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Book Review

Biotechnological Avenues for Entrepreneurship Development—A Compendium-Focus: Women and Rural Development

J.K. Arora, S.S. Marwaha (Eds.); Punjab State Council for Science and Technology (PSCST), Chandigarh, India, 2002, xxxii + 142 pages, ISBN 81-900603-4-1

Biotechnology is an area of science with enormous potential. The Punjab State Council for Science and Technology (PSCST) has been making efforts with respect to the promotion of biotechnological innovations relevant to the socio-economic developmental needs of the rural areas of Punjab. A national workshop to evolve region specific inter-institutional biotechnological projects for the economic empowerment of society was organised, the aim of the workshop being to facilitate biotechnology information exchange that could be translated into practically viable projects for the benefit of the rural population, especially women. This compendium details the technology profiles of salient biotechnological applications having replication potential in such rural areas. The potential of biotechnology and the techno-economic viability of specific technologies are presented, using some of the successful initiatives taken up in different parts of India to demonstrate the potential of biotechnology for socio-economic development.

Specific topics covered include production of blue green alga *Spirulina* for use as a food/health supplement, mushroom spawn production, *Pleurotus* cultivation, waste recycling and composting, solid waste management through vermiculture biotechnology, and management of sullage through duckweed technology. *Spirulina* is a nutrient rich material with a wide range of application as a food supplement and as a therapeutic agent. Out of over 2000 species of fungi, only 40–50 are reported to be cultivated and consumed safely throughout the world. Approximately 80% of world production is comprised of four major types, namely *Agaricus bisporus* (white button mushroom), *Pleurotus* species (Dhingri), *Volvariella* species (Chinese straw mushrooms) and *Lentinus edodes* (Shiitake). Vermiculture biotechnology describes the use of earthworms as versatile natural bioreactors for efficient biodegradation of organic solid wastes, producing a rich manure within 40–45 days under aerobic conditions. Disposal of untreated sullage water in rural areas causes serious health hazards in India as there is no proper drainage system. Duckweed, a free floating aquatic plant, has the ability to bioaccumulate a high % of nutrients, dissolved solids, and heavy/toxic elements present in waste water. Other topics presented include commercial production of algal biofertilisers and biopesticides, medicinal plants cultivation, bee keeping and honey markets, water pollution biomonitoring, and bioreclamation of alkali soils.

Each practical initiative is presented in an informative manner, with many colour photographs, flow charts, figures, etc. providing a clear overview of each process. In summary, this volume provides an excellent insight into the diverse world of biotechnology as it is being applied in a relatively low technology state to benefit rural communities in a developing country. It will thus be of use to individuals with interests, both commercial and academic, in areas of applied biotechnology and biochemistry.

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