

# **Biorational Crop Protection Global Market Insights 2025, Analysis and Forecast to 2030, by Market Participants, Regions, Technology, Application, Product Type**

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## **Abstracts**

### **Biorational Crop Protection Market Summary**

#### **Introduction**

Biorational crop protection products are eco-friendly pest management solutions derived from natural sources like microbes, biochemicals, and plants, offering low environmental impact and targeted pest control. Integral to sustainable agriculture, they feature reduced toxicity and high specificity. Available as microbial pesticides, biochemical pesticides, plant-incorporated protectants (PIPs), and other types, they serve fruits & vegetables, cereals & pulses, and other crops. The market is driven by organic farming growth, regulatory restrictions on synthetic chemicals, and pest resistance concerns, with innovations in efficacy and application advancing progress.

#### **Market Size and Growth Forecast**

The global Biorational Crop Protection market is valued at USD 4.6-5.1 billion in 2025, with a projected CAGR of 8.0%-9.0% from 2025 to 2030, reaching USD 6.8-7.9 billion by 2030. Growth reflects rising demand for sustainable pest control.

#### **Regional Analysis**

North America holds 30-35%, growing at 7-8%, led by the US with strong organic farming trends and regulatory support, alongside Canada's sustainability focus. Europe accounts for 25-30%, growing at 7.5-8.5%, with Germany, France, and the UK excelling due to stringent EU regulations and green policies. Asia Pacific, at 25-30%, grows fastest at 9-10%, driven by China's organic push, India's agricultural expansion, and Japan's quality emphasis. The Rest of the World, 10-15%, grows at 8-9%, with Brazil

and Australia advancing via sustainable agriculture. North America and Europe favor microbial products; Asia Pacific prioritizes affordability.

### Product Type Analysis

The market includes Microbial Pesticides, Biochemical Pesticides, PIPs, and Others. Microbial Pesticides, growing at 8.5-9.5%, lead with high efficacy and trends toward microbial strain optimization. Biochemical Pesticides, at 8-9%, rise with natural ingredient demand and formulation advances. PIPs, at 7.5-8.5%, grow with biotech adoption and genetic enhancements. Others, at 7-8%, cater to niche needs with innovative blends. Trends focus on efficacy and sustainability across types.

### Application Analysis

Applications are fruits & vegetables, cereals & pulses, and other crops. Fruits & Vegetables, growing at 8.5-9.5%, dominate with organic demand, favoring microbial types. Cereals & Pulses, at 7.5-8.5%, rise with staple crop needs, using biochemical types. Other Crops, at 8-9%, grow with specialty uses and PIPs. Trends emphasize sustainable pest management, with fruits & vegetables driving microbial adoption.

### Key Market Players

Leading companies in the Biorational Crop Protection market include:

**Bayer Crop Science:** A German powerhouse, Bayer offers a broad range of biorational products, including microbial and biochemical pesticides. Known for integrating cutting-edge research with sustainable solutions, it serves global fruits & vegetables markets, enhancing crop yields with eco-friendly pest control tailored to modern farming needs.

**Valent BioSciences:** A US-based innovator, Valent specializes in microbial biopesticides derived from natural strains. With a strong focus on efficacy and environmental safety, it supports North America's organic growers, offering targeted solutions for cereals & pulses and fruits & vegetables, backed by extensive technical expertise.

**Certis USA:** A US leader, Certis provides biorational pesticides with a focus on natural efficacy and low residue. Renowned for its microbial and biochemical offerings, it serves fruits & vegetables growers across North America and beyond, delivering reliable pest management for organic and conventional farming.

**Syngenta:** A Swiss global player, Syngenta offers advanced biorational solutions, including biochemicals and PIPs. With a reputation for innovation, it supports large-scale agriculture in Europe and Asia, providing sustainable pest control options for cereals & pulses and specialty crops worldwide.

**Koppert:** A Dutch firm, Koppert excels in microbial biopesticides and biological control systems. Known for its sustainable approach, it serves Europe's fruits & vegetables markets with tailored solutions, leveraging natural predators and microbes to enhance

crop protection and yield.

**BASF:** A German giant, BASF provides biochemical biopesticides with high efficacy and sustainability. With a global presence, it caters to cereals & pulses growers, offering innovative pest management solutions that align with environmental regulations and modern farming practices.

**Andermatt Biocontrol:** A Swiss company, Andermatt specializes in microbial biopesticides for organic farming. Renowned for its natural efficacy, it serves Europe's fruits & vegetables growers with eco-friendly products, supporting sustainable agriculture with reliable pest control options.

