

# Precision Seed Treatment Market

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## Abstracts

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The global precision seed treatment market growth is on a trajectory of significant expansion, with an estimated value projected to reach USD XX.X billion by 2029 from the 2024 valuation of USD XX.X billion, displaying a promising Compound Annual Growth Rate (CAGR) of X.X%. Several interlinked factors are enabling the precision seed treatment market to grow. An increase in world population is resulting in an increase in food requirements, which creates pressure on farmers to innovate ways that would improve crop productivity and quality. Precision seed treatments, including customized biopesticides, fertilizers, and nutrients, are exactly what farmers require. As they enhance the germination rate and plant health directly.

Another aspect is that the technologies have also transformed seed treatment processes. The development of microencapsulation and nanotechnology has enabled obtaining more specific applications of inputs, which increased the level of efficiency and decreased wastage. Precision fits within the trend towards sustainable agriculture in light of minimizing chemical application and environmental impacts.

## Precision Seed Treatment Market Trends

Market Dynamics

Drivers:

Increasing global population and dietary changes is driving the market.

Rises in global population and changes in dietary patterns are among the significant drivers for precision seed treatment market. Large population requires large amount of

food, and the agriculture sector has to raise crop yields through efficient farming if this is to be realized. Diet changes to fruits and vegetables also requires ensuring quality production because the productivity of these kinds of crops is highly valued. The health-conscious consumer also increases this demand, as precision treatments increase the nutrient content in crops. In addition, already scarce arable land and water mean proper use of inputs by farmers, which precision seed treatments serve to well-targeted application of nutrients and pest protection. This is in line with the trend for sustainable agriculture, mainly because consumers in current times prefer environmental-friendly practices. Finally, precision treatments will assist crops to weather the vagaries of climate so that yields are steady regardless of the altered weather patterns. In addition, all these factors makes precision seed treatments an essential input in the quest for meeting the needs of a populous and changing dietary demand.

#### Restraints:

Government regulations and industry standards hinders precision seed treatment market.

Government regulation and industry standards could severely limit the precision seed treatment market from growing. Strict approval processes, which would be imposed by the regulatory authorities, can delay new products entering the market, thus limiting choices available to the farmer. In addition, high compliance costs to strict regulations could make the precision seed treatment much less affordable, especially for farmers farming in developing areas. Emission and health-related restrictions on certain chemicals also limit treatment options in terms of both effectiveness and variety. Changing standards for manufacturers are very fast and not inspiring investment in new technologies. Moreover, the differences in levels of regulations from country to country serve as roadblocks in international trade thus narrowing access to worldwide markets for the manufacturer. Liability and litigation risks that often come with rigorous regulation can be enough to hang up product development. Last, regulations encouraging traditional agricultural practices may negatively impact the adoption speed by forcing farmers to operate within that traditional system. Among them, the above can aggregate to seriously high entry barriers and low growth for the precision seed treatment market.

#### Opportunities:

Technological advancement

Technological advancements have, hold several opportunities for the precision seed treatment market. Nanotechnology and microencapsulation are examples that improve effectiveness by enabling more nutrient or pesticide application at precise points while reducing waste. Through the multi-sensor system, all these precision agriculture technologies, together with sensors and data analytics, will enable seed treatments through real-time information, thus making it possible to have targeted seed applications and increase productivity while ensuring sustainability. With biotechnology, the yield can be improved by ensuring appropriate seed treatments specific to crops and environmental conditions. Its performance is raised, while ensuring enhanced resilience. Furthermore, combining precision seed treatments with digital farming platforms raises monitoring and management capacity since one can track the effectiveness of the treatment and the need to change it if needed. This way, for example, with emerging technologies like robotics and automated application systems, the process of seed treatment has been made easier with the reduced labor costs and more efficient means of seed treatment. Research continually reveals novel active ingredients and formulations to control pests and address climate change, among other challenges.

#### Challenges:

##### High initial cost

High upfront costs is a challenge for the precision seed treatment market. Though it may be of advanced technology and specialized formulation with training, high initial investment may not readily allow most farmers, especially smallholders and even those in developing regions, to leap up to these technologies. This cost may also prove to be a financial risk for farmers who do not know if they will recuperate it in terms of returns on investment, thereby leading to limited adoption despite promising long-term benefits. The lack of access to finance may further constrain the adoption since the associated cost may also make lenders refrain from lending money to farmers for precision seed treatment. Economic constraints, like fluctuations in commodity price trends, can make the farmer incur expenditure on some core overheads instead of investing in new technology.

##### Market Ecosystem

The Chemical Treatments Segment Accounted For A Higher Market Share Among Treatment Type Segment In 2023.

The chemical treatment for a relatively larger part of the precision seed treatment

market. Established supply chains mean that chemical seed treatments are readily available. The fact that the products have involved massive investments in research and development with better formulations, improved performance, and lesser toxicity than those before the products encourage their use. Chemically treated crops get associated with good crop yields and quality which is critical to farmers aiming to maximize profitability. Regulatory support in some regions, mainly supporting certain chemical treatments, makes it easier as it provides a framework under which they may continue to be used.

