

# **Plant Growth Regulators Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Auxins, Gibberellins, Cytokinins, Abscissic Acid, Ethylene), By Crop Type (Cereals, Oilseeds and Pulses, Fruits and Vegetables, Turf and Ornamentals, Others), By Region and Competition, 2019-2029F**

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## **Abstracts**

Global Plant Growth Regulators Market was valued at USD 3.17 billion in 2023 and is anticipated to project robust growth in the forecast period with a CAGR of 4.27% through 2029. One of the main drivers of the plant growth regulators (PGRs) market is their crucial role in bolstering global crop production. As agriculture faces the challenges posed by climate change and unpredictable weather patterns, PGRs play a vital role in mitigating environmental stress factors. By enhancing plant growth and crop yield, they contribute significantly to ensuring a stable and sustainable food supply.

The market is also witnessing growth due to the increasing popularity of organic farming. With more farmers transitioning from traditional to organic farming methods, there is a rising demand for PGRs, particularly those derived from natural sources. These natural PGRs are sought after for their compatibility with organic farming practices and their ability to support plant growth without compromising environmental sustainability.

Key Market Drivers

Growth in Agriculture Industry

Plant growth regulators (PGRs) play a vital role in modern agriculture by exerting control over the growth and development of plant cells, tissues, and organs. These chemical substances offer a myriad of benefits to farmers worldwide. By influencing plant growth, PGRs contribute to improved crop yield, ensuring an abundant and sustainable food supply. Additionally, PGRs enhance the quality of harvested crops, leading to better taste, texture, and nutritional value for consumers.

PGRs provide a means to combat pests and diseases, safeguarding crops from potential threats. This ability to enhance resistance contributes to the overall resilience and longevity of agricultural systems. As a result, PGRs have become indispensable tools in the arsenal of farmers, empowering them to meet the increasing demands for food production while minimizing losses due to environmental factors.

The global shift towards precision farming and sustainable agricultural practices has further amplified the significance of PGRs. These innovative farming techniques prioritize efficient resource utilization and strive to minimize the environmental impact of agricultural activities. Within this context, PGRs serve as pivotal components in achieving these goals. By precisely regulating plant growth, PGRs enable farmers to optimize resource allocation, minimize waste, and reduce the use of potentially harmful agrochemicals.

The continuous advancements in biotechnology and genetic research further hold immense promise for the future of PGRs. As scientists delve deeper into the intricacies of plant biology, they are likely to uncover new applications and potential uses for these regulators. This ongoing research presents exciting opportunities for the expansion of the PGRs market and highlights their potential to revolutionize agricultural practices.

### Surge in Technological Advancements

Technological advancements have revolutionized and transformed the agriculture sector, including the market for plant growth regulators (PGRs). These advancements have paved the way for the development of more effective and efficient PGRs, which play a crucial role in enhancing crop yield, improving crop quality, and mitigating environmental stress factors.

One such technological innovation that has contributed significantly to the increased demand for PGRs is precision farming. This modern farming method relies heavily on cutting-edge technology to optimize the use of resources, minimize environmental impact, and maximize crop yields. In this context, PGRs have become an integral part

of precision farming, as they help farmers achieve optimal agricultural outcomes.

The PGRs market is currently experiencing a surge in demand, particularly for PGRs with protective properties. This trend is driven by the growing awareness of the importance of crop protection and the increasing adoption of precision farming practices. By leveraging advanced technologies, farmers can effectively safeguard their crops and achieve sustainable agricultural practices.

With the continuous advancements in technology and the increasing focus on sustainable agriculture, the future of the PGRs market looks promising. As more farmers recognize the benefits of integrating PGRs into their farming practices, the demand for innovative and efficient PGR solutions is expected to further rise. This presents an exciting opportunity for researchers, developers, and manufacturers to continue pushing the boundaries of PGR technology and contribute to the growth and resilience of the agriculture industry.

## Key Market Challenges

### Limited Awareness among Farmers

Farmers, especially those in remote areas or developing nations, may not be fully aware of the benefits of Plant Growth Regulators (PGRs). Due to limited access to information about the latest agricultural technologies, including the potential advantages of using PGRs to enhance crop yield and quality, many farmers continue to rely on traditional farming methods. They are often hesitant to adopt new technologies due to a lack of understanding or fear of potential risks associated with PGRs.

This lack of awareness and reluctance to embrace innovation pose major obstacles to the widespread adoption of PGRs. However, by providing farmers with detailed information on the scientific research and successful implementation of PGRs in similar agricultural contexts, we can address their concerns and encourage the uptake of these beneficial technologies. Additionally, promoting collaboration between agricultural extension services, research institutions, and farming communities can facilitate knowledge sharing and empower farmers with the necessary tools to make informed decisions about integrating PGRs into their farming practices.

