

Cowpea-Alectra Breeding Pipeline 2011-2017



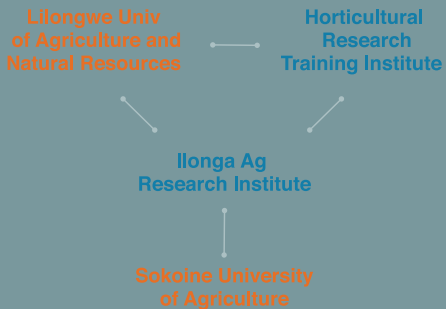
Students involved in crossing

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

Southern Africa
Community of Practice



Project Partners



University in Region National Ag Research Center

Contextualized Scaling

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 agrobiodiversity:

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



Availability of high quality seed:

In Malawi CPM Agri- Enterprises and Africa seeds are selling resistant variety seed.



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. vogelii* strains to develop multi-host adaptability. Farmers in research villages have indicated that there could be many more *A. vogelii* strains, for example farmers at Ikwega and Lyadebwe villages, Njombe cited the prevalence and activity of *A. vogelii* varying with types of soils within the village.

Local knowledge

AEI Systems

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.

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Multi-environment Trials

The diagnosis:

Cowpea is an important source of protein particularly in agroecological zones that experience low and shorter rainfall. *Alectra vogelii* is a parasitic weed that is more prevalent in areas that are marginal and more susceptible to climate change, causing between 41-100% of cowpea losses in some regions and years.

LEGEND:

Results

CCRP strategies

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