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Department: Biological Sciences
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Designation: Lecturer

Academic Qualifications:

Phd. (Ecology)

Friedrich-Schiller-University, Jena, Germany.

Msc. International Horticulture

Leibniz University Hannover, Hannover, Germany

Bsc. Horticulture

Jomo Kenyatta University of Agriculture and Technology (J.K.U.A.T).

Diploma, Horticulture

Jomo Kenyatta University of Agriculture and Technology (J.K.U.A.T).

Research:

Many plants species are capable of growing in different types of habitats, where the environmental and biotic pressures vary. To overcome this, plants exhibit changes (plasticity) that allow them to adapt and change depending on the new challenges facing them. Plant secondary metabolites are some of the strategies plants use to deal with changing environments. These metabolites have been shown to protect plants directly from abiotic stresses like temperature and ozone and also from biotic stresses like pathogens and insects. Additionally, secondary metabolites play a role in inter- and intra-species communication and are thus key in ecological communities.

My main interest are plant responses to environmental conditions (like competition and drought stress) at the chemical and molecular level and how this alters microbe-plant/ insect-plant interactions with a deeper motivation of being able to find sustainable solutions for agricultural and environmental applications. I am also interested in understanding soil microbe diversity and how this influences nutrient availability to plants, how it influenced by above ground plant diversity and the role this has on productivity of both natural and agricultural ecosystems.

Publications (in peer reviewed journals):

Kigathi, R.N., Weisser, W.W., Veit, D., Gershenson, J. and Unsicker, S.B. (2013). Plants suppress their emission of volatiles when growing with conspecifics. *Journal of chemical ecology*, 39, 537–45.

Kigathi, R. and Poehling, H.-M. (2012) UV-absorbing films and nets affect the dispersal of western flower thrips, *Frankliniella occidentalis* (Thysanoptera: Thripidae). *Journal of Applied Entomology*, 136, 761–771.

Kigathi, R.N., Unsicker, S.B., Reichelt, M., Kesselmeier, J., Gershenson, J. and Weisser, W.W. (2009) Emission of volatile organic compounds after herbivory from *Trifolium pratense* (L.) under laboratory and field conditions. *Journal of chemical ecology*, 35, 1335–48.

Loxdale, H., Kigathi, R. and Weisser, W. (2009). Paucity of microsatellite multilocus genotypes (MLGS='clones') in tansy aphids. *Redia*, 2010, 51–56.

Conferences:

Kigathi, R. (2012). Plant species richness alters emission of volatile organic compounds. The future of biodiversity research in Africa: Scope, Opportunities, Collaboration, Access and Benefit Sharing. Taita Taveta University College, Voi, Kenya. (Talk).

Kigathi, R., Unsicker S. B., Gershenson J., and Weisser W.W., (2012). Plant species richness alters emission of volatile organic compounds. Symposium on Multi-trophic Interactions (MTI), Göttingen, Germany. (Poster).

Kigathi, R., Weisser, W. W., J., Gershenson, J., Unsicker, S. B., (2011). Neighbor identity affects plant volatile emission. 14th Symposium on Insect-Plant Interactions (SIP), Wageningen, Netherlands. (Talk).

Kigathi, R., Weisser, W. W., J., Gershenson, J., Unsicker, S. B., (2011). Neighbor identity affects herbivore induced volatile emission. Presented at 10th IMPRS Symposium, MPI for Chemical Ecology, Dornburg, Germany. (Poster).

Kigathi, R., Unsicker S., Gershenson J., and Weisser W. W., (2009). Volatiles emitted by *Trifolium pratense* L. under different experimental Conditions. 25th meeting of the international society of chemical ecology. Neuchatel, Switzerland. (Poster).

Kigathi, R., Kunert G., Gershenson J. and Weisser, W.W., (2009). An aphid's dilemma. German entomological society conference. (DGae), Göttingen Germany. (Poster).

Kigathi, R. and Weisser, W., (2007). Why are there so few aphids? Symposium on molecular approaches to study trophic interactions: Current progress and future directions, Innsbruck University, Austria (Talk).

Kigathi, R. and Poehling H-M., (2006). Effect of UV-absorbing greenhouse covering materials on the immigration and dispersal of western flower thrips (*Frankliniella occidentalis*). Deutsche Pflanzenschutztagung in Göttingen. (Poster).