

Drought tolerant bean varieties offer hope to smallholder farmers in Malawi

Chataika, Barthlomew¹. Ndengu, Gift¹. Mponela, P¹. Desta, Lulseged¹. Chirwa, Rowland¹. Chikowo, Regis²

¹International Centre for Tropical Agriculture (CIAT), P.O. Box 158, Lilongwe, Malawi. ² Michigan State University, International Institute of Tropical Agriculture (IITA), Lilongwe, Malawi. The project was funded by USAID through Africa RISING

Introduction

The 2014/15 season was a nightmare in Malawi as the country faced floods at the beginning of the season and then terminal drought. Most farmers lost property and crops through flooding and water lodging while surviving crop fields were burnt dry prematurely by the terminal drought which was experienced towards the end of the season. As other crops suffered, the drought tolerant bush bean which CIAT was testing in Africa RISING trials survived the ordeal and was described as the hope towards mitigating against the effects of climate change by both technocrats and farmers.

Methodology

CIAT tested drought tolerant bush bean genotypes in Dedza and Ntcheu under Africa RISING project, using mother baby approach. Each mother had eight different management options being implemented and these were sole beans unfertilised, sole bean with manure, maize with manure and NPS fertilizer, bean-maize intercrop with NPS fertilizer, bean-maize intercrop with both manure and NPS fertilizer, sole bean with both manure and NPS fertilizer, bean-maize intercrop unfertilized and bean-maize intercrop with manure (Figure 1). The two bean genotypes used in these trials were SER45 and SER83. Each of the babies choose and implement one or two management options.

Participatory Technology Evaluation (PTE) was conducted with both participating and non-participating farmers.

Map of central Malawi showing Study Sites



Figure 1: Part of the treatments in a mother trial at Mbibzi in Dedza

Results



Figure 2a Maize plot before terminal drought



Figure 2b Maize plot after terminal drought

During the early part of the season, maize crop was very promising (Figure 1a).

At the end of the season, most plots, particularly those which did not have organic mature as part of the treatments, completely failed (Figure 1b)



Figure 3a Bean plot before terminal drought



Figure 3b Bean plot after terminal drought

The bush beans showed outstanding performance in all the plots when compared to other crops including the local bean varieties.

When compared with the poor performance of maize, farmers nicknamed the bean "the magic bean". Pod load count by two women of Tikondane club in Linthipe showed big differences between SER 83 (124pods from the best plant) and the adjacent local variety (27pods from the best plant).

Conclusion

The outstanding performance of the drought tolerant varieties raised hopes amongst stakeholders.

The genotypes have since been earmarked for release by the Department of Agricultural Research Services (DARS).

Contact:

Barthlomew Chataika
b.Chataika@cigar.org



Produced for the

Pan-African Grain Legume & World Cowpea Conference



27 February – 4 March 2016