

Preface

Plant propagation deals with multiplication of plants and preserves their essential genetic characteristics. The plant propagation has thirteenth chapters. The first chapter is introduction which deals organizations and groups in propagation industry, areas of knowledge of propagation, plant propagation organizations and types of plant propagation. The second chapter deals with containers, media, mixes and structures. The third chapter deals with sexual propagation, development of fruits and seeds, the mature seed and apomixis. The fourth chapter deals with principles and techniques of seed selection, categories of seed propagated cultivars, breeding systems and legal controls to genetic purity. The fifth chapter deals with techniques of seed production, handling and seed dormancy. The sixth chapter deals with vegetative propagation, source selection and management, phase variation with plants and clones, chimeras and methods to detect pathogens in propagation source. The seventh chapter deals with propagation by specialized stems and roots. The eighth chapter deals with layering. The ninth chapter deals with propagation by cuttings. The tenth chapter deals with the propagation by grafting. The eleventh chapter deals with principles of tissue culture for micropropagation. The twelfth chapter deals with plant propagation of fruits. The thirteenth chapter deals with propagation of some ornamental plants. The Glossary containing related terms have been given. The selected references presented at the end can be useful to obtain for further information.

The efforts have been made to describe various chapters of plant propagation in a systematic and comprehensive manner. The subject matter illustrated with tables, figures and photographs, wherever, felt necessary. The book has been written keeping in view the requirements of the graduate students, teachers and research workers in the field of plant propagation. All the suggestions for further improvement of the book will be highly appreciated and accepted to incorporate in the next edition. The

authors are grateful to their several students who assisted them in their scientific pursuit in plant propagation during the last four decades at Govind Ballabh Pant University of Agriculture and Technology, Pantnagar. The first author is thankful to his wife Mrs. Manjul Mishra, daughter Mrs. Kanan Kaushal for assisting in many ways. Thanks are due to first author's sons Mr. Praduman Kaushal, Mr. Piyush Kaushal, Mr. Panini Kaushal, son-in-law Mr. Satyajeet Pandey, daughter-in-law Mrs. Pratibha Kaushal, Mrs. Subhi Kaushal, Mrs. Neha Kaushal, nephew Mr. Naveen Kumar, grandsons Mr. Pratham Kumar, Mr. Prayan Kaushal and grand daughter Ms. Adaya Kaushal. Thanks are also due to Mr. Shailendra Kumar, Senior Assistant for typing the manuscript on computer within the shortest possible time.

Dr. Kaushal Kumar Misra

Dr. N.K. Mishra

Dr. Satish Chand