

Bionematicides Market Forecasts to 2032 – Global Analysis By Product Type (Microbial Bionematicides, Biochemical, Integrated Formulations, and Other Product Types), Formulation, Crop Type, Infestation Type, Mode of Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Bionematicides Market is accounted for \$793.04 million in 2025 and is expected to reach \$1422.01 million by 2032 growing at a CAGR of 8.7% during the forecast period. Bionematicides are natural products designed to manage plant-parasitic nematodes, which cause significant crop losses. They rely on microorganisms like fungi and bacteria, or their byproducts, to inhibit or eliminate harmful nematodes instead of using synthetic chemicals. These agents are environmentally safe, improve soil quality, and encourage beneficial microbial activity, making them ideal for sustainable farming. Bionematicides can be delivered via soil application, seed treatment, or foliar spraying, providing an effective and eco-conscious solution to protect crops from nematode damage while supporting overall agricultural sustainability.

Market Dynamics:

Driver:

Nematode resistance management

The growing challenge of nematode infestations in agricultural soils is driving demand for effective resistance management strategies. Farmers are increasingly adopting

bionematicides to reduce crop losses and improve yield sustainability. As chemical nematicides face restrictions due to environmental concerns, biological alternatives are gaining traction. Advances in microbial formulations are enhancing the ability to suppress nematode populations across diverse crops. Rising awareness among growers about soil health and integrated pest management is further boosting adoption. The push for eco-friendly solutions aligns with global sustainability goals and regulatory pressures.

Restraint:

Inconsistent field efficacy

Environmental factors such as soil type, moisture, and temperature can significantly influence product effectiveness. Farmers remain cautious due to inconsistent outcomes compared to conventional chemical nematicides. Limited shelf life and storage challenges further restrict widespread adoption. Smaller companies struggle to invest in large-scale trials to validate efficacy across diverse geographies. This inconsistency slows market penetration and reduces confidence among growers. As a result, inconsistent field efficacy remains a major restraint in the growth of the bionematicides sector.

Opportunity:

Seed treatment formulations

By coating seeds with microbial agents, farmers can ensure early-stage defense against nematode attacks. This approach reduces the need for repeated soil applications, lowering costs and improving efficiency. Advances in formulation technology are making seed treatments more stable and compatible with existing agricultural practices. Regulatory bodies are encouraging sustainable seed protection methods, creating favorable conditions for adoption. Emerging markets are witnessing increased demand for treated seeds, especially in horticulture and cash crops. Seed treatment formulations thus represent a significant growth avenue for the industry.

Threat:

Complex regulatory hurdles

Authorities require extensive documentation and multi-year trials to validate safety and

efficacy. Smaller firms often lack the resources to navigate these stringent pathways, slowing innovation. Differences in regional regulations further complicate global commercialization strategies. Integration of novel microbial strains adds additional layers of scrutiny from regulators. Delays in approvals can hinder timely product launches and reduce competitiveness. Consequently, regulatory hurdles remain a persistent threat to market expansion.

Covid-19 Impact:

The pandemic disrupted agricultural supply chains, delaying production and distribution of bionematicides. Lockdowns restricted field trials and slowed regulatory approvals, impacting product commercialization. Farmers faced challenges in accessing biological inputs, leading to temporary reliance on chemical alternatives. However, the crisis accelerated interest in resilient and sustainable farming practices. Governments emphasized food security, indirectly boosting demand for eco-friendly crop protection solutions. Post-pandemic strategies now focus on decentralized production and digital platforms for farmer outreach. Overall, Covid-19 reshaped the market by highlighting the importance of sustainability and supply chain resilience.

The microbial bionematicides segment is expected to be the largest during the forecast period

The microbial bionematicides segment is expected to account for the largest market share during the forecast period, due to its widespread application across cereals, pulses, and horticultural crops ensures strong demand. Microbial agents such as bacteria and fungi are highly effective in suppressing nematode populations. Advances in fermentation and formulation technologies are improving product stability and scalability. Farmers are increasingly adopting microbial solutions due to their eco-friendly profile and compatibility with integrated pest management. Rising restrictions on chemical nematicides further strengthen the appeal of microbial alternatives.

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

Over the forecast period, the horticultural segment is predicted to witness the highest growth rate. High-value crops such as fruits, vegetables, and ornamentals are particularly vulnerable to nematode damage. Farmers are prioritizing biological solutions to protect yields and maintain export quality standards. Rising global demand for organic produce is accelerating adoption of bionematicides in horticulture. Advances in

targeted formulations are improving efficacy in diverse horticultural environments. Favorable government policies supporting sustainable farming practices are further driving growth.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. Strong agricultural infrastructure and high awareness of sustainable practices support adoption. Farmers in the U.S. and Canada are increasingly shifting toward biological crop protection solutions. Regulatory restrictions on chemical nematicides are creating favorable conditions for bionematicides. Strategic collaborations between global players and local distributors are enhancing market penetration. The region also benefits from advanced R&D capabilities and early adoption of innovative technologies.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Rapidly expanding agricultural activities in countries like India and China are driving demand. Farmers are increasingly adopting biological solutions to improve soil health and crop productivity. Government initiatives promoting sustainable farming are accelerating market growth. Rising awareness of organic produce among consumers is boosting adoption of eco-friendly inputs. Local manufacturers are investing in cost-effective formulations tailored to regional needs.

