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Nota di contenuto	Chapter 1. Essential oils: From traditional to modern-day applications with special reference to medicinal and aromatic plants in India -- Chapter 2. Extraction and chemotypic standardization of plant essential oils with special reference to phytochemical genomics -- Chapter 3. Antioxidant Activity of Essential Oils: A Mechanistic Approach -- Chapter 4. Mechanistic investigation on antibacterial activity of essential oils against resistant bacteria species -- Chapter 5. Essential oils against fruit spoilage fungi -- Chapter 6. Essential oils: A Natural weapon against Mycotoxins in Food -- Chapter 7. Essential oils against the bio-deteriorating insect pests of stored food commodities -- Chapter 8. Application of plant essential oils in pharma and aroma industries -- Chapter 9. Application of microbial consortia and biofertilizer to improve the quality and yield of essential oils in aromatic plants -- Chapter 10. Effect of environmental factors on essential oils biosynthesis, chemical stability,and yields -- Chapter 11.

Role of biotechnology and combinatorial chemistry approaches in molecular assisted engineering of plant volatile compounds -- Chapter 12. Application of mathematical modelling and statistical approaches to boost the industrial application of plant-volatiles -- Chapter 13. Prospects of bioinformatics and data acquirement tools in boosting the application of phytochemicals in food sciences -- Chapter 14. Recent advances in nanotechnological approaches to enhance the industrial application of essential oils and their application in food packaging.

Sommario/riassunto

This book is a comprehensive collection of information on essential oils and their industrial application. It provides reader with a systematic and advanced knowledge of the role of essential oils as natural preservatives and therapeutic agents. Food and pharmaceuticals are two important pillars of human civilization. Plant essential oils and their volatile compounds have been used for preservation as well as for the treatment of human illness for long as traditional practices in biodiversity-rich countries. This book deals with the potential uses of essential oils against insect pests and spoilage microbes of agri-food commodities such as pulses, cereal, fruits, and their shelved products. It also highlights the molecular-assisted engineering of plant essential oils, the pharma-kinetic facet, and their potential in pharmaceutical and aromatherapy. In addition, the book covers recent advances in science and technology such as extraction methods, metabolomics, phytochemical genomics,bioinformatics, conformational dynamics, mathematical modeling, and nanotechnology application. This book is of interest to teachers, researchers, food scientists, capacity builders, and policymakers. Also, it serves as an additional reading material for undergraduate and postgraduate students of agriculture, food, and pharmaceutical sciences.