

Gene Editing Agriculture Platforms Market Forecasts to 2034 – Global Analysis By Technology (CRISPR-Cas9, CRISPR-Cas12, Base Editing, Prime Editing, TALENs and Other Technologies), Editing Function, Target Trait, Crop Type, Platform User, and Geography

<https://marketpublishers.com/r/G375270D4540EN.html>

Date: June 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: G375270D4540EN

Abstracts

According to Statistics MRC, the Global Gene Editing Agriculture Platforms Market is accounted for \$0.6 billion in 2026 and is expected to reach \$3.6 billion by 2034 growing at a CAGR of 25.0% during the forecast period. Gene Editing Agriculture Platforms comprise biotechnology systems, software, laboratory tools, and analytical technologies used to develop crops with targeted genetic modifications. These platforms support techniques such as CRISPR-based editing to alter specific genes associated with yield, nutritional characteristics, disease resistance, stress tolerance, or other agronomic traits. Researchers and seed developers use them to accelerate crop improvement while reducing the need for conventional multi-generation breeding. Applications span major field crops, specialty crops, horticulture, and emerging agricultural varieties. Increasing climate variability and demand for improved crop performance are driving interest in precise genetic technologies. Integration of computational genomics, automated screening, and high-throughput phenotyping is improving development efficiency. Regulatory frameworks, trait validation, and consumer acceptance remain important factors influencing commercialization across different markets.

Market Dynamics

Driver:

Growing demand for crop improvement

Increasing demand for crops with improved traits including disease resistance, drought tolerance, and enhanced nutrition is driving adoption of gene editing agriculture platforms. Growing challenges from climate change and pests support market expansion. Advances in gene editing technologies improve precision and efficiency. Rising food security concerns drive investment in crop improvement. Gene editing is becoming a key tool for sustainable agriculture.

Restraint:

Regulatory uncertainty and public acceptance

Regulatory uncertainty for gene-edited crops and limited public acceptance in certain regions present barriers to market growth. Consumer concerns about genetically modified organisms may affect adoption. Regulatory frameworks for gene editing vary significantly across regions. High development costs and long timelines for regulatory approval constrain market growth. Intellectual property disputes may affect technology access.

Opportunity:

Innovation in gene editing technologies

Innovation in gene editing technologies presents significant growth opportunities. Development of more precise and efficient editing tools is expanding applications. Growing investment in agricultural biotechnology accelerates product development. Partnerships between technology companies and seed companies expand market reach. Technology advances continue improving editing efficiency and reducing costs.

Threat:

Competition from conventional breeding and genetic modification

Competition from conventional breeding and transgenic approaches may limit gene editing adoption. Economic pressures may affect investment in gene editing research. Regulatory changes affecting gene-edited crop approval may impact market development. Consumer skepticism regarding gene editing may affect adoption. Rapid growth of gene editing attracts new entrants and intensifies competition.

Covid-19 Impact:

The COVID-19 pandemic highlighted the importance of resilient food systems, accelerating interest in gene editing for crop improvement. Supply chain disruptions

increased focus on crop resilience and productivity. The post-pandemic period has witnessed sustained investment in agricultural biotechnology. Food system transformation continues driving innovation. Consumer awareness of gene editing continues evolving.

The CRISPR-Cas9 segment is expected to be the largest during the forecast period

The CRISPR-Cas9 segment is expected to account for the largest market share during the forecast period as CRISPR-Cas9 offers precise, efficient, and versatile gene editing capabilities. Growing adoption of CRISPR-Cas9 for crop improvement drives market expansion. Advances in CRISPR-Cas9 technology improve editing efficiency. Established research and development support segment leadership. CRISPR-Cas9 is the most widely used gene editing technology.

