

# **Plant Growth Regulators Market Forecasts to 2032 - Global Analysis By Type (Auxins, Brassinosteroids, Gibberellins, Abscisic Acid, Cytokinins, Ethylene, and Other Types), Formulation, Crop Type, Mode, Distribution Channel, Application and By Geography**

<https://marketpublishers.com/r/P6F290F43180EN.html>

Date: January 2026

Pages: 200

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

ID: P6F290F43180EN

## **Abstracts**

According to Statistics MRC, the Global Plant Growth Regulators Market is accounted for \$5.32 billion in 2025 and is expected to reach \$13.32 billion by 2032 growing at a CAGR of 14.0% during the forecast period. Plant Growth Regulators are biologically active substances, natural or synthetic, that control and modify plant growth and developmental activities when applied in small amounts. They act by altering key plant functions such as cell expansion, division, flowering, fruiting, and stress response. Major groups include auxins, cytokinins, gibberellins, ethylene, and abscisic acid. In modern agriculture, PGRs are used to optimize crop performance, manage plant structure, regulate maturity, and enhance productivity and quality under varying growing conditions.

According to the Department of Agriculture and Farmers Welfare, the food grain production in India stood at 330.05 MT in 2022-23, growing by 14 MT from 2021-22.

### **Market Dynamics:**

Driver:

Adoption of organic and sustainable farming

Farmers are increasingly seeking solutions that improve crop yield and quality while minimizing environmental impact. PGRs support efficient nutrient utilization, stress

tolerance, and controlled plant development, aligning well with sustainable farming objectives. Government incentives and certification programs for organic agriculture are further encouraging their adoption. Rising awareness about soil health and biodiversity conservation is also influencing purchasing decisions. Research-backed recommendations from agronomists are reinforcing confidence in regulated PGR usage. As sustainability becomes central to modern agriculture, PGRs are gaining wider acceptance across diverse crop systems.

#### Restraint:

##### High product and development costs

Extensive research, field trials, and regulatory testing significantly increase overall expenditure. Compliance with stringent environmental and safety regulations adds further financial burden for manufacturers. Advanced formulations, particularly bio-based and residue-free products, require specialized production processes. Smaller companies often struggle to scale innovations due to limited capital and long payback periods. These cost pressures can result in premium pricing, limiting adoption among price-sensitive farmers. As a result, market penetration in developing regions may progress at a slower pace.

#### Opportunity:

##### Development of bio-based formulations

Natural and microbial-based PGRs are gaining attention due to their lower toxicity and environmental compatibility. Advances in biotechnology are enabling the development of more stable and effective bio-derived solutions. Farmers are showing greater willingness to adopt products that comply with organic certification standards. Regulatory bodies are also supporting greener alternatives through favourable approval pathways. Integration of bio-based PGRs with precision farming practices is enhancing their value proposition. This shift is opening new growth avenues for innovation-driven manufacturers.

#### Threat:

##### Prevalence of counterfeit products

Imitation products often fail to deliver expected results, leading to crop losses and

reduced farmer trust. Weak enforcement of quality standards in some regions exacerbates this issue. Counterfeit products also create unfair price competition for legitimate manufacturers. Inconsistent performance from such products can negatively impact overall perception of PGR effectiveness. Companies are increasingly investing in traceability, tamper-proof packaging, and farmer education to mitigate risks. Despite these efforts, counterfeit penetration remains a persistent market challenge.

### **Covid-19 Impact:**

The COVID-19 pandemic disrupted the plant growth regulators market by affecting supply chains and agricultural input distribution. Lockdowns and transportation restrictions caused delays in raw material sourcing and product deliveries. Labor shortages in manufacturing and farming operations further constrained market activity. However, the crisis highlighted the importance of food security, sustaining demand for yield-enhancing inputs. Digital advisory services and e-commerce channels gained traction during the pandemic. Governments prioritized agricultural continuity, supporting input availability through policy measures. Post-pandemic recovery is now focused on supply chain resilience and localized production.

