

# **Global Agricultural Biotechnology Market Size Study, by Organism (Plants, Animals, Microbes), by Application (Vaccine Development, Transgenic Crops & Animals, Antibiotic Development, Nutritional Supplements, Flower Culturing, Bio-Fuels), and Regional Forecasts 2022-2032**

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## **Abstracts**

The global agricultural biotechnology market was valued at USD 141.2 billion in 2023 and is anticipated to expand at a CAGR of 7.1% from 2024 to 2032. The market growth is primarily fueled by technological advancements in gene editing techniques such as CRISPR-Cas9, which enable precise modifications to crops, enhancing their pest resistance, drought tolerance, and yield capacity. The increasing global demand for sustainable agricultural practices, the rising adoption of genetically modified crops (GMOs), and the need for reduced chemical pesticide usage are key growth drivers. Additionally, innovations in bioengineered crops, microbial solutions for soil enhancement, and vaccine development for livestock are significantly contributing to the industry's expansion.

The rapid integration of molecular biology tools, genetic engineering, and biotechnological innovations is transforming modern agriculture, enabling farmers to develop climate-resilient crops and improve agricultural efficiency. Furthermore, biotechnology in animal agriculture is gaining traction, as it allows for disease-resistant livestock, improved reproduction techniques, and optimized animal feed formulations. With increasing consumer awareness regarding food safety, nutrition, and sustainability, the demand for biotech-driven agricultural solutions is expected to witness steady growth over the forecast period.

The adoption of transgenic crops has been particularly high in North America and Asia-Pacific, where regulatory approvals have facilitated the commercialization of genetically engineered seeds and crop protection solutions. Additionally, Europe is witnessing a shift towards biotech-based organic solutions, with a growing emphasis on natural plant-breeding techniques and sustainable pest management. Government funding and R&D initiatives in China, India, and Brazil are also driving the adoption of agricultural biotechnology solutions, further propelling market growth.

Strategic collaborations between leading biotech firms and agricultural research institutes are fostering innovation, accelerating the commercialization of advanced agricultural biotechnology products. Companies are increasingly investing in R&D efforts to enhance crop productivity, mitigate environmental impacts, and develop bioengineered solutions for emerging agricultural challenges. With ongoing advancements in plant genetics, biopesticides, biofuels, and microbial solutions, the agricultural biotechnology industry is poised for significant expansion across diverse geographic regions.

#### Major Market Players Included in This Report:

BASF SE

Bayer AG

ADAMA Agriculture Solution

Corteva

Syngenta

Evogene

DuPont

Vilmorin

Isagro SPA

Benson Hill

KWS SAAT SE & Co. KGaA

Nufarm Limited

ChemChina

Performance Plants Inc.

Marrone Bio Innovations, Inc.

The Detailed Segments and Sub-segments of the Market are Explained Below:

By Organism:

Plants

Conventional Techniques

Established Genetic Modification

New Breeding Techniques

Animals

Conventional Techniques

Established Genetic Modification

New Breeding Techniques

Microbes

Conventional Techniques

Established Genetic Modification

New Breeding Techniques

### By Application:

Vaccine Development

Transgenic Crops & Animals

Antibiotic Development

Nutritional Supplements

Flower Culturing

Bio-Fuels

### By Region:

#### North America:

U.S.

Canada

#### Europe:

Germany

UK

#### Asia Pacific:

Japan

China

#### Latin America:

Brazil

Middle East and Africa:

South Africa

Years Considered for the Study:

Historical Year – 2022

Base Year – 2023

Forecast Period – 2024 to 2032

Key Takeaways:

Market Estimates & Forecast for 10 years from 2022 to 2032.

Annualized revenues and regional level analysis for each market segment.

Detailed analysis of geographical landscape with country-level analysis of major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of competitive structure of the market.

Demand-side and supply-side analysis of the market.

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