The disease resistance segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the disease resistance segment is predicted to witness the highest growth rate driven by increasing crop losses from diseases and growing demand for resistant varieties. Growing awareness of the economic impact of crop diseases supports market expansion. Advances in gene editing enable precise modification of disease resistance genes. Consumer demand for disease-resistant crops continues growing. Disease resistance is a key focus area for gene editing applications.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share owing to advanced agricultural biotechnology infrastructure, strong research institutions, and supportive regulatory environment. The United States hosts major gene editing companies with established research and development capabilities. High farmer awareness of biotechnology reinforces regional market leadership. Growing investment in agricultural innovation drives adoption across the region.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest

CAGR driven by large agricultural area, growing food security concerns, and increasing investment in agricultural biotechnology. China, India, and Japan are expanding gene editing capabilities. Growing focus on crop improvement accelerates market growth. Government support for agricultural innovation creates favorable market environment.

Key players in the market

Some of the key players in the Gene Editing Agriculture Platforms Market include Bayer AG, BASF SE, Corteva, Inc., Syngenta Group, Pairwise, Editas Medicine, Inc., Precision BioSciences, Inc., Inscripta, Inc., AgBiome, Inari Agriculture, PlantArcBio Ltd., CRISPR Therapeutics AG, Beam Therapeutics Inc., Yield10 Bioscience, Inc., and Orionis Biosciences.

Key Developments:

In March 2026, Bayer AG announced regulatory approval for a gene-edited wheat variety with enhanced disease resistance in multiple jurisdictions, marking a significant milestone for commercial deployment.

In July 2025, Pairwise launched a new gene editing platform specifically designed for specialty crops including leafy greens and berries. The platform enabled precise trait modifications for improved nutrition and shelf life.

In October 2024, Inari Agriculture announced successful development of gene-edited corn varieties with enhanced drought tolerance using its proprietary SEEDesign platform. The achievement marked progress in commercializing gene-edited crops.

In May 2024, Corteva, Inc. announced the launch of its next-generation gene editing platform incorporating improved CRISPR-Cas12a enzymes for enhanced precision in crop trait development. The platform was designed to accelerate breeding programs.

Technologies Covered:

CRISPR-Cas9

CRISPR-Cas12

Base Editing

Prime Editing

TALENs

Other Technologies

Editing Functions Covered:

Gene Knockout

Gene Insertion

Gene Replacement

Gene Activation

Gene Suppression

Other Editing Functions

Target Traits Covered:

Disease Resistance

Pest Resistance

Drought Tolerance

Yield Enhancement

Nutritional Enhancement

Other Target Traits

Crop Types Covered:

Cereals & Grains

Fruits & Vegetables

Oilseeds & Pulses

Cash Crops

Industrial Crops

Other Crop Types

Platform Users Covered:

Seed Companies

Biotechnology Companies

Agricultural Research Institutes

Universities

Contract Research Organizations

Other Platform 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

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

4.1.5 Competitive Rivalry

4.2 Market Share Analysis of Key Players

4.3 Product Benchmarking and Performance Comparison

5 GLOBAL GENE EDITING AGRICULTURE PLATFORMS MARKET, BY TECHNOLOGY

5.1 CRISPR-Cas9

5.2 CRISPR-Cas12

5.3 Base Editing

5.4 Prime Editing

5.5 TALENs

5.6 Other Technologies

6 GLOBAL GENE EDITING AGRICULTURE PLATFORMS MARKET, BY EDITING FUNCTION

6.1 Gene Knockout

6.2 Gene Insertion

6.3 Gene Replacement

6.4 Gene Activation

6.5 Gene Suppression

6.6 Other Editing Functions

7 GLOBAL GENE EDITING AGRICULTURE PLATFORMS MARKET, BY TARGET TRAIT

7.1 Disease Resistance

7.2 Pest Resistance

7.3 Drought Tolerance

7.4 Yield Enhancement

7.5 Nutritional Enhancement

7.6 Other Target Traits

8 GLOBAL GENE EDITING AGRICULTURE PLATFORMS MARKET, BY CROP TYPE

8.1 Cereals & Grains

8.2 Fruits & Vegetables

8.3 Oilseeds & Pulses

8.4 Cash Crops

8.5 Industrial Crops

8.6 Other Crop Types

9 GLOBAL GENE EDITING AGRICULTURE PLATFORMS MARKET, BY PLATFORM USER

9.1 Seed Companies

9.2 Biotechnology Companies

9.3 Agricultural Research Institutes

9.4 Universities

9.5 Contract Research Organizations

9.6 Other Platform Users

10 GLOBAL GENE EDITING AGRICULTURE PLATFORMS MARKET, BY GEOGRAPHY

10.1 North America

10.1.1 United States

10.1.2 Canada

10.1.3 Mexico

10.2 Europe

10.2.1 United Kingdom

10.2.2 Germany

10.2.3 France

10.2.4 Italy

10.2.5 Spain

10.2.6 Netherlands

10.2.7 Belgium

10.2.8 Sweden

10.2.9 Switzerland

10.2.10 Poland

10.2.11 Rest of Europe

10.3 Asia Pacific

10.3.1 China

10.3.2 Japan

10.3.3 India

10.3.4 South Korea

- 10.3.5 Australia
- 10.3.6 Indonesia
- 10.3.7 Thailand
- 10.3.8 Malaysia
- 10.3.9 Singapore
- 10.3.10 Vietnam
- 10.3.11 Rest of Asia Pacific
- 10.4 South America
 - 10.4.1 Brazil
 - 10.4.2 Argentina
 - 10.4.3 Colombia
 - 10.4.4 Chile
 - 10.4.5 Peru
 - 10.4.6 Rest of South America
- 10.5 Rest of the World (RoW)
 - 10.5.1 Middle East
 - 10.5.1.1 Saudi Arabia
 - 10.5.1.2 United Arab Emirates
 - 10.5.1.3 Qatar
 - 10.5.1.4 Israel
 - 10.5.1.5 Rest of Middle East
 - 10.5.2 Africa
 - 10.5.2.1 South Africa
 - 10.5.2.2 Egypt
 - 10.5.2.3 Morocco
 - 10.5.2.4 Rest of Africa

11 STRATEGIC MARKET INTELLIGENCE

- 11.1 Industry Value Network and Supply Chain Assessment
- 11.2 White-Space and Opportunity Mapping
- 11.3 Product Evolution and Market Life Cycle Analysis
- 11.4 Channel, Distributor, and Go-to-Market Assessment

12 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 12.1 Mergers and Acquisitions
- 12.2 Partnerships, Alliances, and Joint Ventures
- 12.3 New Product Launches and Certifications

12.4 Capacity Expansion and Investments

12.5 Other Strategic Initiatives

13 COMPANY PROFILES

13.1 Bayer AG

13.2 BASF SE

13.3 Corteva, Inc.

13.4 Syngenta Group

13.5 Pairwise

13.6 Editas Medicine, Inc.

13.7 Precision BioSciences, Inc.

13.8 Inscripta, Inc.

13.9 AgBiome

13.10 Inari Agriculture

13.11 PlantArcBio Ltd.

13.12 CRISPR Therapeutics AG

13.13 Beam Therapeutics Inc.

13.14 Yield10 Bioscience, Inc.

13.15 Orionis Biosciences

List of Tables

Table 1 Global Gene Editing Agriculture Platforms Market Outlook, By Region
(2023-2034) (\$MN)

Table 2 Global Gene Editing Agriculture Platforms Market, By Technology (2023–2034)
(\$MN)

Table 3 Global Gene Editing Agriculture Platforms Market, By CRISPR-Cas9
(2023–2034) (\$MN)

Table 4 Global Gene Editing Agriculture Platforms Market, By CRISPR-Cas12
(2023–2034) (\$MN)

Table 5 Global Gene Editing Agriculture Platforms Market, By Base Editing (2023–2034)
(\$MN)

Table 6 Global Gene Editing Agriculture Platforms Market, By Prime Editing
(2023–2034) (\$MN)

Table 7 Global Gene Editing Agriculture Platforms Market, By TALENs (2023–2034)
(\$MN)

