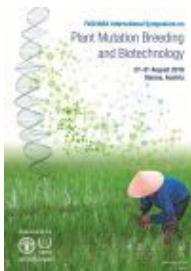


# FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



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## Bringing Genetic Gain to the Farmer's Field: The Contribution of Mutation Breeding

The demand for food is set to increase due to a growing population while on the contrary, climate change is emerging to be the biggest threat to agricultural production as more lands are becoming marginalized. To cope with the increasing demand for food and other plant-based products, the need to diversify and intensify crop production could not be more emphasized. Significant progress in the development of genetic variation in crops that breeders can select on, has been made through conventional breeding, mutation breeding and the development of genetically modified crops. These methods continue to offer sustainable ways of increasing the diversity of crops and traits that can adapt to the changing environment. Mutation breeding is the science of using heritable induced change in the genetic material of living organisms to drive crop improvement, species diversity and evolution. Induced mutation has been a highly successful strategy in plant breeding since its inception a century ago. Currently, over 3,220 mutant cultivars in over 210 plant species have been released, targeting various breeding goals. These include yield, quality, stature, disease, pest resistance, tolerance to abiotic stresses, postharvest losses, and novel end-user characteristics. Advances in DNA marker technologies which have seen the genomes of a number of important crops being sequenced and the development of genetic linkage maps, has dramatically accelerated the identification of key genes controlling important agronomic traits and identifying genetic variability among cultivars. Innovative ways and technologies will continue to play a significant role in accelerating the rate at which genetic gains are translated from research to improved varieties in farmers fields.

### Country or International Organization

**Authors:** ZIYOMO, Cathrine (Biosciences eastern and central Africa (BecA-ILRI-Hub)); YAO , N. (Biosciences eastern and central Africa (BecA-ILRI-Hub)); MIGNOUNA, Jacob (Biosciences eastern and central Africa (BecA-ILRI-Hub))

**Presenter:** MIGNOUNA, Jacob (Biosciences eastern and central Africa (BecA-ILRI-Hub))