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Nota di contenuto	Chapter 1: An introduction to biotechnology driven advances for silkworm improvement and sustainable perspectives -- Chapter 2: Silkworm Genomics: A novel tool in Silkworm Crop Improvement -- Chapter 3: An insight into transcriptomics of the mulberry silkworm , Bombyx mori:A review -- Chapter 4: Proteomics of Silkworm, Bombyx mori L: Recent progress and future prospectus -- Chapter 5: Epigenomics: A Way Forward From Classical Approach -- Chapter 6: Applications of Marker Assisted Selection in Silkworm Breeding For Abiotic Stress Tolerance -- Chapter 7: Mutational Breeding in Bombyx mori: Current Trends and Future Avenues -- Chapter 8: Application of Marker Assisted Selection in silkworm breeding for disease resistance -- Chapter 9: Engineered disease resistance silkworm using genome editing -- Chapter 10: Biotechnological Approaches in Wild Silk Culture -- Chapter 11:An overview of climatic and genetic influences on emergence of Antheraea spp -- Chapter 12:The Journey of

Biotechnology in Tasar Sericulture: Past Experiences, Current Strategies, and Future Horizons -- Chapter 13:Silkworm databases and research tools: A comprehensive guide for advancing sericulture research -- Chapter 14:The Application of Biostatistical Techniques in Silkworm Breeding & Improvement -- Chapter 15: Dipteran parasitoid – silkworm interaction: Application of genomic and proteomic tools in host-parasitoid communication -- Chapter 16: Biotechnological approaches for diagnosis of silkworm diseases -- Chapter 17: Implications of Bioassay in Biotechnology with relevance to Silkworm Breeding -- Chapter 18: Application of Sericin in Food Industries and Coating of Fruits and Vegetables -- Chapter 19: Biomedical Applications of Silk Worm Sericin.

Sommario/riassunto

The book introduces readers to the latest developments in biotechnological methods used for improving the cultivation of silkworms. The text focuses on implementing biotechnological approaches, ranging from basic to advanced techniques, on enhancing silk production, increasing abiotic stress resilience, improving disease tolerance, and developing resistance in silkworm crops. With the current climate crisis and growing demand for high-quality silk, biotechnological applications have become essential in addressing the urgent need to increase silk production. The field of sericulture has made significant breakthroughs, such as identifying DNA markers, linkage association, genome-wide association studies, generating mutants, and introducing transgenic silkworms. Developing silkworms with improved cocoon yield and disease resistance is crucial to boost silk production. The book covers fundamental principles and recent advancements and delves into various methodologies employed in sericulture for improving silkworm crops. These methodologies include next-generation sequencing for DNA sequencing, using molecular markers to enhance abiotic stress tolerance (specifically high temperature and humidity conditions), expression analysis, RNA interference, gene knockout approaches to bolster disease resistance, and transcriptomics to enhance economically significant parameters such as silk content. The book explains these topics in detail and includes contemporary research appraisals, extensive discussions, and an evaluation of the benefits and risks associated with the use of biotechnological tools. This book serves as an invaluable reference for researchers and academics in biotechnology, molecular biology, and sericulture while also serving as an informative starting point for budding researchers.
