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CREATING VARIABILITY IN COWPEA FOR ADAPTATION AND VALUE ADDITION THROUGH INDUCED MUTATION

Cowpea (*Vigna unguiculata* L. Walp) is a major legume crop in Southern Africa. Cowpea provides a highly nutritious and inexpensive source of protein especially for low-income families. Production is characterized by low yields of less than 1.0 ton/ha against a potential of more than 4.0 ton/ha. The present project aims at developing improved cowpea varieties with high yield potential but with tolerance to abiotic and biotic stresses through induced mutation. Cowpea mutants were evaluated in the greenhouse and in the field. In Region II, LT11-3-3-13 and BB8-1-5-2 out-yielded their respective parental varieties by 52.3% and 40.6% respectively. In Region I, LT3-8-4-6 out-yielded its parental variety by 33.4%. LT11-3-3-12 and BB14-16-2-2 were identified to be tolerant to Al toxicity. LT4-2-4-1 was responsive to local and applied inoculation, while BB10-4-2-3 was responsive to local rhizobia. MS3-14-4, LT11-5-1, LT3-8-4-6, and LT3-8-4-1 showed tolerance to aphids, while LT 11-5-2-2, BB 7-9-7-5 and BB-14-16-22 were tolerant to bruchids. Farmers preferred cowpea mutants over currently grown varieties for their desirable traits. BB8-1-5-2 and LT11-3-3-13 will be released early in 2018. Four other mutants will be submitted for pre-release this year. Use of cowpea mutants with desirable traits will increase the food and nutritional security and reduce the cost of cowpea production in the country and create a greater market demand for cowpeas.

Country or International Organization

Zambia

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