



Demand for biopesticides and bioherbicides soar

Press release by Frost and Sullivan

Producers have begun to adopt the recommended practices issued by regional regulatory bodies relating to the use of crop protection chemicals to meet the growing demand for food safety in developed and developing nations.

The use of alternative crop protection measures and implementation of best practices have become a priority and, in turn, have increased agricultural income. The €55,38 billion crop protection market is expected to grow to €76,21 billion by 2023. In 2018, the synthetic pesticide and biopesticide product segments accounted for 90,2% and 9,8% of revenue, respectively. However, with greater adoption of residue-free pesticides, the biopesticides segment is likely to generate 17,7% of the revenue by 2023.

The use of biopesticides in agricultural production and the inclusion of biopesticides in rotation with synthetic pesticides, ensure residue-free food. This demand will, therefore, increase the necessity for biopesticides.

Biopesticide overview

Increasing global demand for safe food products, changing regulatory scenarios for product approvals across different

regions, and the growing adoption of organic farming practices, are key factors driving the need for biopesticides.

"Asia Pacific dominated the global crop protection market with a 41,8% revenue share in 2018, followed by Europe with 22,1% and North America with 15,1%. Latin America, the Middle East and Africa, which constitute the rest of the world (RoW), had a 20,9% revenue share in 2018," says Arun Ramesh, research manager at Visionary Science. "Based on growing demand and increasing population, the market in Asia Pacific is forecast to grow by 6,4% for synthetic pesticides and 23,4% for biopesticides by 2023."

Market challenges

As biopesticides are regulated by the same regulations as synthetic substances in the European Union (EU), there is a need for new provisions and guidelines to facilitate their registration. The market is also challenged by concerns of short shelf life, high cost, and easy degradation.

Successful vendors will look to address these issues and tap further growth opportunities by:

- Developing innovative biopesticides that use living micro-organisms and

plant extracts with complex modes of action and multiple classes.

- Offering effective, innovative, and eco-friendly solutions, as the crop protection market is governed by rigid regulations.
- Delivering integrated products and services, including crop nutrition management and optimisation.
- Creating novel biopesticides that address customer needs, such as long shelf life and new modes of action.
- Improving marketing channels and distribution networks in emerging nations for better visibility.
- Adopting a public-private sector approach to manufacturing and selling eco-friendly biopesticides as alternatives to synthetic pesticides.

Regulatory aspects

Regulatory authorities increasingly scrutinise synthetic pesticides for their toxic impact on the environment, carcinogenic activity, and harmful effects on other biological species, such as insects and aquatic organisms. This scrutiny poses a constant challenge to synthetic pesticides' growth.

Increasing research and development costs and a lack of awareness concerning the use of biopesticides is still a challenge

in developing nations. This hindrance, however, is expected to disappear in the coming years with supporting government initiatives.

Key market activities

The focus of BASF, which produces chemicals for the agricultural sector, focuses on digital tools, offering better agronomic support, and guidance to producers. Bayer's notable acquisition of Monsanto was a milestone in the industry. This is expected to benefit the agricultural community through highly productive, sustainable farming.

Apart from global expansion by multinational corporations through organic and inorganic growth, India is considered to be a potential market for crop protection in future, and regional market participants are increasing. Global organisations, such as Bayer, are planning to establish a network with small producers.

Frost & Sullivan finds that supportive regulations, heightened consumer demand for organic food and next-generation sequencing will drive fresh growth opportunities.

A look at bioherbicides

Analysis by Frost & Sullivan also reveals that a growing resistance to synthetic herbicides, heightened consumer demand for organic food products, and easier residue management, are pivotal factors driving the dynamic global bioherbicides market toward an expected compound annual growth rate (CAGR) of 21,3% between 2018 and 2023. New technologies,

innovation by manufacturers, and supportive regulations for faster product registration are expected to augment bioherbicide adoption rates among producers.

"The advent of next-generation sequencing technologies to identify and characterise new bacterial strains for use in biological control will support a thriving market with novel innovations based on microbes expected to be an effective solution against resistance concerns," says Ramesh.

The use of alternative crop protection measures and implementation of best practices have become a priority, and, in turn, have increased agricultural income.

"To harness growth prospects and ward off strong competition from innovative start-ups, manufacturers are integrating bioherbicide technology into current weed systems, thereby augmenting usage through integrated weed management. They are also focusing on developing new products based on plant extracts."

Overview of the market

In 2018 Europe dominated the global biopesticide market with 33% market share, followed closely by North America with 28,3%. Asia Pacific held a market share of 21,2%, with the RoW holding the remaining 17,5%. Going forward, market prospects in Asia Pacific are set to boom with an estimated CAGR of 25% from 2018 to 2023.

"A double-digit uptick in the Asia Pacific region is primarily driven by consumer awareness of pesticide-free food products, a favourable regulatory environment for organic agriculture, and integrated pest management (IPM) practices," notes Ramesh. "In North America and Europe, key factors include

regulatory and national-level initiatives to support biopesticides and biocontrol products, increasing herbicide resistance and high demand for organic farming and IPM practices."

Vendors can make the most of key prospects in the market by:

- Creating strategies to overcome the existing challenges in bioherbicide product development, such as limited shelf life and uncertain field efficacy.
- Focusing on regions that facilitate faster product registration for biological crop protection products, thereby promoting sustainable agricultural practices.
- Facilitating collaboration between start-ups, large-scale manufacturers, and the public sector to expand consumer access to novel products and benefits associated with the use of biological crop protection solutions.

"Despite immense possibilities, the rate of new product innovation in bioherbicides has been average compared to other sectors such as biofungicides and bioinsecticides," observes Ramesh. "To develop long-term sustainable practices, companies should step up their research and development efforts to uncover novel sources of bioherbicides with scalable technologies and focus on increased bioherbicide shelf life." 🌱

Frost & Sullivan's *Global Crop Protection Market, Forecast to 2023*, analyses the market segments of herbicides, insecticides, fungicides, bioherbicides, bioinsecticides, and biofungicides. It is part of their organisation's global future of agriculture and nutrition research and analysis, which helps organisations to identify a continuous flow of growth opportunities to succeed in an unpredictable future.

The *Global Bioherbicides Market, Forecast to 2023* explores factors and trends that have shaped the global bioherbicides landscape, including challenges and opportunities. The analysis is part of Frost & Sullivan's global Future of Chemicals, Materials and Nutrition Growth Partnership Service programme.

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