### The Seed Coating Segment Is Projected To Be The Dominant During The Forecast Period In By Application Method Segment.

It ensures uniform application of treatments like pesticides, fungicides, and fertilizers directly onto the surface of a seed, and thus enhances seed performance as well as protection against pests and diseases. Coated seeds can be easily dealt with and can also be put into seeders by using the standard equipment, therefore becoming user-friendly to farmers and widely practiced. Seed coating also provides a proper inactivation throughout the germination phase, where seeds are most susceptible; hence, their emergence rates and the health of the plants are improved. The process of seed coating enables the dosing of a few treatments into one application, depending on especial needs of crops and specific environmental conditions. In addition, seed coating reduces the input of chemicals into the environment and, thus, it is in agreement with the emerging green revolution growing demands for sustainable agricultural practices among farmers, who ensure that they look after the environment.

### Asia Pacific Region Is Expected To Dominate For Precision Seed Treatment Market Among The Regions.

The precision seed treatment market in the Asia-Pacific region is the fastest growing, which is found to be more significant due to the following critical reasons. Higher agricultural demands due to ever-increasing population insist the farmers to opt for better methods like precision seed treatments to increase their crops. The modern and precision agriculture trend is gradually and prominently witnessed as farmers opt for technologies that reduce efforts. Governments are supporting sustainable agriculture and initiating relevant projects in most countries. Most governments offer incentives for innovative solutions in the country. Higher investment in research and development in the agricultural sector, which has brought innovations in seed treatment through biopesticides and sophisticated coating methods. As consumers start leading healthier lifestyles and become more aware about the environment, precision seed treatments for

sustainable agricultural practices is increasing the demand for the above.

## **Key Market Players**

The key players in this market include Bayer AG (Germany), Syngenta Crop Protection AG (Switzerland), Corteva (US), BASF (Germany), FMC Corporation (US), Elvenite AB (Sweden), Nufarm (US), Germains Seed Technology (UK), Nutrien Ag Solutions (US), Helena Agri-Enterprises, LLC (US), Stoller USA (US), Indigo Ag, Inc. (US), Locus Ag Solutions (US), Andermatt Group AG. (Switzerland), Pivot Bio (US), Indigo Ag (US).

## **Recent Developments**

In September 2024, Indigo Ag launched its ground-breaking CLIPS device. The device is an automatic hands-free system, which saves time, removes the hassle factor in the seed treatment process, and potentially upends standard biological seed treatment applications.

In July 2020, Precision Laboratories is added a new seed coating polymer to the PRISM line. PRISM SCP2020 is designed for optimized coverage, minimum dust-off, maximum retention of actives, improved seed flow and enhanced plantability.

## **Frequently Asked Questions (FAQ):**

What is the current size of the precision seed treatment market?

The precision seed treatment market forecast is estimated at USD XX.X billion in 2024 and is projected to reach USD XX.X billion by 2029, at a CAGR of X.X% from 2024 to 2029.

Which are the key players in the market, and how intense is the competition?

Precision seed treatment market players include Bayer AG (Germany), Syngenta Crop Protection AG (Switzerland), Corteva (US), BASF (Germany), FMC Corporation (US), Elvenite AB (Sweden), Nufarm (US), Germains Seed Technology (UK), Nutrien Ag Solutions (US), Helena Agri-Enterprises, LLC (US), Stoller USA (US), Indigo Ag, Inc. (US), Locus Ag Solutions (US), Andermatt Group AG. (Switzerland), Pivot Bio (US), Indigo Ag (US). These companies boast reliable precision seed treatment facilities alongside robust distribution networks spanning crucial regions. They possess a well-established portfolio of esteemed services, commanding a sturdy market presence

supported by sound business strategies. Additionally, they hold substantial market share, offer services with versatile applications, cater to a diverse geographical clientele, and maintain an extensive service range.

Which region is projected to account for the largest share of the precision seed treatment market?

The Asia Pacific holds largest market share in precision seed treatment as there is a higher agricultural demands due to ever-increasing population insist the farmers to opt for better methods like precision seed treatments to increase their crops.

What kind of information is provided in the company profile section?

The company profiles mentioned above offer valuable information such as a comprehensive business overview, including details on the company's various business segments, financial performance, geographical reach, revenue composition, and the breakdown of their business revenue. Additionally, these profiles offer insights into the company's product offerings, significant milestones, and expert analyst perspectives to further explain the company's potential.

What are the growth prospects for the precision seed treatment market in the next five years?

Technological advancements have, hold several opportunities for the precision seed treatment market. Nanotechnology and microencapsulation are examples that improve effectiveness by enabling more nutrient or pesticide application at precise points while reducing waste.

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