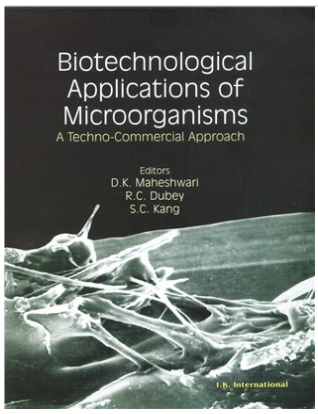
Book Information Sheet



Biotechnological Applications of Microorganisms: A Techno-Commercial Approach , 1/e

D K Maheshwari, R C Dubey & S C Kang

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About the Book

A large number of microbes have been exploited commercially in multifarious areas such as production of industrially viable products, organic chemicals, pharmaceuticals, recovery of metals, improvement and maintenance of environmental quality, and pest control. The book embodies twenty review articles contributed by the subject experts from India, Japan and South Korea. The articles fall under the three categories; agriculture microbiology, industrial microbiology, and bioremediation. The Psychrophiles hold many biological secrets such as biochemical limits to macromolecular stability and the blueprints for constructing stable macromolecules. Lactic acid bacteria known for their role in fermentation, economics, and systematics have been dealt with in great detail. Biotechnological applications of pectinases in general and alkaline pectinases in particular play a significant role in industries. Production, characteristics and applications of microbial alkaline pectinolytic enzymes have been elaborated. Nowadays, semi-synthetic ergot alkaloids are widely used as a potential therapeutic agent. Microbial production of glucans, functional organisation and their industrial significance have been systematically reviewed. Bioactive exopolysaccharides production from mushrooms have gained importance in recent years. Production and characterisation of exopolysaccharides and conversion of unsaturated fatty acids into value-added hydroxyl fatty acids by using microorganisms is being done in a wide range of industrial products. Enhancing the microbial production of 1,3-propanidial and its application highlights the commercial exploitation of potential microorganisms. Aldehyde and organic acid production by using oxydases and their derivatives have been advantageous for industries. Some chapters are devoted to the potential entomopathogenic fungi for management of pests, biotechnological applications of fusaria, microbial metabolite-mediated biocontrol of soil-borne plant pathogens, bioremediation of heavy metals, organochlorine and organophosphate pesticides. Although bio-inoculants are eco-friendly and are being used too but reviewers have emphasized the constraints in commercial bio-inoculant production and their quality assurance.

Salient Features

- Contains 20 review articles discussing majorly in the areas of agriculture, microbiology, industrial microbiology, and bioremediation.
- The articles focus on the commercial application of the microorganisms to industries.
- Amply illustrated by diagrams and photomicrographs.

Table of Contents

- Bioremediation of Agrochemicals and Heavy Metals in Soil
- Application of Microorganisms for Bioremediation of Organochlorine and Organophosphate Pesticides
- Fungal biosorbents: A benign alternative for removal and recovery of heavy metals from wastewater

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