

PLANT BREEDING

A Biometrical Approach

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PLANT BREEDING: A Biometrical Approach starts with the description of traits and the breeding systems including male sterility and self-incompatibility. It further describes the evolution of crop species. The breeding methods such as Pedigree, SSD, Bulk and Dihaploidy being employed in improving self-fertilizing species and various intra- and inter-population improvement methods in cross-pollinated crops are described completely. Methods for developing hybrids, synthetics and composites are also described. Methods for prediction of performance of superior recombinant pure breeding lines and hybrids are also fully described. Backcross breeding method for gene transfer and mutation breeding method for crop improvement are described along with clonal breeding methods for improving asexually propagated crops. Genetics of host-pathogen/insect interaction and the various approaches for resistance breeding are described in great detail. Applications of tissue culture in crop improvement, multiplication and conservation of germplasm have been detailed. Genetic engineering methods for development of transgenics and applications of molecular marker technology for crop improvement (Marker Assisted Selection) are described. Finally, the book describes the methods of collection and conservation of genetic resources, participatory approach of plant breeding and the IPR issues.

This book will be helpful to undergraduate and post-graduate students as well as teachers and researchers in the field of plant breeding.



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ISBN-978-1-84265-743-0



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