com/) <https://www.lap-publishing.com/>

INTERNATIONAL JOURNALS EDITORIAL & REVIEW BOARD MEMBERSHIPS.

1. (2021-2022) *Asian Journal of Current Research* (AJOCR)
2. (2021-2022) *Bacterial Empire*
3. (2021-2022) *Journal of Research and Innovation in Social Science* (JRISS)
4. (2020-2022) *Journal of Applied Life Sciences International* (JALSI)
5. (2020-2022) *Chemical Science International Journal* (CSIJ)
6. (2020-2022) *International Journal of Horticultural Science and Technology* (IJHST)
7. (2020-2022) *International Journal of Research and Scientific Innovation* (IJRSI)
8. (2020 -2022) *Current Journal of Applied Science and Technology* (CJAST)
9. (2020-2022) *International Research Journal of Pure and Applied Chemistry* (IRJPAC)
10. (2019-2020) *Journal of Biodiversity and Environmental Sciences* (JBES)
11. (2019-2022) *International Journal of Research and Innovation in Applied Science* (IJRIAS)
12. (2016-2019) *Journal of applied pharmaceutical sciences* (JAPS)

MANUSCRIPTS REVIEWED IN INTERNATIONAL SCIENTIFIC JOURNALS.

1. "Anti-bacterial and anti-oxidant studies of *moringa oliefera* extracts" for Asian Journal of Current Research (AJOCR) (Manuscript reviewed on 31st October 2021)
2. "A Effect of Inoculating *Bradyrhizobium Liaoningense* on Growth, Chlorophyll Concentration, Nodulation and Yield of Soya Beans: Effect of Inoculating *Bradyrhizobium Liaoningense* on Growth, Chlorophyll Concentration, Nodulation and Yield of Soya Beans" for *Bacterial Empire Online* (Manuscript reviewed on 18th October 2021)
3. "Competence of Secondary School Teachers' Usage of Bloom's Taxonomy of Education on Lesson Preparation, Presentation and Students' Assessments in Science," for *International Journal of Research and Innovation in Social Science (IJRISS)* ISSN: 2454-6186 Online (Manuscript reviewed on 19th October 2021).
4. "Bacteriological assessment of finger tips of ladies with artificial nails," for *International Journal of Research and Scientific Innovation (IJRSI)* Online ISSN: 2321-2705. (Manuscript reviewed on 23rd September 2021)
5. "The importance of bio fertilizers as alternative soil fertility amendments," for *Bacterial Empire. Online* (Manuscript reviewed on 14 august April 2021)
6. "Efficacy of methanolic and aqueous extracts of *Thevetia peruviana* (pers.) K.Schum on growth of *Phytophthora colocasiae* Racib, causal agent of taro late blight in Cameroon" for *Journal of Applied Life Sciences International (JALSI)* Online ISSN:2394-1103 (Manuscript reviewed on 16th May 2021)
7. "Antioxidants and biomarkers of inflammation as risk factors of vascular cognitive impairment in adult hypertensives" for *Chemical Science International Journal (CSIJ)* Online ISSN: 2456-706X (Manuscript reviewed on 26th April 2021)
8. "Reviewing the suitability of mulberry (*Morus Alba* L.) for integration into the farming system for the mitigation of climate change" for *International Journal of Horticultural Science and Technology (IJHST)* Print ISSN: 2322-1461 Online ISSN: 2588-3143 (Manuscript reviewed on 20th April 2021)
9. "Citric acid Production by *Aspergillus niger* and *Aspergillus niger* Isolated from soil in Keffi. ," for *International Journal of Research and Innovation in Applied Science (IJRIAS)* ISSN: 2454-6194 6194 (Manuscript reviewed on 20th March 2021)
10. "Evaluation of the antifungal activities of local herbs on dermatophyte species isolated from rice farmers in Ebonyi State, Nigeria," for *International journal of research and innovation in applied science (IJRIAS)* ISSN: 2454-6194 (Manuscript reviewed on 8th March 2021)
11. "Applications of nanotechnology in vaccine development for corona virus (SARS-CoV-2) disease (Covid-19)" for *International Journal of Research and Scientific Innovation (IJRSI)* ISSN: 2321-2705 (Manuscript reviewed on 1st March 2021).

