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BROADENING THE GENETIC BASE AND NUTRITIONAL ATTRIBUTES OF COWPEA THROUGH MUTATION INDUCTION

Food and nutrition security at the household level remain significant challenges in Botswana's pursuit of sustainable development goals. The general population of Botswana depends on cereal and pulse crops for their food and nutrition security. Cowpea is one of the main pulse crops and is regarded by many as the poor man's meat due to its richness in protein. However, the presence of phytic acid, an anti-nutrient, limits the food and nutrition security prospects of this crop. This, together with the increasing cases of diabetes within the population of Botswana have provided the much-needed impetus to employ mutation induction to broaden the genetic base of cowpea. This has afforded a platform for selection of mutant lines of cowpea with diverse attributes. DNA analysis has revealed new genetic diversity in gamma-irradiated cowpea. Biochemical analysis of M3 mutant lines has also revealed polymorphisms in respect of phytic acid content and starch composition of cowpea seeds, with some mutant lines showing significantly high amylose content (approaching 40%). Elucidation of molecular events underlying these phenotype alterations is currently ongoing and results will be shared through the symposium.

Country or International Organization

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