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| Titolo | Advances in Orchid Biology, Biotechnology and Omics / / edited by Pragya Tiwari, Jen-Tsung Chen |
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| Descrizione fisica | 1 online resource (293 pages) |
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| Soggetti | Botany<br>Plant biotechnology<br>Metabolism, Secondary<br>Plants<br>Plant Science<br>Plant Biotechnology<br>Plant Secondary Metabolism |
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| Nota di contenuto | 1. Understanding the molecular mechanisms of orchid mycorrhizal symbiosis from genetic information -- 2. Breeding of orchids using conventional and biotechnological methods: Advances and future prospects -- 3. Biotechnological interventions and societal impacts of some medicinal orchids -- 4. Gene expression profiling in orchid mycorrhizae to decipher the molecular mechanisms of plant-fungus interactions -- 5. Exploring the potential of in vitro cultures as an aid to production of secondary metabolites in medicinal orchids -- 6. Ethnomedicinal uses, phytochemistry, medicinal potential and biotechnology strategies for the conservation of orchids from the Catasetum genus -- 7. Diversity and antimicrobial potential of Orchidaceae-associated fungal endophytes -- 8. Asymbiotic seed germination in terrestrial orchids: Problems, progress and prospects -- 9. Progress and prospect of orchid breeding: An overview. |
| Sommario/riassunto | This book provides comprehensive insights into the existing and emerging trends in orchid biology based on the findings of omics, high-throughput technology, biotechnology, molecular breeding, and |

genome editing approaches in orchids. It illustrates molecular mechanisms of orchid mycorrhizal symbiosis according to the recent achievements of transcriptomics and bioinformatics studies which accelerate the progress of orchid research with the aid of their high-throughput tools. In this book, a comprehensive view of orchid breeding was presented, and it includes fundamental methods as well as advanced strategies through the combination of several technologies such as genetic engineering, omics, computational biology, and genome editing. These resulting knowledge and tools are highly beneficial for obtaining novel and fascinating varieties in the orchid market which is a competitive industry of global trade. Another interesting content is the focus on the production of orchid bioactive compounds and their values in the field of ethnomedicine. Their sources chiefly came from secondary metabolites and can be enriched through elicitors and produced more efficiently by improved tissue culture protocols and bioreactors. In this edited collection, we provided space for presenting an updated review of in vitro seed germination which is a routine technology for well-trained researchers but can give a complete demonstration for the potential audiences including growers and research beginners. This book collects refined knowledge from a broad source of scientific literature by experts in the field of orchid research and surely is an adequate reference and textbook for students, teachers, and researchers. It includes methods and applications of orchid breeding technology which would gain high attention from growers, breeders, and the related fields of agriculture.