

## **DAKALO SPENDS TIME IN THE USA**

As a Master of Science student in the broad field of plant breeding and genetics at the University of Venda (Univen), my current study focuses mainly on interactions between legume plants (of the bean family) and soil bacteria (called rhizobia) in the root zone. The bacteria live inside small round structures (which are called nodules) on the roots where they obtain food from the plant. At the same time, the bacteria are able to make some useful type of fertilizer required by the plant. The bacteria use nitrogen gas for this purpose. Because of this mutualistic relationship between the two, farmers who grow these crops (bean family) benefit by spending little or no money on expensive commercial fertilizers.

In my research project, these soil bacteria will be studied in order to understand their DNA make-up (or characteristics) and then used to infect the roots of a field legume crop called pigeon pea. This crop is one of the main food legumes of the future because it can withstand drought and grows with minimal care in very harsh conditions. It will be very useful in arid conditions that are associated with global climate change. The results of this study will inform scientists about the relationships between the soil bacteria that interact with tree species of legumes such as the Acacia trees and field crop legumes such as pigeon pea.

Starting from May this year, I spent 10 weeks at the University of Virginia in the United States of America learning about some advanced skills in plant genetics. These skills will help me in my research project and I will also share them with other students. My trip and expenses were sponsored by the Department of Science and Technology (DST) through the University of Venda research internship programme. My current studies are funded by a scholarship from DST-NRF through the Centre of Excellence in Tree Health Biotechnology (CTHB) under the Forestry and Agricultural Biotechnology Institute (FABI) at the University of Pretoria (UP). My supervisors are Professors Eastonce Gwata (Univen), Emma Steenkemp (UP) and Fanus Venter (UP), who are all NRF-rated researchers.

In the USA, I interacted with other international students and experts in various fields of plant science. The laboratory in which I worked was full of very sophisticated equipment which is used in plant biotechnology research. It was an eye opener for me since I was used only to the environment at a previously disadvantaged Univen. I sincerely wish more students can be sponsored in future so that they may also have similar experiences and be inspired to study science which will help our country.



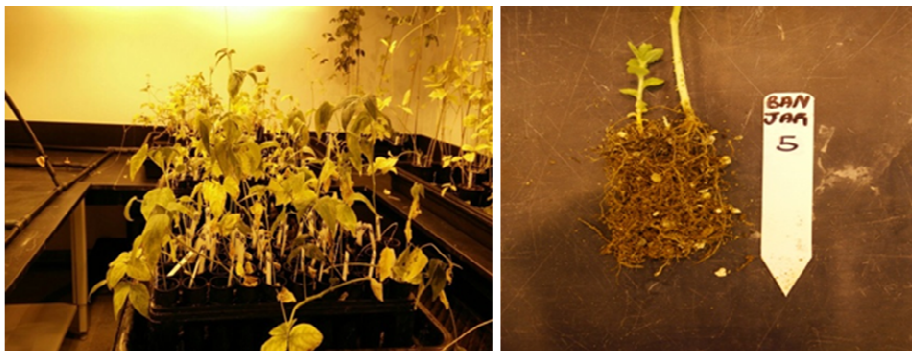
**Left: Director, Dr J.W Hockensmith and Dakalo Nemamilwe. Right: Research Professor in microbiology Prof. Hammarskjold and Dakalo**



**Ian, Joe, Tayeeb, Smakaleng and Dakalo (far right) at the University of Virginia**



**Inside a biotechnology laboratory at the University of Virginia**



**A greenhouse for all the experiments with legume crops**



**Left: Dakalo and Sydney chilling out at the Falafel restaurant. Right: Mountain hiking**