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Bioconversion of Fruit Peel Waste into Value Added Products

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Fruit peels are a class of agro wastes that may be regarded as a non-product flow of raw materials whose economic values are less than the cost of collection and recovery for reuse; and are therefore discarded. However, in spite of their pollution and hazard aspects, in many cases, fruit processing wastes have a good potential for conversion into useful products of higher value as by-product, or even as raw materials for other industries. Fruit peels contain an appreciable amount of carbohydrates which could be utilized by microorganisms producing economically important biopolymers (Polyhydroxyalkanoates), Single Cell Proteins and other valuable products with potential application in food, agriculture, packaging, and pharmaceutical industries. Polyhydroxyalkanoates are class of bioplastics exclusively synthesized as intracellular carbon and energy storage compounds by wide range of microorganisms and are reported to be completely degraded in to benign compounds both aerobically and anaerobically. SCPs are protein rich microbial biomass or total proteins extracted from microbial cell that could be used as protein supplement in food and feed. Fruit peel wastes could be thus considered as valuable by-product if appropriate technical means are used to increase the value of the subsequent products to exceed the cost of reprocessing. Thus the present research highlights easily adoptable biotechnological methodologies for recycling, reprocessing and eventual utilization of fruit peel waste for biopolymer and SCP production rather than their discharge to the environment which might cause detrimental environmental effects.

Biography

Preethi Kathirvel currently serves as Assistant Professor in the Department of Microbial Biotechnology, Bharathiar University, Tamil Nadu, India. She was awarded the PhD degree from Bharathiar University, for her work on "Studies on Antioxidant and Pharmacological Activities of *Muntingiacalabura* Fruits". She has published 22 research articles, 2 book chapters and edited 2 books in Antioxidants and Waste Management field. Her thrust area of research includes antioxidants, biopolymers and biosurfactants, solid waste management and nanobiotechnology. She is a Life Time Member in Association of Microbiology and Society of Biological Chemist, India.

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