

# **Biostimulants Market by Crop Type (Cereals & Grains, Oilseeds & Pulses, Fruits & Vegetables, Flowers & Ornamentals), Active Ingredients (Humic Substances, Seaweed Extracts), Form (Dry, Liquid), Mode of Application and Region - Global Forecast to 2028**

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## **Abstracts**

Biostimulants play a crucial role in modern agriculture by offering multifaceted benefits to both plants and the surrounding environment. One primary function of biostimulants is to enhance nutrient uptake in plants, fostering improved absorption and transport mechanisms. By doing so, these products significantly elevate the overall nutrient use efficiency of plants, ensuring that essential elements are optimally utilized for growth and development. In addition to bolstering nutrient absorption, biostimulants serve as invaluable agents in enhancing stress tolerance in plants. They act as protective shields against a spectrum of environmental challenges, ranging from drought and salinity to fluctuations in temperature. This capacity to mitigate stressors enables plants to thrive under adverse conditions, contributing to increased resilience and sustained productivity.

The application of biostimulants correlates with a marked enhancement in crop quality. Farmers observe improved yields, better fruit set, and elevated nutritional content in crops treated with these stimulants. The positive impact on crop quality not only satisfies market demands for high-quality produce but also supports global efforts to address food security challenges. Beyond their direct effects on plants, certain biostimulants contribute to the overall health and sustainability of the soil. These products play a role in improving soil structure and fostering increased microbial activity. By promoting a healthier soil environment, biostimulants contribute to sustainable agricultural practices, enhancing long-term soil fertility and reducing the reliance on chemical inputs.

Biotechnology has enabled the identification and utilization of specific microorganisms and enzymes that exhibit beneficial effects on plant growth. These could be naturally occurring microbes or genetically modified organisms designed to enhance plant functions. Advancements in biotechnology have enabled a more precise understanding of plant-microbe interactions, allowing for the development of targeted biostimulant formulations. This precision helps in optimizing their effectiveness in specific crops or environmental conditions. Regulatory bodies are establishing guidelines and procedures for the registration and approval of biostimulants. This includes determining the criteria for safety, efficacy, and environmental impact assessments. Efforts are being made for international harmonization of regulations to ensure consistency in standards across different regions. This helps manufacturers comply with regulations in various markets.

Asia Pacific is projected to witness the highest growth rate during the forecast period.

As per FAOSTAT data for 2020, the Asian Pacific (APAC) region accounted for approximately 170 million hectares of global agricultural land. Economic development in key Asian countries, including India and China, is closely tied to the agricultural sector, with these nations serving as major contributors to the global crop export market. APAC boasts significant plant diversity owing to varied climates across countries, prompting farmers to adopt sustainable practices like the use of plant growth promoters for enhancing crop yield.

The agricultural sector in Asia has faced challenges from frequent extreme weather events such as storms, floods, and droughts. Furthermore, the historical reliance on chemical fertilizers and pesticides during the Green Revolution has led to adverse changes in soil structure and fertility in the region. In response to these challenges, there is a notable shift towards adopting new and sustainable farming practices in the region. Despite these challenges, the APAC region demonstrates consistent annual growth in key agricultural outputs, contributing to an increased demand for biostimulants, particularly in the cultivation of fruits and vegetables.

Amino acids are gaining rapid popularity in the biostimulants market across the globe.

Amino acids play a crucial role in the plant growth and development process, serving as essential building blocks for proteins and enzymes. In recent years, the biostimulant market has witnessed a significant surge in interest and growth, with amino acids emerging as key components in various biostimulant formulations. Biostimulants are substances that, when applied to plants or soil, enhance nutrient uptake, improve stress

tolerance, and promote overall plant health without providing direct nutrition. One of the notable advantages of amino acid-based biostimulants is their versatility in application. They can be utilized in conjunction with fertilizers or as standalone products, providing flexibility for farmers to integrate them into their existing crop management practices. Moreover, amino acids derived from natural sources, such as plant and animal proteins, align with the increasing demand for organic and sustainable agricultural practices.

By form, liquid form dominated the market for biostimulants in value terms

Liquid biostimulants offer several advantages over their solid counterparts. Their fluid nature allows for efficient mixing and uniform application, ensuring that plants receive a consistent dose of the biostimulant. This facilitates precise control over the application process, enabling farmers to tailor treatments to specific crop requirements. Moreover, the liquid form enhances the bioavailability of active ingredients, allowing for quicker absorption and utilization by plants. This rapid assimilation contributes to faster responses in terms of improved plant vigor, stress resistance, and overall performance. The growing awareness of sustainable agriculture and the increasing demand for organic produce have further fueled the adoption of liquid biostimulants. Farmers are recognizing the role of these liquid formulations in optimizing plant health, reducing the reliance on chemical inputs, and promoting environmentally friendly agricultural practices. As the biostimulant market continues to evolve, the liquid segment is expected to play a pivotal role in shaping the future of sustainable and efficient crop management practices.

By mode of application, the foliar treatment is accounted to have the largest share in the global biostimulants market

Farmers are increasingly recognizing the benefits of incorporating biostimulants into their foliar treatment regimens. These benefits include improved nutrient use efficiency, heightened resistance to environmental stressors, and ultimately, higher crop yields. The use of biostimulants in foliar treatments aligns with the broader trend towards sustainable agriculture, as these products contribute to reducing the reliance on traditional chemical inputs while promoting ecological balance.

The foliar treatment-biostimulant market is dynamic, with ongoing research and development efforts driving innovation in formulation and application techniques. This market evolution is spurred by a growing awareness of the importance of sustainable agricultural practices, coupled with a desire to optimize resource utilization in the face of increasing global food demand. As the agriculture industry continues to embrace foliar

treatments and biostimulants, it is expected that these practices will become integral components of modern farming strategies, contributing to both environmental stewardship and the economic viability of agricultural operations.

The break-up of the profile of primary participants in the biostimulants market:

By Value Chain Side: Demand side: 41%, and Supply side: 59%

By Designation: CXO's – 31%, Managers– 24%, and Executives- 45%

By Region: North America – 24%, Europe – 29%, Asia Pacific – 32 %, and RoW – 15%

#### Research Coverage:

This research report categorizes the biostimulants market by crop type (cereals & grains, oilseeds & pulses, fruits & vegetables, flowers & ornamentals, others crop types), by active ingredients (humic substances, seaweed extracts, amino acids, microbial amendments, other active ingredients), by form (dry, liquid), by mode of application (foliar treatment, soil treatment, seed treatment), and region (North America, Europe, Asia Pacific, South America and Rest of the World). The scope of the report covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the biostimulants market. A detailed analysis of the key industry players has been done to provide insights into their business overview, products, and services; key strategies; contracts, partnerships, and agreements. New product & service launches, mergers and acquisitions, and recent developments associated with the biostimulants market. Competitive analysis of upcoming startups in the biostimulants market ecosystem is covered in this report.

#### Reasons to buy this report:

The report will help the market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall biostimulants market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Increasing need for sustainable agriculture), restraints (Commercialization of low-quality biostimulant products), opportunities (Technological advancements in production of biostimulants), and challenges (Uncertainty in global biostimulant regulatory framework) influencing the growth of the biostimulants market.

Product Development/Innovation: Detailed insights on research & development activities, and new product & service launches in the biostimulants market.

Market Development: Comprehensive information about lucrative markets – the report analyses the biostimulants market across varied regions.

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the biostimulants market.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like BASF SE (Germany), UPL (India), FMC Corporation (US), Rallis India Limited (India), and ADAMA (Israel), among others in the biostimulants market strategies.

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