

About the Book

During the last three decades use of integrated techniques particularly of cell and molecular biology has revolutionized our knowledge on pollen biology. These advances have led to the development of effective and viable biotechnologies for crop production and improvement. Presently information in these areas is scattered over a large number of articles in journals of different disciplines. This book, for the first time, presents a coherent account of the entire area of pollen biology and biotechnology. Over 1500 references cited provide comprehensive literature particularly of recent advances. Both structural and functional aspects have been integrated on pollen development, morphology, aeropalynology, viability and vigour, sterility, germination, and pollination, pollen-pistil interaction, self- and inter-specific incompatibility. New advances made in understanding pollen tube growth, in vitro fertilization using isolated gametes, and genes and gene products involved in self-incompatibility and pollen allergy have been elaborated. Management of honey bees for pollination services, advantages and limitations of various pollination control systems for production of hybrid seeds, effective techniques available for the breeder to transfer genes across species limits, induction of haploids through use of genetic lines, chromosome elimination and anther/microspore culture are adequately covered. Use of pollen for gene transfer, as food supplement and in medicine are also included. The book will be useful for teachers, students and researchers from a variety of disciplines such as reproductive biology, biotechnology, aeropalynology, plant breeding, horticulture and forestry.



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