

Understanding the role of legumes and their significance in Biological Nitrogen Fixation (BNF) in smallholder farming systems of Zimbabwe

I am an MSc student at Plant Sciences at the University of Wageningen in the Netherlands and have recently done field work in collaboration with TSBF-CIAT under the N2Africa project in Zimbabwe. I worked in two of N2Africa targeted areas; Murehwa, an area with high agro-ecological potential, and Mudzi, an area with low agro-ecological potential. In these two districts, I determined the differences in adoption of different legumes as well as the different agronomic practices of farmers of different resource endowment. The findings showed that farmers in Murehwa grew a variety of legumes including soybean, common bean, bambara nut, cowpea and groundnut and these crops performed very well, while Mudzi was best suited for bambara nut, cowpea and groundnut only. It was noted that both resource endowed and resource constrained farmers give priority to cereals, mainly maize, at the expense of legumes.

The priority included agronomic practices such as fertilizer application, early weeding, early planting, and even land allocated to the different crops. Most farmers appreciate the significance of legumes as a good protein source for humans and livestock as well as cash crop. They were also conscious of the significance of intercropping legumes with cereals, or rotating legumes with cereals. It was noted that farmers recycle their nutrients whereby some crop residues are incorporated into the fields, while some are fed to livestock, which in turn provide manure which will be used again in to add fertility to the fields.

Another objective of the study was to quantify legume productivity in the two areas and to compare their productivity with that of cereals. It was noted that areas under cereals far outweighed those under legumes. Yields of legumes relative to cereals were also quantified per targeted household and it was shown that for most farmers cereals outweighed legumes in Murehwa while in Mudzi most farmers harvested more groundnuts than cereals.

I took plant and soil samples for analysis of different chemical parameters and the results are not yet ready. My work is part of the N2Africa project and it gives an opportunity to determine the significance of different legumes in different agro-ecological regions and how best production could be improved.

I would like to thank all my colleagues at TSBF-CIAT, Zimbabwe as well as my supervisors for making this field work a success. Thanks also to the farmers I worked with for their cooperation.

Brenda Tsungai Manenji



Picture showing some of the most grown legumes in Mudzi which include groundnuts, cowpea and bambara nut