+357 96 030922
info@marketpublishers.com

Plant Biotechnology Market by Product Type (Crop Protection & Nutrition Solution Products, Biotech Seed & Traits, Synthetic Biology Enabled Products), Technology Type, Crop Type, End User, and Region - Global Forecast to 2030

https://marketpublishers.com/r/P2E6ABE351A0EN.html
Date: April 2025
Pages: 469
Price: US$ 4,950.00 (Single User License)
ID: P2E6ABE351A0EN

Abstracts

The global market for plant biotechnology is estimated to be valued at USD 51.73 billion in 2025 and is projected to reach USD 76.79 billion by 2030, at a CAGR of 8.2% during the forecast period. The plant biotechnology market has emerged as a critical sector within the broader agricultural and life sciences industries, driven by the increasing global demand for sustainable food production, climate-resilient crops, and innovative biopharmaceutical solutions. Plant biotechnology involves the use of genetic engineering, molecular markers, and tissue culture techniques to enhance crop traits, improve yield, and develop novel plant-based products. The market has witnessed significant growth over the past decade, fueled by advancements in CRISPR-Cas9 gene-editing technology, rising investments in agricultural biotechnology, and the pressing need to address food security challenges posed by a growing global population.

Disruption in the plant biotechnology market: Market disruptions in the plant biotechnology industry are driven by rise in seed replacement rate, High adoption of biotech crops, Growing demand for high-value crops, Use of plant growth regulators to combat climatic changes. Innovations in biotechnology hold significant potential to boost agricultural productivity and quality, ultimately enhancing farmers' incomes globally. Moreover, plant biotechnology addresses environmental concerns by reducing reliance on chemical pesticides.

By product, biofertilizers subsegment in the biopesticides segment to hold significant

+357 96 030922
info@marketpublishers.com

market share during forecast period

Biofertilizers hold the useful microbes that stimulate plant growth in the way of enhanced nutrient supply. These microbial components start the growth of plants and provide yields, thereby making biofertilizers a viable, eco-friendly substitute for chemical fertilizers. Farmers are increasingly adopting biofertilizers, particularly in soil-less culture systems such as hydroponics and controlled environment agriculture (CEA) systems such as vertical farm and greenhouses.

Nanotechnology is revolutionizing biofertilizers using nanoparticles to enhance the efficiency of nutrient delivery and nutrient uptake in plants. The technology enhances the availability of nutrients, avoids nutrient leaching, and promotes sustainable nutrient management. Compared to synthetic fertilizers that render soils sterile after a few years, biofertilizers improve soil fertility through atmospheric nitrogen fixation and solubilization of sparingly soluble phosphate in soils. They help the plant defend itself against abiotic stress.

The biofertilizer market has shifted towards a scientific focus, and accordingly, research and development expenditures have increased. The key developments are the use of non-legume crops, biopolymers, use of mycorrhiza, and microbiome research. Danish researchers in 2022 created Bluubalance, a liquid biofertilizer that increases yield by 20% and reduces carbon waste by 98%. Biofertilizers are becoming an important part of sustainable agriculture, maintaining plant health with minimal harm to the environment

“The pharmaceutical and biopharma end-user segment is projected grow at signifiant rate during the forecast period.”

The pharmaceutical and biopharma industries leverage plant biotechnology for the production of plant-derived vaccines, bioactive compounds, and genetically modified medicinal plants. Plants such as tobacco, rice, and safflower have been engineered to produce therapeutic proteins, monoclonal antibodies, and edible vaccines. The development of plant-based pharmaceuticals is gaining attention due to their cost-effectiveness, scalability, and reduced risk of contamination compared to traditional biopharma methods. Companies involved in plant-made pharmaceuticals (PMPs) include Medicago, Kentucky BioProcessing, and Protalix BioTherapeutics.

Biotech-enhanced plants like tobacco, rice, and maize are increasingly used as biofactories for producing pharmaceutical compounds due to their cost-effectiveness, scalability, and reduced risk of contamination compared to traditional cell culture

+357 96 030922
info@marketpublishers.com

systems. The development of plant-based biologics, including antibody therapies and enzyme replacements, has gained traction, offering new treatment avenues for diseases such as cancer, infectious diseases, and rare genetic disorders. Leading pharmaceutical and biopharma companies, along with biotech startups, are investing in plant-based expression platforms to accelerate drug production and enhance global healthcare accessibility. As demand for innovative biologics and cost-efficient biomanufacturing grows, plant biotechnology continues to play a crucial role in transforming the pharmaceutical industry.

Europe is expected to hold significant share in the plant biotechnology market.

Europe's plant biotechnology sector stands out as a vibrant and complex ecosystem, characterized by cutting-edge scientific innovation, rigorous regulatory frameworks, and a profound commitment to sustainable agriculture and environmental stewardship. This industry distinguishes itself from other global markets by uniquely blending advanced scientific research, ecological consciousness, and sophisticated regulatory oversight into a cohesive and forward-thinking approach.

