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Trees III

Edited by Y.P.S. Bajaj

With 179 Figures

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*Dedicated to
Dr. Sarabjit Arora*

Preface

Trees have a variety of uses. As a source of food they provide fruit, roots, and leaves for humans and animals. They also serve as a source of fuel and bioenergy and find use as medicines and ornamentals. For reforestation, fruit production, and rapid turnover of biomass energy they are needed in large numbers. Therefore en masse clonal propagation of elite trees, which requires a speedy multiplication, is of the utmost importance. This can be achieved through micropropagation. Moreover other biotechnological approaches, such as in vitro production of haploid plants, virus-free plants through meristem culture, micrografting, protoplast fusion for somatic hybridization, induction of mutations and somaclonal variation, and genetic transformation have been employed for the improvement of trees. Micropropagation and genetic manipulation in vitro will play an important role, especially in forest biotechnology and horticulture, during the next decade.

This volume, *Trees III*, like the previous ones (*Trees I* and *Trees II*, published in 1986 and 1989 respectively) is special in its approach. It deals with the case histories and biotechnology of individual fruit, forest, and ornamental trees, and projects the present state-of-the-art, with particular reference to in vitro propagation. It comprises 28 chapters on the biotechnology of trees, contributed by international experts, and deals with the importance, distribution, conventional propagation, micropropagation, and a review of tissue culture studies with special focus on recent advances in in vitro culture and genetic manipulation of forest, fruit, and ornamental trees. The trees included in this volume are black cherry, sour cherry, pomegranate, loquat, *Ficus*, yellow poplar, horse chestnut, Judas tree, linden tree, saskatoon, Taiwan sassafras, plane tree, rattans, bamboos, Engelmann spruce, White spruce, larches, Hinoki cypress, Western red cedar, and various types of pines, i.e., Jack, Caribbean, Eldarica, slash, egg-cone, maritime, ponderosa, eastern white, and loblolly pine. Modern biotechnological approaches have implications in the mass propagation, biomass energy production, induction of genetic variability, and the conservation of germplasm. This book is expected to be of special interest to advanced students, teachers, and research scientists in plant biotechnology, forestry, horticulture, botany, and genetics.

New Delhi, June 1991

Professor Y. P. S. BAJAJ
Series Editor

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