**Corteva Agriscience:** A US leader, Corteva offers biorational solutions, including PIPs and microbial pesticides. With a focus on biotech innovation, it supports global agriculture, providing advanced pest control for cereals & pulses and fruits & vegetables with sustainable, high-performance products.

**FMC Corporation:** A US firm, FMC delivers biochemical biopesticides for targeted pest management. Known for efficacy and safety, it serves North America's fruits & vegetables markets with practical solutions, enhancing crop protection for organic and conventional systems.

**Isagro:** An Italian company, Isagro provides natural biorational pesticides with a focus on biochemicals. With a reputation for eco-friendly innovation, it supports Europe's growers, offering sustainable pest control for specialty crops and fruits & vegetables.

**Bioceres Crop Solutions:** An Argentine firm, Bioceres offers biopesticides with biotech-driven efficacy. Known for supporting Latin America's cereals & pulses markets, it provides sustainable solutions that enhance crop resilience and yield with natural pest control.

**Chengdu New Sun:** A Chinese company, Chengdu New Sun delivers cost-effective microbial biopesticides. With a focus on affordability, it supports China's farming sector, offering practical pest control solutions for fruits & vegetables and cereals & pulses.

**Som Phytopharma India:** An Indian firm, Som Phytopharma provides affordable biochemical biopesticides. Known for supporting India's fruits & vegetables growers, it offers natural pest control options tailored to local agricultural needs with cost-effective products.

**Novozymes:** A Danish leader, Novozymes offers microbial biopesticides with biotech innovation. With a global reach, it supports sustainable agriculture, providing high-efficacy solutions for cereals & pulses and fruits & vegetables markets.

**Coromandel:** An Indian company, Coromandel delivers biopesticides for crop protection. With a focus on affordability, it supports India's cereals & pulses markets with reliable, eco-friendly pest control options for small and large growers.

**SEIPASA:** A Spanish firm, SEIPASA provides natural biopesticides with high efficacy. Known for sustainability, it serves Europe's fruits & vegetables growers with innovative

biochemical solutions, enhancing crop protection organically.

**Jiangsu Luye:** A Chinese supplier, Jiangsu Luye offers cost-effective microbial biopesticides. With a focus on practical solutions, it supports China's farming sector with pest control options for cereals & pulses and other crops.

**Jiangxi Xinlong Biological:** A Chinese company, Jiangxi Xinlong delivers affordable biopesticides with natural efficacy. Known for reliability, it serves China's fruits & vegetables markets with eco-friendly pest management solutions.

**Bionema:** A UK firm, Bionema provides microbial biopesticides for sustainable pest control. With a focus on innovation, it serves Europe's organic farming sector, offering effective solutions for fruits & vegetables with a natural approach.

These companies compete on efficacy, sustainability, and cost, advancing the market through innovation and strategic partnerships.

### Porter's Five Forces Analysis

New entrants face a low-to-medium threat due to expertise and regulatory barriers, though niche players may emerge. Substitutes like chemical pesticides pose a moderate threat, countered by organic demands. Buyer power is medium to high, with large growers negotiating, unlike smaller farms. Supplier power is medium, with natural inputs offset by processing needs. Rivalry is high, driven by efficacy and cost differentiation.

### Market Opportunities and Challenges

#### Opportunities

Organic farming growth drives biorational product demand.

Advances in efficacy and application boost appeal.

Emerging markets in Asia Pacific expand with sustainable agriculture.

#### Challenges

High costs of advanced products limit adoption in budget regions.

Regulatory compliance increases entry complexity and costs.

Competition from chemical pesticides pressures cost-effectiveness.

## Contents

### **CHAPTER 1 EXECUTIVE SUMMARY**

### **CHAPTER 2 ABBREVIATION AND ACRONYMS**

### **CHAPTER 3 PREFACE**

- 3.1 Research Scope
- 3.2 Research Sources
  - 3.2.1 Data Sources
  - 3.2.2 Assumptions
- 3.3 Research Method
- Chapter Four Market Landscape
- 4.1 Market Overview
- 4.2 Classification/Types
- 4.3 Application/End Users

### **CHAPTER 5 MARKET TREND ANALYSIS**

- 5.1 Introduction
- 5.2 Drivers
- 5.3 Restraints
- 5.4 Opportunities
- 5.5 Threats

### **CHAPTER 6 INDUSTRY CHAIN ANALYSIS**

- 6.1 Upstream/Suppliers Analysis
- 6.2 Biorational Crop Protection Analysis
  - 6.2.1 Technology Analysis
  - 6.2.2 Cost Analysis
  - 6.2.3 Market Channel Analysis
- 6.3 Downstream Buyers/End Users