The plant biotechnology landscape has undergone several transformations, driven by technological advances, environmental challenges, and a growing global need for sustainable agricultural innovations. European academic and research institutions have emerged as pivotal engines of this revolutionary domain. Renowned centers of excellence—including Germany's Max Planck Institute, the Netherlands' Wageningen University, and France's INRAE—are leading groundbreaking research in crop development, sustainable agricultural practices, positioning Europe at the cutting edge of agricultural science and sustainability.

In-depth interviews have been conducted with chief executive officers (CEOs), Directors, and other executives from various key organizations operating in the plant biotechnology market:

By Company Type: Tier 1 – 25%, Tier 2 – 45%, and Tier 3 – 30%

By Designation: Directors– 20%, Managers – 50%, Others- 30%

By Region: North America – 25%, Europe – 30%, Asia Pacific – 20%, South America – 15% and Rest of the World –10%

+357 96 030922
info@marketpublishers.com

Prominent companies in the market BASF SE (Germany), Bayer AG (Germany), Corteva Agroscience (US), Syngenta AG (Switzerland), FMC Corporation (US), UPL (India), Sumitomo Chemical Co. Ltd. (Japan), Nufarm (Australia), KWS SAAT SE & Co. KGAA (Germany), Pro Farm Group (US), Limagrain (France), STK Bio AG Technologies (Israel), Vestaron Corporation (US), Certis USA LLC (US), DLF Seeds (Denmark).

Other players include Rovensa Next (Spain), IPL Biologicals (India), Lallemand (Canada), Rizobacter Argentina S.A (Argentina), ENZA Zaden Beheer (Netherlands), Genica (Brazil), Kay Bee Bio Organics Pvt. Ltd. (India), Verdesian Life Sciences (US), BotanoHealth (Israel), Axeb Biotech (Spain) .

Research Coverage:

This research report categorizes the plant biotechnology market by technology type (genetic engineering, marker assissted breeding, genome editing, tissue culture, synthetic biology, other technologies), by crop type (cereals & grains, oilseeds & pulses, fruits & vegetables, other crop types), product (crop protection & nutrition solutions products, biotech seeds/ traits, synthetic biology enabled products), by end-user (seed companies, agricultural input suppliers, food & beverage industry, biofuel & biochemical companies, pharmaceutical & biopharma, government & research institutes), and region (North America, Europe, Asia Pacific, South America, and Rest of the World). The scope of the report covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of plant biotechnology market. A detailed analysis of the key industry players has been done to provide insights into their business overview, services, key strategies, contracts, partnerships, agreements, new service launches, mergers and acquisitions, and recent developments associated with the plant biotechnology market. Competitive analysis of upcoming startups in the plant biotechnology market ecosystem is covered in this report. Furthermore, industry-specific trends such as technology analysis, ecosystem and market mapping, patent, regulatory landscape, among others, are also covered in the study.

Reasons to buy this report:

The report will help the market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall plant biotechnology and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable

+357 96 030922
info@marketpublishers.com

go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (rise in seed replacement rate, High adoption of biotech crops, Growing demand for high-value crops, Use of plant growth regulators to combat climatic changes), restraints (Long approval period for new products, High R&D expenses on quality GM seed development), opportunities (Public-private partnerships in varietal development, Increasing use of molecular breeding technology, Increased production and yield of crops) and challenges (Unorganized new entrants with low profit to cost ratio, Lack of availability and access to high-quality plant biotechnology products) influencing the growth of the plant biotechnology market.

New product launch/Innovation: Detailed insights on research & development activities and new product launches in the plant biotechnology market.

Market Development: Comprehensive information about lucrative markets – the report analyzes the plant biotechnology market across varied regions.

Market Diversification: Exhaustive information about new services, untapped geographies, recent developments, and investments in the plant biotechnology market.

Competitive Assessment: In-depth assessment of market shares, growth strategies, product offerings, brand/product comparison, and product foot prints of leading players such as BASF SE (Germany), Bayer AG (Germany), Corteva Agroscience (US), Syngenta AG (Switzerland), FMC Corporation (US), UPL (India), and other players in the plant biotechnology market.

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

9 PLANT BIOTECHNOLOGY MARKET, BY CROP TYPE

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

12 COMPETITIVE LANDSCAPE

+357 96 030922
info@marketpublishers.com

13 COMPANY PROFILES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

15 APPENDIX

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Plant Biotechnology Market by Product Type (Crop Protection & Nutrition Solution Products, Biotech Seed & Traits, Synthetic Biology Enabled Products), Technology Type, Crop Type, End User, and Region - Global Forecast to 2030

Product link: https://marketpublishers.com/r/P2E6ABE351A0EN.html

Price: US$ 4,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/P2E6ABE351A0EN.html