

FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



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INDUCED MUTATIONS - TECHNOLOGICAL ADVANCEMENT FOR DEVELOPMENT OF NEW ORNAMENTAL VARIETIES

The concept of induced mutation for crop improvement development dates, back to the beginning of the 20th century. Induced mutations have played a major role in the development of superior crop varieties. Here, an overview on past, presence and future of induced mutations in ornamental crops will be provided, based on 36 years practical experience and 79 released mutant ornamental varieties. In commercial floriculture there is always demand for new varieties. Mutation has been very successfully utilized in ornamental crops since the effects of mutagens are very visible - selection for changed flower colour/shape/size is easy, and almost anything, which is novel, is of value. Many cultivars are heterozygous and mutation frequency is very high. Voluminous literature have been generated on ornamental crops using classical and in vitro techniques on different aspects like radio-sensitivity, selection of material, exposure to mutagens, suitable dose of mutagens, combined treatment, recurrent irradiation, acute and chronic irradiations, ion beam technology, colchicine-mutation, detection of mutation, nature of chimerism, classical and modern methods for management of chimera, in vitro mutagenesis, directive mutation, isolation of mutants etc. Step wise advancement/refinement of practical approaches for application of classical and in vitro induced mutation techniques will be highlighted for improvement of ornamental crops with special emphasis on interesting mutants with changed flower type, appendage like structure on florets, striped flowers, tubular florets, late/early blooming varieties along with management of chimera. Voluminous knowledge generated on ornamental crops will work as a model system to prepare guide lines for future planning of successful and accurate application of mutation technique in crop improvement programme.

Country or International Organization

India

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