

Cowpea breeding for improved drought tolerance in Mozambique

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Background

Cowpea is the most important source of vegetable protein for resource-poor households in Mozambique. The crop is grown countrywide by smallholder farmers for its fresh and dry grain, fresh and dried young leaves, and immature green pods. Drought stress, caused by low, erratic and short duration of rainfall, is a major yield and quality reducing factor. Despite the crops importance in Mozambique, little research has been done to breed drought tolerant cultivars. This poster presents the planned research activities to initiate development of a breeding programme focused on breeding cowpea cultivars with improved drought tolerance being conducted by Eduardo Mondlane University in collaboration with the University of California-Riverside under the GCP SP5 sub-programme under a project entitled “**Improving Cowpea Productivity for Marginal Environments in Mozambique**”.



Approach

- (1) Thirty (30) early and thirty (30) medium maturing genotypes will be evaluated in two locations during two seasons to provide baseline drought tolerance information and assess the importance of genotype x environment interactions for grain yield under drought in Mozambique;
- (2) Three hundred (300) landraces from Mozambique are being evaluated for drought tolerance in year 1 to identify the best 100 to be evaluated in year 2;
- (3) Ten (10) parents consisting of 4 drought tolerant and 6 susceptible farmers preferred varieties that combine good agronomic traits will be crossed in a diallel mating design to generate 10 breeding populations suitable for application of MAS and MARS using SNP-based markers developed under an associated GCP-TL I project.



Project Objectives

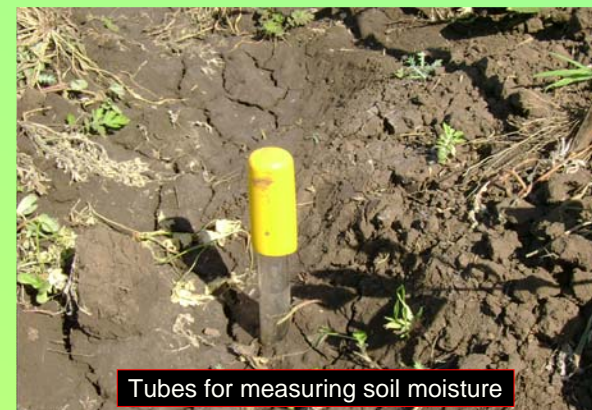
The project has three specific objectives:

- (1) To provide baseline drought tolerance information for early and medium cycle cowpea varieties and assess the importance of GxE for grain yield under drought in Mozambique;
- (2) To assess genetic variability for drought tolerance in a set of 300 cowpea landrace from Mozambique;
- (3) To develop breeding pop suitable for MAS and MARS using SNP-based markers developed under an associated GCP-TL I project.



Outcomes

- (1) Baseline drought tolerance information for early and medium cycle cowpea cultivars produced;
- (2) GxE interactions for grain yield under drought across African environments known;
- (3) Genetic variability for drought tolerance in 300 Mozambican landraces known;
- (4) Ten (10) breeding populations suitable for Mozambican conditions and for MAS and MARS developed.



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Muito Obrigado or Thank You Very Much