Key players in the market

Some of the key players in Bionematicides Market include Bayer AG, BASF SE, Syngenta AG, Marrone Bio Innovations, Inc., Certis USA, LLC, Valent BioSciences Corporation, Corteva, Inc., UPL Limited, Nufarm Limited, FMC Corporation, BioWorks, Inc., Koppert Biological Systems, Andermatt Biocontrol AG, Novozymes A/S, and Biobest Group NV.

Key Developments:

In January 2026, Bayer and Souffl? Therapeutics™, an innovative biotech company that discovers and develops cell-selective genetic therapies, announced a strategic collaboration and global licensing agreement to advance a heart-targeted small interfering RNA (siRNA) therapy. The companies will collaborate to develop a siRNA-

based treatment for a form of dilated cardiomyopathy, addressing a rare subset of heart disease.

In October 2025, Saudi Agricultural and Livestock Investment Company (SALIC), and Syngenta Crop Protection AG, have signed a Letter of Intent (LOI) to combine their expertise to create a resilient agri-food sector in Saudi Arabia and globally. The LOI aligns with the shared mission of both entities to bolster global food security through strategic partnerships, technology and responsible practices.

Product Types Covered:

Microbial Bionematicides

Biochemical

Integrated Formulations

Other Product Types

Formulations Covered:

Liquid

Dry/Granular

Crop Types Covered:

Cereals & Grains

Fruits & Vegetables

Oilseeds & Pulses

Turf & Ornamentals

Other Crop Types

Infestation Types Covered:

Root-Knot Nematodes

Cyst Nematodes

Lesion Nematodes

Mode of Applications Covered:

Soil Treatment

Seed Treatment

Foliar Spray

Other Application Methods

End Users Covered:

Agricultural

Horticultural

Turf Management

Other End Users

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

Contents

1 EXECUTIVE SUMMARY

2 PREFACE

- 2.1 Abstract
- 2.2 Stake Holders
- 2.3 Research Scope
- 2.4 Research Methodology
 - 2.4.1 Data Mining
 - 2.4.2 Data Analysis
 - 2.4.3 Data Validation
 - 2.4.4 Research Approach
- 2.5 Research Sources
 - 2.5.1 Primary Research Sources
 - 2.5.2 Secondary Research Sources
 - 2.5.3 Assumptions

3 MARKET TREND ANALYSIS

- 3.1 Introduction
- 3.2 Drivers
- 3.3 Restraints
- 3.4 Opportunities
- 3.5 Threats
- 3.6 Product Analysis
- 3.7 End User Analysis
- 3.8 Emerging Markets
- 3.9 Impact of Covid-19

4 PORTERS FIVE FORCE ANALYSIS

- 4.1 Bargaining power of suppliers
- 4.2 Bargaining power of buyers
- 4.3 Threat of substitutes
- 4.4 Threat of new entrants
- 4.5 Competitive rivalry

5 GLOBAL BIONEMATICIDES MARKET, BY PRODUCT TYPE

- 5.1 Introduction
- 5.2 Microbial Bionematicides
- 5.3 Biochemical
- 5.4 Integrated Formulations
- 5.5 Other Product Types

6 GLOBAL BIONEMATICIDES MARKET, BY FORMULATION

- 6.1 Introduction
- 6.2 Liquid
- 6.3 Dry/Granular

7 GLOBAL BIONEMATICIDES MARKET, BY CROP TYPE

- 7.1 Introduction
- 7.2 Cereals & Grains
- 7.3 Fruits & Vegetables
- 7.4 Oilseeds & Pulses
- 7.5 Turf & Ornamentals
- 7.6 Other Crop Types

8 GLOBAL BIONEMATICIDES MARKET, BY INFESTATION TYPE

- 8.1 Introduction
- 8.2 Root-Knot Nematodes
- 8.3 Cyst Nematodes
- 8.4 Lesion Nematodes

9 GLOBAL BIONEMATICIDES MARKET, BY MODE OF APPLICATION

- 9.1 Introduction
- 9.2 Soil Treatment
- 9.3 Seed Treatment
- 9.4 Foliar Spray
- 9.5 Other Application Methods

10 GLOBAL BIONEMATICIDES MARKET, BY END USER

- 10.1 Introduction
- 10.2 Agricultural
- 10.3 Horticultural
- 10.4 Turf Management
- 10.5 Other End Users