12. In-vitro screening for disease resistance in wheat genotypes against *Bipolaris sorokiniana* using callus culture method for *Current Journal of Applied Science and Technology* (CJAST) Online ISSN: 2457-1024 (Manuscript reviewed on 21st January 2021).
13. Assessment of forage species on community rangelands, A case study in Tolon District *International Journal of Research and Innovation in Applied Science* (IJRIAS) ISSN: 2454 -6194 (Manuscript reviewed on 21st January 2021).
14. “Pesticide Residues in Vegetables Collected from Different Markets of Navsari District” *International Research Journal of Pure and Applied Chemistry* (IRJPAC) Online; ISSN: 2231-3443 (manuscript reviewed on 3rd January, 2021)
15. “Survey of Microbial contamination of Garri samples sold in Oye Ekiti Local Government area of Ekiti State and their susceptibility to antibiotics” *International Journal of Research and Innovation in Applied Science* (IJRIAS) ISSN: 2454 - 6194 (Manuscript reviewed on 1st January 2021).
16. “Determination of nutrient composition and associated spoilage fungi of different varieties of breadfruit” *International Journal of Research and Innovation in Applied Science* (IJRIAS) ISSN: 2454-6194 (Manuscript reviewed on 11th November 2020).
17. “Role of ascorbate–glutathione (AsA–GSH) pathways in *Phytophthora* leaf blight disease resistance in taro (*Colocasia esculenta* L. Schott)” *International Research Journal of Pure and Applied Chemistry* (IRJPAC) Online; ISSN: 2231-3443 (manuscript reviewed on August 24, 2020)
18. “Traditional use of plants as medicine and poison by Tagin and Galo tribe of Arunachal Pradesh.” *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on April 12, 2019).
19. “Evaluation of chemical constituents and antimicrobial activities of *Brackenridgea zanguebarica* Olive and approach for its conservation.” *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on March 20, 2019).
20. “Total phenolic content and antioxidant activities of different extracts of five selected tropical species.” *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on March 13, 2019).
21. “Mechanism of the anti-oxidative and anti-diabetic potentials of *Elephantorrhiza elephantina* (Burch.) *skeels* root extracts”. *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on January 16, 2019).
22. “Genus *Prismatomeris* (Rubiaceae): phytochemistry and their biological activities” *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on December 6, 2018).
23. “Pharmacological evaluation of ethnobotanical *Glycosmis Pentaphylla* Lour as an anti-diabetic, anti-oxidant and cytotoxic agent” *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on August 27, 2018).

24. "Botanical and genetic characterization of *Hibiscus syriacus* L. cultivated in Egypt" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on August 21, 2018).
25. "Ethnomedicinal evaluation of medicinal plants used against gastrointestinal disorders in western middle Atlas region (Morocco)". *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on June 4, 2018).
26. "Screening for different polyphenolic compounds from the selected species of *Osbeckia* L; A search" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on May 9, 2018).
27. "HPTLC screening for flavonoids content in leaf extracts of *Syzygium cumini* (Linn.) and its antimicrobial activity" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on April 20, 2018).
28. "Chemistry, ethnobotanical uses and biological activities of lichen genus *Heteroderma trevis* (Physciaceae; Lecanorales; Ascomycota) a comprehensive review" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on Mar 14, 2018).
29. "Monitoring of essential oil production in Japanese mint (*Mentha arvensis* L) treated with degraded oligomers of sodium alginate under field conditions" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on October 28, 2017).
30. "Acquisition of ethnobotanical knowledge on zingiberales from tribal's of Kollam district, Kerala, India" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on July 10, 2017).
31. "Microscopic examination of *Clausena dentate* (Willd.) Roem. (Syn *C. willdenovii* Wright & Arn) *Rutaceae* " (JAPS) Online ISSN: 2231-3354 (manuscript reviewed in June 12, 2017).
32. "*Paris polyphylla* Smith – A critically endangered, highly exploited medicinal plant in the Himalayan region" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on January 24, 2017).
33. "Morphological and anatomical features of *Bauhinia vahlii* Wight & Arnott. Grown in Egypt" *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on August 13, 2016).
34. "Development of linear model for leaf area measurements of two medicinally important plants *Helicteres isora* L. and *Vitex negundo* L." *Journal of applied pharmaceutical sciences*; (JAPS) Online ISSN: 2231-3354 (manuscript reviewed on June 4, 2016).

