

\$115 billion: From GMOs to gene editing, agricultural biotechnology market poised to expand dramatically by 2028

[‘Agricultural Biotechnology: Emerging Technologies and Global Markets’](#) explores the dynamic intersection of cutting-edge biotechnological innovations and the global agricultural landscape. This concise overview delves into the transformative technologies reshaping farming practices, crop yields, and market dynamics. From genetically modified organisms to advanced gene editing techniques, this report provides a snapshot of the pivotal role biotechnology plays in shaping the future of agriculture and its far-reaching implications on global markets.

According to the latest research study, the demand for [Agricultural Biotechnology: Emerging Technologies and Global Markets](#) estimated to increase from \$79.9 billion in 2023 to reach \$119.6 billion by 2028, at a compound annual growth rate (CAGR) of 8.4% from 2023 through 2028.

This comprehensive report offers a meticulous overview of the global agricultural biotechnology market, providing invaluable insights into its diverse product categories and usage. The study presents definitive and detailed evaluations and projections of the worldwide agricultural biotechnology market, meticulously analysing regions, countries, and key market players. Within the market, product types are segmented into biotech seeds, biologicals, and biotechnology tools, further classified by their end uses in plants, animals, and microbes. Market size and estimations, presented in terms of value (\$ Millions), establish 2022 as the base year, with forecasts extending from 2023 to 2028. The report not only explores the global market but also delves into regional nuances, providing insights into market sizes at the product type and end-use levels. In addition, the study discusses major players in each regional agricultural biotechnology market, elucidates primary drivers, regional dynamics, and current industry trends. The report culminates with a meticulous focus on the vendor landscape, offering comprehensive company profiles of the key players, providing readers with a deep understanding of the market’s current landscape and future potential.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other ‘disruptive’ innovations. Subscribe to our newsletter.

[SIGN UP](#)

The biotechnology tools segment within the agricultural biotechnology market plays a pivotal role in revolutionizing farming practices and crop improvement. Biotechnology tools encompass a wide array of methodologies and techniques utilized for the manipulation and investigation of biological systems, primarily focusing on genetic and molecular aspects. These tools enable scientists and researchers to modify genes, identify specific traits, and develop new crop varieties with enhanced qualities. Examples of biotechnology tools include molecular breeding, a technique that involves identifying and selecting desirable traits at the molecular level, marker-assisted selection, which utilizes genetic markers to aid in the selection of desirable traits, and CRISPR-Cas9 Gene Editing, a precise gene-editing tool allowing scientists to modify specific genes within an organism. These tools are instrumental in improving crop yields, enhancing crop resistance to diseases and pests, and mitigating the environmental impact of

agriculture. In the Asia Pacific region, particularly in China, government support and initiatives have propelled the rapid growth of the agricultural biotechnology market. China's proactive approach to research and development, as well as its commercial adoption of genetically modified crops, has significantly contributed to the region's accelerated growth, making it a standout in the global agricultural biotechnology landscape.

Driving forces behind the Agricultural Biotechnology: Emerging Technologies and Global Market's growth comprise:

1. **Decreasing availability of agricultural land-** The decreasing availability of agricultural land poses a significant challenge to global food security and sustainable agricultural practices. As urbanization, industrialization, and population growth continue to expand, arable land is being lost to infrastructure development, commercial projects, and natural resource depletion. This trend not only limits the space for cultivating essential crops but also intensifies competition for fertile land among farmers and industries. The consequences of diminishing agricultural land are far-reaching, leading to increased pressure on existing farmlands, overuse of resources, and heightened environmental degradation. Farmers are forced to adopt intensive farming techniques, often relying on chemical inputs and unsustainable practices, further depleting the soil's fertility. Addressing this issue requires innovative solutions such as urban farming, precision agriculture, and sustainable land management practices, to optimize existing agricultural spaces and ensure long-term food production without compromising the environment. Additionally, policies promoting land conservation and responsible land use are essential to safeguarding the future of agriculture in the face of decreasing land availability.
2. **Rising cultivation of biotech-crops-** The rising cultivation of biotech crops signifies a transformative shift in modern agriculture, with far-reaching implications for global food production and sustainability. Biotech crops, genetically modified to exhibit desirable traits such as pest resistance, increased yield, or enhanced nutritional value, have gained widespread acceptance among farmers due to their potential to address critical challenges in agriculture. These crops not only contribute to higher yields, ensuring food security for growing populations, but also reduce the reliance on chemical pesticides, thereby promoting environmentally friendly farming practices. The adoption of biotech crops has also opened avenues for drought-tolerant varieties, enabling cultivation in regions prone to water scarcity. Moreover, biotech innovations have played a pivotal role in addressing malnutrition, with biofortified crops engineered to provide essential nutrients to populations facing dietary deficiencies. As agricultural biotechnology continues to advance, the rising cultivation of biotech crops stands as a testament to the industry's ability to enhance agricultural productivity, promote sustainable practices, and meet the global demand for safe, nutritious, and abundant food sources.
3. **Growing investment in agricultural biotechnology–** The growing investment in agricultural biotechnology reflects a burgeoning recognition of its pivotal role in shaping the future of agriculture and ensuring global food security. Investors, both public and private, are increasingly allocating resources to research, development, and commercialization of innovative biotechnological solutions. This heightened interest is fueled by the industry's potential to address pressing challenges, including climate change impacts, rising demand for food, and the need for sustainable farming

practices. These investments drive advancements in genetically modified crops, precision agriculture technologies, and biotechnological tools, fostering the creation of resilient crop varieties, improved agricultural practices, and increased productivity. Moreover, funding initiatives support the development of biofortified crops, aiding in the fight against malnutrition and enhancing the nutritional value of staple foods. The infusion of capital into agricultural biotechnology not only accelerates scientific progress but also fosters collaborations between researchers, entrepreneurs, and policymakers, paving the way for a future where innovative biotechnological solutions play a central role in global agriculture.

[This is an excerpt. Read the original post here](#)