



Dr. Swati Sharma

Dr. Swati Sharma is an Assistant Professor in the Department of Biosciences at Integral University, Lucknow, with over a decade of research experience in biological sciences. Her expertise focuses on plant-microbe interactions and postharvest management. She completed her doctoral research at CSIR-National Botanical Research Institute and the Department of Botany, University of Lucknow. Dr. Sharma has a strong publication record, including 24 research papers in international journals, one edited book, 12 book chapters, and two patents. She has successfully supervised nine Ph.D. scholars in microbiology and biotechnology, making significant contributions to research and academic mentorship.

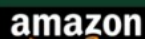
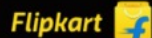


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Dr. Amita Dubey is an Assistant Professor in the Department of Biosciences at Integral University, Lucknow. She earned her Ph.D. from CSIR-Central Institute of Medicinal and Aromatic Plants and served as a Women Scientist at CSIR-National Botanical Research Institute. With over a decade of experience in research and teaching, her work focuses on cytochrome P450 monooxygenases and their role in the biosynthesis of therapeutically important secondary metabolites. Her research has advanced the understanding of metabolite pathways in medicinal plants and their application in pathway engineering. She has also contributed to studies on histone acetylation in improving cotton fiber yield and quality. Dr. Dubey has led two projects funded by the


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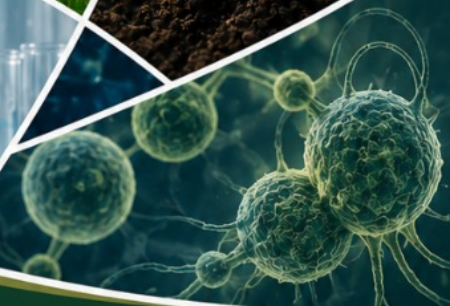


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FRONTIERS IN BIOLOGICAL SCIENCES: RECENT ADVANCES AND INNOVATIONS-VOL I

Frontiers in Biological Sciences: Recent Advances and Innovations

— Vol I —



Dr. Swati Sharma
Dr. Amita Dubey

Frontiers in Biological Sciences: Recent Advances and Innovations-Vol I

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Role of Phytohormones as Elicitors in Plant Secondary Metabolite Synthesis

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Abstract

Phytohormones play a crucial function in regulating various physiological processes in plants, including the biosynthesis of secondary metabolites. This chapter explores the intricate mechanisms by which phytohormones act as elicitors, stimulating the biosynthesis of secondary metabolites which are essential for plant defense and adaptation. The diverse classes of phytohormones- such as cytokinins, ethylene, auxins, gibberellins, abscisic acid, and jasmonates are discussed with an emphasis on their regulatory functions in plant defense, growth and development. Additionally, the specific roles of these phytohormones as elicitors in secondary metabolite synthesis pathways have also been discussed. Moreover, this chapter explores the interactions between different phytohormones and their synergistic or antagonistic effects on secondary metabolite synthesis. Understanding the intricate interplay between phytohormones and secondary metabolites not only sheds light on plant physiology but also has significant implications for agriculture, pharmaceuticals, and biotechnology. This chapter serves as a valuable resource for researchers who possess keen interest in unravelling the complexities of plant biochemistry and harnessing the potential of phytochemicals for various applications.