Table 8 Global Gene Editing Agriculture Platforms Market, By Other Technologies
(2023–2034) (\$MN)

Table 9 Global Gene Editing Agriculture Platforms Market, By Editing Function
(2023–2034) (\$MN)

Table 10 Global Gene Editing Agriculture Platforms Market, By Gene Knockout
(2023–2034) (\$MN)

Table 11 Global Gene Editing Agriculture Platforms Market, By Gene Insertion
(2023–2034) (\$MN)

Table 12 Global Gene Editing Agriculture Platforms Market, By Gene Replacement
(2023–2034) (\$MN)

Table 13 Global Gene Editing Agriculture Platforms Market, By Gene Activation
(2023–2034) (\$MN)

Table 14 Global Gene Editing Agriculture Platforms Market, By Gene Suppression
(2023–2034) (\$MN)

Table 15 Global Gene Editing Agriculture Platforms Market, By Other Editing Functions
(2023–2034) (\$MN)

Table 16 Global Gene Editing Agriculture Platforms Market, By Target Trait
(2023–2034) (\$MN)

Table 17 Global Gene Editing Agriculture Platforms Market, By Disease Resistance
(2023–2034) (\$MN)

Table 18 Global Gene Editing Agriculture Platforms Market, By Pest Resistance
(2023–2034) (\$MN)

Table 19 Global Gene Editing Agriculture Platforms Market, By Drought Tolerance
(2023–2034) (\$MN)

Table 20 Global Gene Editing Agriculture Platforms Market, By Yield Enhancement
(2023–2034) (\$MN)

Table 21 Global Gene Editing Agriculture Platforms Market, By Nutritional Enhancement
(2023–2034) (\$MN)

Table 22 Global Gene Editing Agriculture Platforms Market, By Other Target Traits
(2023–2034) (\$MN)

Table 23 Global Gene Editing Agriculture Platforms Market, By Crop Type (2023–2034)
(\$MN)

Table 24 Global Gene Editing Agriculture Platforms Market, By Cereals & Grains
(2023–2034) (\$MN)

Table 25 Global Gene Editing Agriculture Platforms Market, By Fruits & Vegetables
(2023–2034) (\$MN)

Table 26 Global Gene Editing Agriculture Platforms Market, By Oilseeds & Pulses
(2023–2034) (\$MN)

Table 27 Global Gene Editing Agriculture Platforms Market, By Cash Crops
(2023–2034) (\$MN)

Table 28 Global Gene Editing Agriculture Platforms Market, By Industrial Crops
(2023–2034) (\$MN)

Table 29 Global Gene Editing Agriculture Platforms Market, By Other Crop Types

(2023–2034) (\$MN)

Table 30 Global Gene Editing Agriculture Platforms Market, By Platform User

(2023–2034) (\$MN)

Table 31 Global Gene Editing Agriculture Platforms Market, By Seed Companies

(2023–2034) (\$MN)

Table 32 Global Gene Editing Agriculture Platforms Market, By Biotechnology
Companies (2023–2034) (\$MN)

Table 33 Global Gene Editing Agriculture Platforms Market, By Agricultural Research
Institutes (2023–2034) (\$MN)

Table 34 Global Gene Editing Agriculture Platforms Market, By Universities
(2023–2034) (\$MN)

Table 35 Global Gene Editing Agriculture Platforms Market, By Contract Research
Organizations (2023–2034) (\$MN)

Table 36 Global Gene Editing Agriculture Platforms Market, By Other Platform Users
(2023–2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World
(RoW) are also represented in the same manner as above.

I would like to order

Product name: Gene Editing Agriculture Platforms Market Forecasts to 2034 – Global Analysis By Technology (CRISPR-Cas9, CRISPR-Cas12, Base Editing, Prime Editing, TALENs and Other Technologies), Editing Function, Target Trait, Crop Type, Platform User, and Geography

Product link: <https://marketpublishers.com/r/G375270D4540EN.html>

Price: US\$ 4,150.00 (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/G375270D4540EN.html>