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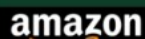


Dr. Amita Dubey

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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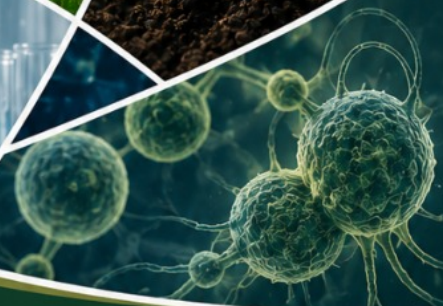


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FRONTIERS IN BIOLOGICAL SCIENCES: RECENT ADVANCES AND INNOVATIONS-VOL I

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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Recent Advances in Sustainable Agriculture: Biochemical Conversion of Agriculture Wastes to Biofuels

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Abstract

Increasing global warming affects mankind drastically, even other living beings face severe problems. Continuous usage of fossil fuels leads to air pollution, which contains several harmful particles that can cause negative impacts on the environment and the health of humans. Burning fossil fuels and utilizing them in different activities also lead to their depletion from the earth. To overcome such problems and focus on sustainability, many countries are now utilizing agricultural wastes to produce second-generation biofuels, which act as an alternative to fossil fuels. Conversion of these agricultural wastes to various biofuels is done through multiple approaches, out of which the main and environment-friendly approach is the biochemical conversion of biomass that can produce bioethanol and biogas via fermentation and anaerobic digestion, respectively. Biochemical conversion is a multi-step process with low to zero emission of pollutants.

Keywords: Agriculture wastes; Biochemical conversion; Fermentation; Bioethanol; Anaerobic Digestion; Biogas