Cowpea-Alectra Breeding Pipeline 2011-2017

Farmer managed seed production and dissemination:
2015: 908 Kg breeder seed produced and distributed to farmers for QDS. → 300 farmers given 3 kgs of seed for each released variety. → 13.7 t of Vuli-AR1, 10 t of Vuli-AR2 and 3.8 t of the previously available variety Fahari were produced by farmers in 28 villages across six districts of Tanzania. → Each farmer supplied candidate cowpea seed to 23 other farmers. → In 2016/17 season the project (ARI-Ilonga and FRN) produced 7.6 MT of improved seed, which would cover 1000 ha. The FRN produced 88% of the seed.

VARIETAL TESTING AND SEED PRODUCTION CAPACITY BUILDING FOR FARMERS:
Formation and training of farmer groups in seed production of quality declared seed (QDS) and marketing, processing, and use of cowpea.

MULTI-FUNCTIONAL VARIETIES:
3 Alectra resistant cowpea varieties Vuli-AR1 and Vuli-AR2 in Tanzania and Mkanakaufiti in Malawi were released (2013). The released varieties are preferred by farmers as they have large seed size, early maturity, short cook-time and cream color.

CHARACTERIZING AGROBIO DIVERSITY:
The project screened a range of cowpea lines for resistance to Alectra and general adaptability. (2010)

Achieve detectable, heritable variation for traits of interest among progeny generated:
On-farm evaluation of advanced crosses revealed the need to refine and purify the promising lines for Alectra resistance despite their superiority in yield and seed size.

Multi-environment Trials

Contextualized Scaling

Available of high quality seed:
In Malawi CPM Agri- Enterprises and Africa seeds are selling resistant variety seed.

Students involved in crossing

Future research -- Informed decision-making regarding selection environment:
2016: Wide variations in Alectra affecting various crops in the same agroecological conditions has been observed, raising concerns on possible genetic instability of various A. vogelli strains to develop multi-host adaptability. Farmers in research villages have indicated that there could be many more A. vogelli strains, for example farmers at Ikwega and Lyadebe villages, Njamba cited the prevalence and activity of A. vogelli varying with types of soils within the village.

Legend:
- Resilience
- CCRP strategies

Students involved in crossing

Local knowledge

AEI Systems

Southern Africa Community of Practice

“I got the molecular skills through this project that has led to my PhD in molecular aspects in common beans”. - Ms Beatrice Mwapopo

Project Partners

Lilongwe University of Agriculture and Natural Resources
Horticultural Research Training Institute
Ilonga Ag Research Institute
Sokoine University of Agriculture

University in Region National Ag Research Center