

Plant Gene Silencing

Mechanisms and Applications

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Plant gene silencing through RNA interference is a crucially important phenomenon in gene expression and epigenetics, and one of the most exciting discoveries of recent decades. This book brings together international experts to describe the science underlying it, and its applications in producing better plants. The book examines the detail of how transgenes induce post-transcriptional or transcriptional silencing. It also describes which genes are involved in these processes, and the production of small RNA molecules and their movement within plants. The involvement of viruses in silencing and factors affecting the hybrids used in agriculture are covered, along with silencing in fungi and algae. Strategies to produce artificial small RNAs are explained, with their use in improving industrial traits, adding nutritional benefits, removing allergens and other valuable factors for consumers. The book also explains how gene silencing can be used to protect plants against bacterial and viral pathogens, weeds and pests. Plant gene silencing is a fascinating biological subject with enormous potential and this is the first book to bring those aspects together.

Key features:

- Balanced approach to both mechanisms and applications for plants.
- Detailed chapters on specific opportunities to create better plants.
- Coverage of production and consumer traits.

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