

PLANT BIOTECHNOLOGY FOR SUSTAINABLE PRODUCTION OF ENERGY AND CO PRODUCTS BIOTECHNOLOGY IN AGRICULTURE AND FORESTRY

Jan 18, 2021



[Plant Biotechnology For Sustainable Production Of Energy And Co Products Biotechnology In Agriculture And Forestry](#)

The successful use of plant biomass for the sustainable production of energy and co-products such as chemicals is critically important for the future of humanity. Large scale exploitation of biomass is needed to decrease the production of greenhouse gases and help mitigate global warming, to provide energy security in the face of declining petroleum reserves, to improve balance of payment imbalances, and to spur local economic development. This volume discusses such uses of plant biomass as ...

[Plant Biotechnology for Sustainable Production of Energy...](#)

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Plant Biotechnology for Sustainable Production of Energy and Co-products (Biotechnology in Agriculture and Forestry) by PETER N. MASCIA ISBN 13: 9783642134395 ISBN 10: 3642134394 Unknown; Springer; ISBN-13: 978-3642134395

[Plant Biology for Sustainable Production](#)

Both the waste from petrochemical plastic production plants and the many tonnes of non-biodegradable plastic that is thrown away daily are huge problems for the environment. New technologies to incorporate biology in the production of plastics could offer a more sustainable alternative. In Amsterdam, Avantium is developing methods to produce 100% recyclable bioplastics from agricultural and ...

[Biotechnology: Toward a Sustainable Future](#)

Plant Biotechnology and Biofuels. The US Department of Agriculture (USDA) has estimated that one billion dry tons of biomass per year are needed to replace 30% of transportation fuels with biofuels (7). According to an USDA study, this amount of biomass could be produced by 2050, with feasible technological advances while still meeting food, fibre and export demands. The biomass would be ...

[Plant Biotechnology](#)

Plant products of biotechnology have been available in the market for 23 years in 2018. These modified crops look like their traditional counterparts, but they possess special characteristics that make them better. These crops offer several benefits both farmers and consumers. Farmers gain higher crop yields and have increased flexibility in ...

[Biotechnology—a sustainable alternative for chemical industry](#)

Industrial biotechnology, also known as white biotechnology, uses enzymes and micro-organisms to make biobased products in sectors as diverse as chemicals, food and feed, healthcare, detergents, paper and pulp, textiles and energy. Agricultural products, biomass and organic waste, including food processing

[Biotechnology in Agriculture and Forestry: Vol.66 Plant ...](#)

Plant biotechnology, in the sense of the application of recombinant DNA techniques to crop improvement, or the production of valuable molecules in plants, is still a relatively new endeavour. Plants are already used as sources of an immense array of useful molecules. These, especially the starches, proteins and oils in seeds, are raw materials for most of our food and feedstuffs. Plants are ...

[Investing in green and white biotech](#)

Yet, the general resistance to genetically modified organisms might have done plant biotechnology a favour in the long run, by forcing it to adopt more-rigorous procedures for efficacy and safety in line with the pharmaceutical industry. This could, in turn, lead to renewed vigour for plant science, with the promise of developing not only food crops that deliver benefits to consumers and ...

[Role of biotechnology in sustainable agriculture and rural ...](#)

Plant Biotechnology. Plant biotechnology is a set of techniques used to adapt plants for specific needs or opportunities. Situations that combine multiple needs and opportunities are common. For example, a single crop may be required to provide sustainable food and healthful nutrition, protection of the environment, and opportunities for jobs and income. Finding or developing suitable plants ...

[Plant Biotechnology](#)

Sustainable production and consumption can be defined as production and use of products and services in a manner that is socially beneficial, economically viable and environmentally benign over their whole life cycle. The journal aims to provide a leading platform for publishing high-quality interdisciplinary papers on research and practice in this emerging field. It looks uniquely at the ...

[Biotechnology, Biodiversity, and Sustainable Agriculture ...](#)

Important issues in using biotechnology in agriculture and forestry are for example to enhance productivity and stress resistance of crops and trees, mainly due to restricted land area and increasing environmental pressures, and to develop carbon dioxide-neutral production systems for sustainable production of fiber/biomass and biofuel with biotechnological methods (Polle et al., 2013 ; Polle and Chen, 2015).

[Applications of Biotechnology for Sustainable Development](#)

Sustainable manufacturing is the creation of manufactured products through economically-sound processes that minimize negative environmental impacts while conserving energy and natural resources. Sustainable manufacturing also enhances employee, community and product safety. The Business Case for Sustainable Manufacturing. A growing number of companies are treating "sustainability" as an ...