UNIVERSITY ADMINISTRATIVE RESPONSIBILITIES

1. **2019** (To date); Chairman Department of Biological & Agricultural sciences, School of Science, Kaimosi Friends University College (KAFUCO), Kaimosi, Kenya
2. **2019** (Oct-Dec); Ag. Director for Research & innovation, Kaimosi Friends University College (KAFUCO), Kaimosi, Kenya
3. **2013 -2019**; Chairman Departmental Post Graduate committee, Department of Botany, Maseno University, Box 333-40105 Maseno Kenya.
4. **2013 -2019**; Chairman ISO committee, Department of Botany, Maseno University, P. O. Box 333-40105 Maseno Kenya.
5. **2016 -2019**; Member School of Graduate School (SGS) Board, Maseno University, P. O. Box 333-40105 Maseno Kenya.

CONSULTANCIES

1. **The Republic of Maldives, Ministry of Fisheries, Marine Resources and Agriculture**, to undertake the following;
 1. Acquire *Colocasia esculenta* resistant germplasm that are suitable for Maldives growing conditions;
 2. Conducting necessary field research and assessments to identify the suitability of select varieties.
 3. Finalization of a cultivation plan for selected germplasm for cultivation in the Maldives;
 4. Provide necessary trainings and information to selected island communities and extension personnel from the ministry
2. **The Republic of Maldives, Ministry of fisheries, marine resources and agriculture**
Plants protection & quarantine section

RESEARCH FUNDS ATTRACTED

1. **2021 (November- December)** Attracted **USD\$ 10,000** on behalf of *Kaimosi Friends University College (KAFUCO)* for Identification, acquisition of resistant *Colocosaes esculentus* germplasm and introduction to the Republic of Maldives from the Republic of Kenya.
2. **2020-2023 (December) OWSD PG Fellowships** funded by UNESCO for **USD 7,391.31 (Seven thousand three hundred ninety one and thirty one cents only)** for Ms. Gebeyehu Desta Mulu and *Dr George Timothy Opande* research at

Kaimosi Friends University College (KAFUCO). Title of research is;
“Production and optimization of bioethanol gel fuel, briquette fuel and biofertilizer from selected agricultural wastes and water hyacinth (Eichhornia crassipes) around Bahir Dar, Northern Ethiopia”

3. **(2016-2021) National Research Fund (NRF) Multidisciplinary research grant;** Awarded a grant of **Kshs. 10,234,620.00/= (Ten million Two hundred thirty four thousand six hundred twenty shillings only)** for 3 year research titled; *“Mitigation of climate change through sustainable integration of maize based agro-forestry systems for Food Security and Poverty Reduction in Kisii and Vihiga (Western Kenya)”*.
4. **(1997) Federal Republic of Germany competitive grant for in country research studies through DAAD;** Awarded a grant of **750, 000/- (Seven hundred and fifty thousand only)** for *PhD research studies at Maseno University.*
5. **(1996) United Nations Education and Science Organization (UNESCO);** Awarded grant of **Kshs. 1,000,000/= (One million shillings only);** titled *“Studies on the biological control of water hyacinth and its associated limnology in Lake Victoria”*

ACADEMIC REFEREES

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