

Dr. Joseph Mghalu Mwafaida  
**Designation:** Lecturer  
Department of Biological Sciences  
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#### **Academic Qualifications**

1. BSc. HORTICULTURE (1992) EGERTON, KENYA
2. MSc PLANT PROTECTION (2004) GIFU, JAPAN
3. PhD PLANT PATHOLOGY (2007) GIFU, JAPAN

#### **Research**

1. Bio-fungicide development: SIETECs CO. LTD, GIFU, JAPAN (2007)  
Post doctorate engagement in a construction firm. Assessed effectiveness of bio-fungicides on moulds growing on concrete and other structural surfaces
2. Biofertilizer Development: NCST funded project (2009/10). Developed a protocol for efficient management of garbage. The project utilizes commercial Effective Microbes to efficiently biodegrade waste into useful farm inputs - Biofertilizer. The protocol can also incorporate biogas generation from biodegradable waste
3. Seed maize Purification: FAO-Somalia, (2009-present). Contracted to purify Somtux seed for FAO Somalia. The project intends to generate the pre-basic seed for commercial production of Somtux maize seed destined for the Lower Shabelle region of Somalia
4. Commercial Development of Eggplant Puree: NCST funded project (2012/14): Project intends to generate a protocol for commercial development of eggplant puree. The protocol shall also accommodate other fruit vegetables that seasonally hit the market but go to waste due to abundance.
5. Isolation and characterization of Epibiotic bacteria co-existing with *Lyngbya majuscula* (marine cyanobacterium): Graduate Project: NCST funded (2012-2013)
6. Isolation, characterization and application of fluorescent pseudomonads (Bacteria) in control of damping-off diseases in horticulture: Graduate Project: PU funded (2012-2013)

#### **Journals and Papers Presented**

1. Mwafaida J. M: Effects of saline water on Calcium uptake in tomatoe (*Lycopersicon esculentum*). 2012. Conference proceedings. Horticultural Association of Kenya Annual Meeting, Bondo, Kenya.
2. Mwafaida J. M: Efficient garbage management through biofertilizer development, Proceedings, Annual Conference for Research and Innovations, National Council for Science and Technology, KICC, Kenya, May 2011
3. Mwafaida J. M. and Mitsuro Hyakumachi. 2010. Dynamics of *Trichoderma* spp. in lectin inoculated soils, Proceedings, Conference for National Council for Science and Technology, KICC, Kenya, May 2010
4. Mwafaida J. M and Mitsuro Hyakumachi. 2009. Development of suppressive soils to damping off disease in cruciferous vegetables. Horticultural Society Of Kenya conference proceedings, Arusha, October, 2009
5. Mwafaida J M, Masashi H, Kubota M, Kawagishi H, and Hyakumachi M. 2007. Isolation and characterization of lectins from the AG-D group of binucleate *Rhizoctonia* species. Journal of General Plant Pathology, 73:229-234.
6. Mwafaida J M and Hyakumachi M. 2007. Lectins from *Rhizoctonia* spp and their possible Industrial applications. Proceedings of Feedforth International Research Colloquium Nagoya, Japan, October, 2006.
7. Mwafaida J M, Takashi, T, Kubo N, Kubota M, and Hyakumachi M. 2007. Selective accumulation of *Trichoderma* species in soils suppressive to radish damping-off disease after repeated

inoculations with *Rhizoctonia solani*, binucleate *Rhizoctonia* and *Sclerotium rolfsii*. Journal of General Plant Pathology, 73:250-259

**Others:**

Microbial sciences with key interests in bio-prospecting on beneficial micro-organism and their application in efficient garbage management, bio-production and bio-remediation for persistent pesticides, oil spills, marine paints, coastal and marine gas-oil pollution.