

Lecturer contributes to improving food security in Kenya

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Dr Josphert Kimatu, who is a genomic scientist, morphologically analyzing maize plants in a field. He correlates such observation with physiological and epigenetic variations for crop improvement

Dr. Josphert Kimatu is an innovative and passionate man who has devoted his life to improving food security through research.

A well-regarded lecturer at the South Eastern Kenya University (SEKU), Dr Kimatu believes that collaborative genomic research and post-harvest management strategies are key to solving the nagging food insecurity and other related problems facing communities in Machakos County (former Eastern province) where he lives and works.

“Maize is a staple food in my region, which has faced outbreaks of aflatoxin poisoning. Aflatoxin is a highly poisonous cancer-causing chemical produced by a fungus which thrives as a result of poor drying and storage practices of maize grain.”

“The occasional outbreaks have resulted in several people being hospitalised and others dying. Between 2004 and 2006, an estimated 200 people lost their lives in Kenya due to this issue,” Dr Kimatu explains.

It was the desire to find a lasting solution to this issue that compelled Dr Kimatu to join the Australia Awards Short Course on Post-harvest Management of maize, rice and legumes in 2012.

While in Australia, he interacted with several experts and practitioners who had interest and advanced knowledge in the field. He was also able to conduct a literature review on aflatoxin mitigation.

Later on, he collaborated with his lecturer and published a paper (Greener Journal of Agricultural Sciences) on the topic entitled “*The Significant Role of Post-Harvest Management in Farm Management, Aflatoxin Mitigation and Food Security in Sub-Saharan Africa*,” which examines the vital role post-harvest management can play in improving crop farming and in the mitigation of aflatoxin poisoning.

The paper encourages the use of small-scale metal silos, which contributes to better quality of grains and less pesticide usage. The adoption of this approach has the potential to increase incomes to farmers and food diversity while improving food security in the region.

Dr Kimatu is no short of words when linking this important piece of research to the knowledge he gained in the Short Course. “The Short Course opened a new, broader area of my research in

agriculture. My scientific background was not so close to agriculture but now I am deep in it. In fact, I became a member of the agriculture and livestock sector in my region called the Machakos County Development Forum (MCDF),” he explains.

Through membership in MCDF, Dr Kimatu has participated in strategic planning where he championed the adoption of post-harvest management strategies of grains to enhance food security in the region. To date, Dr Kimatu has reached over 250 farmers in different engagements through MCDF, encouraging farmers to abandon their traditional way of storing maize and adopt the small scale metal silos.

Dr Kimatu is currently teaching five Master’s students and supervising one of them in a research on aflatoxin mitigation strategies. Four of the students are Agricultural Extension Officers in the region whose work involves training and advising farmers on their day-to-day activities. “Through these Officers, I can now reach many farmers indirectly, further promoting the use of proper storage of maize in the region,” he adds.

Apart from maize storage research, Dr Kimatu is also researching on genomic resistance through correlating and ranking maize kernels variations with *Aspergillus flavus* resistance on high-yielding maize varieties that can grow well in the region. This is a joint-research funded by Australia Awards Small Grants Scheme, co-funded and conducted in collaboration with the Kenya Agricultural Research Institute (KARI).