

## Crop Production

### TRAINING SUMMARY

I attended a fellowship at Montana State University from September 14th, 2022, to July 15th 2023 in the field of mutation breeding in chickpea genetics and breeding. The fellowship was awarded and organized through the International Atomic Energy Agency's Technical Cooperation project SAF5016, titled, "Mutation Breeding of Vegetables to Improve Rural Livelihoods, phase I in South Africa". The project aims to develop vegetable germplasm with improved yield and adaptation to abiotic conditions in combination with high nutrient levels through the application of mutation-induced breeding. It was difficult to get crop specific training, especially for underutilized crops such as cowpea at the host institute, however using chickpea as a model crop for legume crops provided the principles which are similar to other crop species.

The training provided me with theoretical and practical aspects of the use of mutant populations and the applications of efficient techniques in screening for and utilization of useful mutants in breeding and genetics of legume crops. Professor Kevin McPhee in the Department of Plant Sciences and Plant Pathology, an expert in mutation breeding methods, shared his extensive knowledge on designing the mutant populations in chickpea.

### WHATS NEXT?

The training will contribute to the Technical Cooperation project as well as the host institute in use of the generated new mutant population of chickpea in the food and nutrition security. Currently, I am planning to generate mutant lines of okra (*Abelmoschus esculentus* L. Moench) using different mutation techniques to evaluate and select breeding lines for cross breeding and registration and release.



"The technical training I have received from my host institute is directly applicable for my home institute where we are primarily leading the leguminous, leafy and fruit vegetables breeding and development research program"

## Abe Gerrano - South Africa

September 14th 2022 - July 15th 2023

Hosted by: Montana State University