[Renewable energy | Biotechnology](#)

Plants, Genes, and Agriculture Sustainability through Biotechnology. First Edition. Edited by Maarten J. Chrispeels and Paul Gepts. Sinauer Associates is an imprint of Oxford University Press. Presents biological, economic, and sociocultural issues at an introductory level

[Cellular agriculture — industrial biotechnology for food ...](#)

In agriculture, livestock, veterinary products, and aquaculture, biotechnology has improved animal feed, produced vaccines for livestock, and improved diagnostics for detecting diseases such as BSE, foot and mouth disease, and salmonella. It has also enabled the use of enzymes for more efficient food processing and improved the breeding of plants to obtain desired characteristics. In ...

[Modern Applications of Plant Biotechnology in ...](#)

Production of biogas is one of the largest biotechnology processes operated worldwide besides treatment of water (both wastewater and water for consumption), and has moved from being an activity to reduce the sludge volume at wastewater treatment plants to being used in industrial plants treating a variety of different substrates: municipal solid waste, food wastes, waste material from ...

[Agricultural Biotechnology](#)

Biotechnology for Biofuels has a new subtitle: 'Advancing biological production of fuels, chemicals, and biomaterials'.The change comes with an updated aims and scope to welcome a greater diversity of research and more explicitly encompass biotechnological advances to produce chemicals and biomaterials from carbonaceous feedstocks.

[Designing Plants To Meet Feedstock Needs](#)

Germany is one of Europe's most prominent industrial biotechnology producers, with more than 500 biotech companies, 10 per cent of which are engaged in agriculture and 'green' technologies. 25 Germany also devotes significant attention to cutting national emissions and the transition towards sustainable energy, aiming to increase renewable electricity to 80 per cent of the total usage by ...

[Engineering Advantages, Challenges and Status of Grass ...](#)

Biotechnology Reports covers all aspects of Biotechnology particularly those reports that are useful and informative and that will be of value to other researchers in related fields. Biotechnology Reports loves ground breaking science, but will also accept good science that can be of use to the biotechnology community. The journal maintains a high quality peer review where submissions are ...

[plant biotechnology biobased products en.doc](#)

A variety of bioresources are present on the planet earth, which mainly includes agricultural crops, waste from agriculture, forest and various industries, marine resources like fishes and aquatic crustaceans, weeds, grasses, etc. All these bioresources are of huge significance and can be used as raw material or feedstocks for the production of a wide range of valuable products that are ...

[Bioproducts](#)

Biotechnology is the integration of the new techniques emerging from modern biotechnology with the well-established approaches of traditional biotechnology. It is a set of enabling techniques for bringing about specific human-made changes in DNA, or genetic material, in plants, animals and microbial systems, leading to useful products and technologies. Biotechnology promises to make a ...

[Environmental Engineering and Biotechnology](#)

Agricultural biotechnology, also known as agritech, is an area of agricultural science involving the use of scientific tools and techniques, including genetic engineering, molecular markers, molecular diagnostics, vaccines, and tissue culture, to modify living organisms: plants, animals, and microorganisms. Crop biotechnology is one aspect of agricultural biotechnology which has been greatly ...

[Gene Flow in Genetically Engineered Perennial Grasses ...](#)

Sustainable Biotechnology. Mineral oil still constitutes the most important source of liquid fuels, but is also an important raw material for the production of plastics, chemicals, pharmaceuticals, etc. During the coming decades we need to use alternative sustainable resources to compensate for the forthcoming depletion of mineral oil, but also to deal with greenhouse gases and the associated ...

[Industrial Biotechnology: Sustainable Growth and Economic ...](#)

Biotechnology also has vast scope in agriculture for the production of plants that are resistant to insects, weeds and plant diseases. This can be achieved by the introduction of GOIs using genetic engineering. Selective breeding of plants and animals was practiced in the introduction of GOIs without awareness of the basic concepts of biotechnology. In this procedure organisms with desirable traits were ...

[What About Agricultural Biotechnology?](#)

"Future of Plant Biotechnology" June 21- 22, 2005 — ABSTRACTS — INTRODUCTION The Need for a Global Long Term Strategy in Plant Biotechnology MARC ZABEAU Department of Plant Systems Biology Ghent University – VIB Belgium While the genomics revolution has considerably expanded our understanding of plant biology, and will continue at an ever increasing pace, we are only now starting to ...

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