The auxins segment is expected to be the largest during the forecast period

The auxins segment is expected to account for the largest market share during the forecast period. Auxins are widely used for promoting root initiation, fruit development, and overall plant growth. Their effectiveness across cereals, fruits, vegetables, and plantation crops supports broad-based adoption. These regulators play a critical role in improving crop uniformity and yield consistency. Continuous advancements in formulation technologies are enhancing their stability and application efficiency. Farmers value auxins for their proven performance and predictable results.

The seed treatment segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the seed treatment segment is predicted to witness the highest growth rate. Applying PGRs at the seed stage improves germination rates and early plant vigor. This approach enables efficient input usage and reduces the need for repeated field applications. Rising adoption of precision agriculture is supporting growth in seed-based solutions. Seed companies are increasingly incorporating PGRs into value-added seed offerings. Improved stress resistance during early growth stages is a key benefit driving demand.

Region with largest share:

During the forecast period, the Europe region is expected to hold the largest market share. The region has a well-established agricultural sector with strong emphasis on crop quality and sustainability. Strict regulations on chemical usage are encouraging the adoption of controlled and compliant PGR solutions. High awareness among farmers regarding advanced agronomic practices supports steady demand. Significant investments in agricultural research and innovation are driving product development. The presence of major agrochemical companies strengthens market maturity.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Rapid population growth is intensifying the need for higher agricultural productivity. Countries such as China and India are adopting modern farming techniques at an accelerated pace. Government initiatives promoting yield optimization and farmer income are supporting PGR usage. Expansion of commercial farming and horticulture is boosting market demand. Increasing awareness of crop management technologies is improving adoption rates.

Key players in the market

Some of the key players in Plant Growth Regulators Market include BASF SE, Dhanuka Agritech, Bayer AG, De Sangosse, Syngenta AG, Sipcam Oxon, Corteva Agriscience, Nippon Soda, FMC Corporation, Sichuan Guoguang Agrochemical, Nufarm Limited, Valent BioSciences, UPL Limited, Tata Chemicals, and Sumitomo Chemical.

### **Key Developments:**

In October 2025, SALIC and Syngenta Signs Agreement to Explore Joint Agriculture Projects that Enhance Food Security in Saudi Arabia and Around the World. Saudi Agricultural and Livestock Investment Company (SALIC) and global agri-tech leader Syngenta Crop Protection AG (Syngenta), have signed a Letter of Intent (LOI) to combine their expertise to create a resilient agri-food sector in Saudi Arabia and globally.

In August 2025, The Chemours Company (NYSE: CC), DuPont de Nemours, Inc. and Corteva, Inc. announced a settlement to comprehensively resolve all pending

environmental and other claims by the State of New Jersey against the Companies in various litigation matters and other state directives. The Settlement will resolve all legacy contamination claims related to the companies' current and former operating sites and claims of statewide PFAS contamination unrelated to those sites, including from the use of aqueous film forming foam.

#### Types Covered:

Auxins

Brassinosteroids

Gibberellins

Abscisic Acid

Cytokinins

Ethylene

Other Types

#### Formulations Covered:

Liquid

Powder

Granules

#### Crop Types Covered:

Cereals & Grains

Turf & Ornamentals

Fruits & Vegetables

Oilseeds & Pulses

Other Crop Types

Modes Covered:

Foliar Application

Soil Application

Seed Coating

Distribution Channels Covered:

Direct Sales

Retail

Distributors & Dealers

Online/ E-commerce

Applications Covered:

Seed Treatment

Soil Treatment

Foliar Spray

Post-Harvest Treatment

Other Applications

**Regions Covered:****North America**

US

Canada

Mexico

**Europe**

Germany

UK

Italy

France

Spain

Rest of Europe

**Asia Pacific**

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

## South America

Argentina

Brazil

Chile

Rest of South America

## Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & 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 2024, 2025, 2026, 2028, and 2032
- 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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