

## **MOUNT KENYA UNIVERSITY BOTANICAL GARDEN SHARES ITS DIVERSITY INTERNATIONALLY**

The Mount Kenya University Botanical Garden has received international recognition through the publication of a peer reviewed research article in the latest edition (June 2016) of the prestigious International Journal of Biodiversity and Conservation.

The publication titled, “ *Assessment of diversity and conservation status of plants at Mount Kenya University Medicinal Botanical Garden, Thika sub-County, Kiambu County, Kenya*” (Link: <http://www.academicjournals.org/journal/IJBC/article-abstract/9E5BBF358741>) is as a result of an intensive three year joint research between the School of Pharmacy and the MKU Directorate of Research, Grants and Endowments.

The research aimed at establishing the degree of biodiversity of plants at the MKU Botanical Garden with special emphasis on plants with medicinal properties. The researchers documented a total of 248 plant species in the Botanical garden belonging to 60 plant families highlighting the rich biodiversity of the botanical garden. The research also established that 90% of the plants were indigenous with 44% having medicinal properties.

The researchers established that the Mount Kenya University botanical garden is home to two species of plants that are endemic (are only found in the MKU Botanical Garden) which elevates the botanical garden to a privileged position as a sanctuary for these special plants which are in danger of becoming extinct. These two species of plants which have not been seen anywhere else in world need to be protected at all costs. One of the two plants is the subject of a PhD Thesis of one of the researchers who has established that it has biologically active compounds which possess cytotoxic, antimicrobial and anti-cancer activity.

Mr. Jared Onyancha Misonge, a lecturer in the School of Pharmacy and who was the principal investigator in the study, observes that the next step after this landmark study is to escalate the conservation efforts of the identified plants together with other indigenous medicinal plants. Mr. Misonge, who is also the coordinator of the Mount Kenya University Botanical Garden is currently finalizing his PhD research in Pharmacognosy and has conducted his research using some of the medicinal plants from the botanical garden and at the same time has deposited life voucher specimens. In the course of his PhD research, he has been able to isolate medicinal compounds that show promising anti-cancer activity which he intends to patent. “The MKU Botanical Garden is going to be the source of the next generation of anti-cancer drugs,” he was quoted as saying during a recent scientific seminar held in the School of Pharmacy.

The team of MKU researchers who conducted the landmark study is currently in the process of finalizing a proposal for the complete documentation and development of a web-based database system for documentation of the medicinal plants in the botanical garden. The system will facilitate research such that any scholar intending to conduct research on the plants at the garden will easily be directed electronically to the specific region of the botanical garden where the plant is located through the use of geospatial mapping techniques. This web based database system will be hosted on the University website and will create a convenient access to the rich biodiversity of the botanical garden to faculty,

visiting researchers in natural products and students. It will also act as a decision making tool on matters concerning conservation.

The MKU Botanical Garden was established by the University Management to stimulate research in natural products at the University (Link: <http://www.mku.ac.ke/index.php/mku-latest-news/710-mku-botanic-garden-to-boost-research>). This noble initiative is now paying dividends based on these international quality research output. The researchers intend to develop further collaborations with bodies who share an interest in conservation, ethno medicine and alternative medicine.

Mount Kenya University, through the department of Pharmacognosy (branch of pharmacy concerned with medicinal drugs obtained from plants or other natural sources) in the School of Pharmacy, intends to take a leading role in conservation and developing mitigation strategies towards climate change. Climate Change and Conservation is currently a global topical issue with the President of Kenya having recently signed into law the Climate Change Act, 2016.

The Climate Change Act, 2016 became law last month with an aim to provide a regulatory framework for enhanced response to climate change and enhancing mechanisms towards achieving a low carbon climate. The Act also aims at facilitating climate change research and development, training and capacity building, an area in which MKU is already providing leadership in.

The next phase of development of the MKU Botanical Garden is the establishment a conservancy section in the Botanical garden for managing and protecting endangered and rare plant species in line with the provisions of the Wildlife Conservation and Management Act, 2013 and the Kenya Traditional Medicine and Medicinal Plants Policy of 2005.