

Next-Generation Seed Technologies Market Forecasts to 2034 – Global Analysis By Seed Type (Genetically Modified Seeds, Hybrid Seeds, Gene-Edited Seeds, Climate-Resilient Seeds and Other Seed Types), Trait Type, Technology, Crop Type, End User, and By Geography

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Abstracts

According to Statistics MRC, the Global Next-Generation Seed Technologies Market is accounted for \$18.0 billion in 2026 and is expected to reach \$46.5 billion by 2034 growing at a CAGR of 12.6% during the forecast period. Next-generation seed technologies involve advanced innovations in seed development aimed at improving crop productivity, resilience, and nutritional value. These technologies incorporate genetic engineering, genome editing, seed coatings, biological treatments, and precision breeding methods to enhance resistance against pests, diseases, and environmental stress. They also support improved germination rates, nutrient efficiency, and climate adaptability. Next-generation seeds play a critical role in addressing global food security challenges and sustainable farming objectives. Increasing demand for high-yield and climate-resilient crops is driving research and commercialization of innovative seed technologies across agricultural markets.

Market Dynamics:

Driver:

Rising food security concerns

Growing populations are putting pressure on agricultural systems to produce more with

fewer resources. Advanced seed technologies help improve crop yields and resilience. Governments and organizations are promoting innovation in seed development to ensure sustainable food supplies. Farmers are adopting improved seeds to combat climate change challenges. Biotechnology and genetic advancements are enhancing productivity.

Restraint:

Expensive seed development processes

Research and development require significant investment in biotechnology and testing. Smaller companies struggle to compete with larger players due to financial barriers. Regulatory approvals add further expenses and delays. Farmers in developing regions find premium seeds unaffordable. Limited affordability restricts widespread adoption. This factor slows down market penetration despite rising demand.

Opportunity:

Gene-editing technology advancements

CRISPR and other tools enable precise modifications to improve crop traits. Gene editing supports resistance to pests, diseases, and environmental stress. Innovation in seed genetics enhances nutritional value and sustainability. Partnerships between biotech firms and agricultural companies are driving breakthroughs. Affordable gene-edited seeds can attract mass-market adoption. This opportunity is expected to accelerate growth in seed innovation.

Threat:

Public resistance to modified seeds

Consumers in many regions remain skeptical about safety and environmental impact. Negative publicity around GMOs reduces acceptance. Regulatory bodies impose strict labeling and compliance requirements. Farmers may hesitate to adopt modified seeds due to social pressure. Advocacy groups often campaign against biotechnology in agriculture. This resistance creates barriers to mainstream adoption.

Covid-19 Impact:

Covid-19 had a mixed impact on the next-generation seed technologies market. On one hand, demand rose as food security became a priority during the pandemic. Farmers sought resilient seeds to ensure productivity. Online platforms supported seed distribution despite restrictions. On the other hand, supply chain disruptions affected research and development. Economic uncertainty limited investments in advanced seed technologies. Preventive health awareness increased focus on sustainable agriculture. Overall, the pandemic accelerated awareness of innovation in seed systems.

The herbicide tolerance segment is expected to be the largest during the forecast period

The herbicide tolerance segment is expected to account for the largest market share during the forecast period as farmers increasingly adopt seeds that reduce weed management costs. Herbicide-tolerant seeds improve efficiency in large-scale farming. They reduce dependency on manual labor for weed control. Manufacturers are investing in herbicide-resistant seed innovations. Retail penetration of herbicide-tolerant seeds is strong in developed markets. Farmers prefer these seeds for cost savings and productivity. This segment will remain dominant in overall revenue contribution.

The fruits & vegetables segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the fruits & vegetables segment is predicted to witness the highest growth rate due to rising demand for nutrient-rich and resilient crops. Consumers are increasingly adopting healthier diets with fresh produce. Gene-edited fruits and vegetables offer improved shelf life and nutritional value. Younger demographics are particularly inclined toward functional foods. Digital platforms promote awareness of seed innovations in horticulture. Governments are supporting fruit and vegetable farming through subsidies.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share owing to strong consumer awareness and advanced agricultural infrastructure. High adoption of biotechnology supports growth. Leading seed companies and research institutions are headquartered in this region. Government initiatives promote innovation in seed technologies. Retail penetration of advanced seeds is strong in the US and Canada. Farmers are willing to invest in premium seed solutions. North America will remain the largest contributor to global revenue.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR driven by rising disposable incomes and growing agricultural modernization. Urbanization and food security concerns are fueling demand for advanced seeds. Countries such as China, India, and Japan are adopting next-generation seed technologies rapidly. E-commerce platforms support distribution of innovative seeds. Government subsidies encourage adoption in rural areas. Affordable seed solutions appeal to mass farmers.

Key players in the market

Some of the key players in Next-Generation Seed Technologies Market include Bayer AG, Corteva Agriscience, Syngenta AG, BASF SE, Limagrain, KWS SAAT SE & Co. KGaA, Sakata Seed Corporation, Advanta Seeds, Nuziveedu Seeds Ltd., DLF Seeds A/S, Rallis India Limited, Bioceres Crop Solutions, FMC Corporation, Pairwise Plants and Benson Hill, Inc.

Key Developments:

In February 2026, Bayer officially launched newgold®, its first multi-crop seed brand specifically designed for the low-carbon biofuel economy. This product-led growth strategy focuses on high-performance oilseed crops like camelina and winter canola, providing farmers with a "profit multiplier" that integrates into existing rotations to meet the surging global demand for sustainable aviation fuel.

In October 2025, Corteva Agriscience announced a multi-year collaboration with Profluent to utilize AI-designed protein platforms for sustainable crop innovation. This strategic partnership-led effort focuses on accelerating the discovery of novel gene-editing tools to enhance disease resistance and stress tolerance in core row crops like corn and soybeans.

Seed Types Covered:

Genetically Modified Seeds

Hybrid Seeds

Gene-Edited Seeds

Climate-Resilient Seeds

Other Seed Types

Trait Types Covered:

Herbicide Tolerance

Insect Resistance

Drought Tolerance

Disease Resistance

Yield Enhancement Traits

Other Trait Types

Technologies Covered:

CRISPR Gene Editing

Marker-Assisted Selection

Genomic Selection

Seed Treatment Technologies

Biotechnology Platforms

Other Technologies

Crop Types Covered:

Cereals & Grains

Oilseeds & Pulses

Fruits & Vegetables

Commercial Crops

Other Crop Types

End Users Covered:

Commercial Farmers

Seed Companies

Agricultural Research Institutes

Government Agricultural Agencies

Other End Users

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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