11 GLOBAL BIONEMATICIDES MARKET, BY GEOGRAPHY

- 11.1 Introduction
- 11.2 North America
 - 11.2.1 US
 - 11.2.2 Canada
 - 11.2.3 Mexico
- 11.3 Europe
 - 11.3.1 Germany
 - 11.3.2 UK
 - 11.3.3 Italy
 - 11.3.4 France
 - 11.3.5 Spain
 - 11.3.6 Rest of Europe
- 11.4 Asia Pacific
 - 11.4.1 Japan
 - 11.4.2 China
 - 11.4.3 India
 - 11.4.4 Australia
 - 11.4.5 New Zealand
 - 11.4.6 South Korea
 - 11.4.7 Rest of Asia Pacific
- 11.5 South America
 - 11.5.1 Argentina
 - 11.5.2 Brazil
 - 11.5.3 Chile
 - 11.5.4 Rest of South America
- 11.6 Middle East & Africa
 - 11.6.1 Saudi Arabia
 - 11.6.2 UAE
 - 11.6.3 Qatar
 - 11.6.4 South Africa

11.6.5 Rest of Middle East & Africa

12 KEY DEVELOPMENTS

12.1 Agreements, Partnerships, Collaborations and Joint Ventures

12.2 Acquisitions & Mergers

12.3 New Product Launch

12.4 Expansions

12.5 Other Key Strategies

13 COMPANY PROFILING

13.1 Bayer AG

13.2 BASF SE

13.3 Syngenta AG

13.4 Marrone Bio Innovations, Inc.

13.5 Certis USA, LLC

13.6 Valent BioSciences Corporation

13.7 Corteva, Inc.

13.8 UPL Limited

13.9 Nufarm Limited

13.10 FMC Corporation

13.11 BioWorks, Inc.

13.12 Koppert Biological Systems

13.13 Andermatt Biocontrol AG

13.14 Novozymes A/S

13.15 Biobest Group NV

List Of Tables

LIST OF TABLES

- Table 1 Global Bionematicides Market Outlook, By Region (2024-2032) (\$MN)
- Table 2 Global Bionematicides Market Outlook, By Product Type (2024-2032) (\$MN)
- Table 3 Global Bionematicides Market Outlook, By Microbial Bionematicides (2024-2032) (\$MN)
- Table 4 Global Bionematicides Market Outlook, By Biochemical (2024-2032) (\$MN)
- Table 5 Global Bionematicides Market Outlook, By Integrated Formulations (2024-2032) (\$MN)
- Table 6 Global Bionematicides Market Outlook, By Other Product Types (2024-2032) (\$MN)
- Table 7 Global Bionematicides Market Outlook, By Formulation (2024-2032) (\$MN)
- Table 8 Global Bionematicides Market Outlook, By Liquid (2024-2032) (\$MN)
- Table 9 Global Bionematicides Market Outlook, By Dry/Granular (2024-2032) (\$MN)
- Table 10 Global Bionematicides Market Outlook, By Crop Type (2024-2032) (\$MN)
- Table 11 Global Bionematicides Market Outlook, By Cereals & Grains (2024-2032) (\$MN)
- Table 12 Global Bionematicides Market Outlook, By Fruits & Vegetables (2024-2032) (\$MN)
- Table 13 Global Bionematicides Market Outlook, By Oilseeds & Pulses (2024-2032) (\$MN)
- Table 14 Global Bionematicides Market Outlook, By Turf & Ornamentals (2024-2032) (\$MN)
- Table 15 Global Bionematicides Market Outlook, By Other Crop Types (2024-2032) (\$MN)
- Table 16 Global Bionematicides Market Outlook, By Infestation Type (2024-2032) (\$MN)
- Table 17 Global Bionematicides Market Outlook, By Root-Knot Nematodes (2024-2032) (\$MN)
- Table 18 Global Bionematicides Market Outlook, By Cyst Nematodes (2024-2032) (\$MN)
- Table 19 Global Bionematicides Market Outlook, By Lesion Nematodes (2024-2032) (\$MN)
- Table 20 Global Bionematicides Market Outlook, By Mode of Application (2024-2032) (\$MN)
- Table 21 Global Bionematicides Market Outlook, By Soil Treatment (2024-2032) (\$MN)
- Table 22 Global Bionematicides Market Outlook, By Seed Treatment (2024-2032)

(\$MN)

Table 23 Global Bionematicides Market Outlook, By Foliar Spray (2024-2032) (\$MN)

Table 24 Global Bionematicides Market Outlook, By Other Application Methods (2024-2032) (\$MN)

Table 25 Global Bionematicides Market Outlook, By End User (2024-2032) (\$MN)

Table 26 Global Bionematicides Market Outlook, By Agricultural (2024-2032) (\$MN)

Table 27 Global Bionematicides Market Outlook, By Horticultural (2024-2032) (\$MN)

Table 28 Global Bionematicides Market Outlook, By Turf Management (2024-2032) (\$MN)

Table 29 Global Bionematicides Market Outlook, By Other End Users (2024-2032) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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