

ADVANCES IN PLANT BIOTECHNOLOGY

For centuries humankind has made improvements to crop plants through selective breeding and hybridization using spontaneous or controlled pollination. Plant biotechnology is an extension of this traditional plant breeding with one very important difference: it allows the transfer of a greater variety of genetic information in a more precise and controlled manner. Unlike traditional plant breeding, which involves crossing of thousands of genes, plant biotechnology allows the transfer of only one or a limited number of desirable genes. Such more precise technology allows plant breeding to develop crops with specific beneficial traits while avoiding any undesirable background. Some of these beneficial traits in new plant varieties display resistance to pests, insects, disease and weeds. Others provide quality improvements, such as tastier fruits and vegetables, processing advantages and nutrition enhancements. These crop improvements help supply healthy food in greater abundance and protect our environment for future generations. Today's biotechnology is being used as a useful tool to produce plants with new fruits that benefit agricultural production, the environment and human nutrition and health. The purpose of this issue is to provide latest information about plant biotechnology and to give examples of its use. The volume comprises of 18 chapters contributed by the internationally recognized experts from different parts of the world, all of whom have deep knowledge and research experience in plant biotechnology. The book covers current status of knowledge about multiple gene transfer, RNAi technology, whisker-mediated transformation, unintended effects in transgenic plants, use of chloroplast genome in crop improvement, engineering crops for abiotic and biotic stress tolerance, biotechnological improvements in specific crops including *Allium*, *Citrus*, cotton, sugarcane, *Phellodendron*, *Rhubarb*, Soybean and conifers. The volume is relevant and timely in view of the rapidly expanding international trade of biotechnology for crop improvements. This may also facilitate researchers on novel approaches for funding and management of various issues in crop biotechnology on a global scale.



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