BHEARD
Borlaug Higher Education for Agricultural Research and Development

2015 BHEARD Scholar

Samuel Juwala Mwafulirwa

Profile

Country of Study:	Kenya
University:	University of Nairobi
Department:	Biotechnology and Bioinformatics
Student Position:	Graduate Research Assistant - M.Sc.
Hometown:	Karonga, Malawi
Home Institution:	Ministry of Agriculture and Food Security, Department of Research
Home Position:	Research Technician
Mentored By:	Home: Placid Mpeketula University: George Obiero and Gabriel Aboge

Research Area: *Biotechnology*

BHEARD PROGRAM START DATE: September 2015

UNDERGRADUATE EDUCATION: B.Sc., Biology, University of Malawi, Malawi

RESEARCH INTERESTS: Samuel's research is entitled, "Characterization of Phosphate Solubilizing Bacteria and Fungus Involved in Bioremediation from Selected Agro-Ecological Zones in Malawi. The research is based on the fact that Malawian soils don't require application of inorganic phosphate because soils have large reserves of insoluble Phosphorous (316–997 mg/kg) which is due to regular applications of phosphate based inorganic fertilizers and rock minerals. This takes into account that efficiency of applied phosphate-based fertilizers is less than 20 percent which makes predictions that the accumulated P in Malawi soils would be enough to sustain potential yields for about 100 years if it's in available form.

The problem of P deficiency can be solved by exploitation of beneficial indigenous PSB that can be used as potential biofertilizers to increase the concentration of soluble P. It can also be sorted by exploiting indigenous fungus with ability to degrade xenobiotics (from pesticides, herbicides, etc.) so that farmers can benefit through bioargumentation/biostimulation. This research will have an impact to smallholder farmers because production cost will be reduced due to no application of phosphate based inorganic fertilizer, environmental protection due to availability of indigenous xenobiotic degrading fungus and it will be sustainable exit of fertilizer subsidies.

PERSONAL STATEMENT: Samuel's way forward is to exploit all alternatives to soil fertility that are sustainable, affordable and environmental friendly for smallholder farmers in Malawi.

WHEN I AM NOT WORKING I ENJOY: Samuel loves watching boxing and learning local knowledge on herbal sciences.