By highlighting the specific benefits of PGRs, such as improved crop uniformity, enhanced disease resistance, and increased tolerance to environmental stressors, we can help farmers recognize the potential impact of these technologies on their

livelihoods. Moreover, showcasing success stories and case studies of farmers who have successfully incorporated PGRs into their operations can serve as powerful examples, inspiring others to embrace innovation and unlock the full potential of their agricultural endeavors.

## Key Market Trends

### Increasing Focus on Sustainable Agriculture

Sustainable agriculture, a holistic approach to meeting society's food and textile needs, goes beyond the present by ensuring the ability of future generations to meet their own needs. It encompasses three key goals: maintaining environmental health, ensuring economic profitability, and promoting social and economic equity.

As part of this transformative shift, there has been a growing interest in organic farming and innovative indoor farming methods, such as greenhouses and glasshouses. These methods align seamlessly with the principles of sustainable agriculture, as they prioritize resource efficiency, minimize environmental impact, and foster healthier crop growth.

In the realm of sustainable agriculture, plant growth regulators (PGRs) play a pivotal role. These regulators act as catalysts for crop production, mitigating environmental stress factors and bolstering crop resilience. By utilizing PGRs, farmers are able to enhance yields, optimize input management, and significantly contribute to the overall productivity of the agricultural sector.

## Segmental Insights

### Type Insights

Based on the category of type, the auxins segment emerged as the dominant player in the global market for plant growth regulators in 2023. Auxins are a group of plant growth hormones that play a crucial role in regulating various aspects of plant development. One of their key functions is to control cell division and the production of vascular tissues, which are responsible for transporting water, nutrients, and other essential substances throughout the plant. Additionally, auxins are involved in promoting root initiation, facilitating shoot maturation, and maintaining apical dominance, which refers to the tendency of the main stem to grow taller without producing side branches.

Auxins also have a significant impact on fruit production. They contribute to the

development and ripening of fruits by regulating processes such as cell enlargement, cell division, and hormone synthesis. This makes auxins invaluable in agricultural practices, as they can be utilized as root stimulators or retarders, cut flower stimulators or retarders, leafing inhibitors or promoters, and more.

Considering their pivotal role in plant growth and development, auxins are anticipated to be the major factors influencing the market size of plant growth regulators during the forecast period. Their diverse applications and ability to modulate various physiological processes make them an essential tool for farmers, horticulturists, and researchers alike.

### Crop Type Insights

The cereals segment is projected to experience rapid growth during the forecast period. Plant growth regulators, also known as plant hormones, are widely used in cereal production to carefully regulate the crop cycle. These regulators serve multiple purposes, including preventing lodging of crops, improving grain size and quality, and even reducing post-harvest losses. By delicately delaying the ripening process, these regulators extend the harvesting intervals, allowing for a more efficient and productive harvest.

Among the various plant hormones, auxins and cytokinins, in particular, play a pivotal role in this application. These hormones enhance plant vigor and stimulate production, leading to higher yields of produce that boast superior quality and nutritional value. With the strategic use of these growth regulators, farmers and agricultural experts can optimize cereal production and maximize the overall outcome.

### Regional Insights

Europe emerged as the dominant player in the Global Plant Growth Regulators Market in 2023, holding the largest market share in terms of value. The increasing demand for fruits and vegetables in the region, coupled with the challenging climatic conditions faced by many countries, is expected to drive the adoption of plant growth regulators to enhance agricultural productivity.

Europe, with nations such as Germany, the United Kingdom, France, and Italy, among others, is emerging as a key market for plant growth regulators. This can be attributed to the region's growing population, which is anticipated to further boost the regional market during the forecast years for the plant growth regulators market. With

advancements in technology and the need for sustainable farming practices, the use of plant growth regulators is becoming increasingly important for farmers to optimize crop yields and meet the rising demand for high-quality produce.

### Key Market Players

BASF SE

Bayer Crop Science AG

Corteva Agriscience AB

Syngenta AG

Nufarm Limited

Sumitomo Australia Pty Ltd

TATA chemicals limited

Arysta Lifescience Ltd

FMC Corporation

UPL Limited

### Report Scope:

In this report, the Global Plant Growth Regulators Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

### Plant Growth Regulators Market,By Type:

oAuxins

oGibberellins

oCytokinins

oAbscicic Acid

oEthylene

Plant Growth Regulators Market,By Crop Type:

oCereals

oOilseeds and Pulses

oFruits and Vegetables

oTurf and Ornamentals

oOthers

Plant Growth Regulators Market, By Region:

oNorth America

United States

Canada

Mexico

oEurope

France

United Kingdom

Italy

Germany

Spain

## oAsia Pacific

China

India

Japan

Australia

South Korea

## oSouth America

Brazil

Argentina

Colombia

## oMiddle East Africa

South Africa

Saudi Arabia

UAE

## Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Plant Growth Regulators Market.

## Available Customizations:

*Plant Growth Regulators Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By...*



Global Plant Growth Regulators Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

#### Company Information

Detailed analysis and profiling of additional market players (up to five).

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