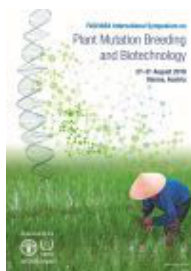


# FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



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## CREATION OF VARIABILITY IN BAMBARA GROUNDNUT USING MUTATION BREEDING

Bambara groundnut (*Vigna subterranea* L. Verdc.) is a grain legume crop with a great potential of contributing to food and nutrition security in Zimbabwe. It has high protein content (17-23%) with high levels of methionine and lysine. The major constraints faced by farmers in Zimbabwe in the production of Bambara groundnut include the long maturity duration exhibited by the crop, unavailability of improved disease resistant, early maturing high yielding and drought tolerant varieties. Mutation breeding has been identified as one of the strategies to improve the crop. Bambara groundnut has a narrow genetic base and mutation breeding was identified and used to create variability. Seeds were irradiated using gamma rays at the following doses 150, 200, 250, 300 and 350Gy. Two varieties namely Mana and Kazuma were irradiated. Selections were made from M2 generation to M4. The following traits were observed from the second generation; early flowering, high yield per plant, spreading growth habit, changes in leaf shape and size, seed coat colour, disease and drought tolerance. Many mutants with desired traits were selected. Three populations' namely the early maturing group, disease resistant (*Fusarium* wilt) and drought tolerant populations were developed. The mutation technique of irradiating seed with gamma rays has proved to be a tool that can be used in the creation of variability and desired traits in Bambara groundnut. Mutation techniques can therefore contribute significantly to Bambara groundnut improvement thereby contributing to nutrition and food security in Zimbabwe.

### Country or International Organization

Zimbabwe

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