### **CHAPTER 7 LATEST MARKET DYNAMICS**

- 7.1 Latest News
- 7.2 Merger and Acquisition

7.3 Planned/Future Project

7.4 Policy Dynamics

## **CHAPTER 8 HISTORICAL AND FORECAST BIORATIONAL CROP PROTECTION MARKET IN NORTH AMERICA (2020-2030)**

8.1 Biorational Crop Protection Market Size

8.2 Biorational Crop Protection Market by End Use

8.3 Competition by Players/Suppliers

8.4 Biorational Crop Protection Market Size by Type

8.5 Key Countries Analysis

8.5.1 United States

8.5.2 Canada

8.5.3 Mexico

## **CHAPTER 9 HISTORICAL AND FORECAST BIORATIONAL CROP PROTECTION MARKET IN SOUTH AMERICA (2020-2030)**

9.1 Biorational Crop Protection Market Size

9.2 Biorational Crop Protection Market by End Use

9.3 Competition by Players/Suppliers

9.4 Biorational Crop Protection Market Size by Type

9.5 Key Countries Analysis

9.5.1 Brazil

9.5.2 Argentina

9.5.3 Chile

9.5.4 Peru

## **CHAPTER 10 HISTORICAL AND FORECAST BIORATIONAL CROP PROTECTION MARKET IN ASIA & PACIFIC (2020-2030)**

10.1 Biorational Crop Protection Market Size

10.2 Biorational Crop Protection Market by End Use

10.3 Competition by Players/Suppliers

10.4 Biorational Crop Protection Market Size by Type

10.5 Key Countries Analysis

10.5.1 China

10.5.2 India

10.5.3 Japan

- 10.5.4 South Korea
- 10.5.5 Southeast Asia
- 10.5.6 Australia

## **CHAPTER 11 HISTORICAL AND FORECAST BIORATIONAL CROP PROTECTION MARKET IN EUROPE (2020-2030)**

- 11.1 Biorational Crop Protection Market Size
- 11.2 Biorational Crop Protection Market by End Use
- 11.3 Competition by Players/Suppliers
- 11.4 Biorational Crop Protection Market Size by Type
- 11.5 Key Countries Analysis
  - 11.5.1 Germany
  - 11.5.2 France
  - 11.5.3 United Kingdom
  - 11.5.4 Italy
  - 11.5.5 Spain
  - 11.5.6 Belgium
  - 11.5.7 Netherlands
  - 11.5.8 Austria
  - 11.5.9 Poland
  - 11.5.10 Russia

## **CHAPTER 12 HISTORICAL AND FORECAST BIORATIONAL CROP PROTECTION MARKET IN MEA (2020-2030)**

- 12.1 Biorational Crop Protection Market Size
- 12.2 Biorational Crop Protection Market by End Use
- 12.3 Competition by Players/Suppliers
- 12.4 Biorational Crop Protection Market Size by Type
- 12.5 Key Countries Analysis
  - 12.5.1 Egypt
  - 12.5.2 Israel
  - 12.5.3 South Africa
  - 12.5.4 Gulf Cooperation Council Countries
  - 12.5.5 Turkey

## **CHAPTER 13 SUMMARY FOR GLOBAL BIORATIONAL CROP PROTECTION MARKET (2020-2025)**



- 13.1 Biorational Crop Protection Market Size
- 13.2 Biorational Crop Protection Market by End Use
- 13.3 Competition by Players/Suppliers
- 13.4 Biorational Crop Protection Market Size by Type

## **CHAPTER 14 GLOBAL BIORATIONAL CROP PROTECTION MARKET FORECAST (2025-2030)**

- 14.1 Biorational Crop Protection Market Size Forecast
- 14.2 Biorational Crop Protection Application Forecast
- 14.3 Competition by Players/Suppliers
- 14.4 Biorational Crop Protection Type Forecast

## **CHAPTER 15 ANALYSIS OF GLOBAL KEY VENDORS**

- 15.1 Bayer Crop Science
  - 15.1.1 Company Profile
  - 15.1.2 Main Business and Biorational Crop Protection Information
  - 15.1.3 SWOT Analysis of Bayer Crop Science
  - 15.1.4 Bayer Crop Science Biorational Crop Protection Revenue, Gross Margin and Market Share (2020-2025)
- 15.2 Valent BioSciences
  - 15.2.1 Company Profile
  - 15.2.2 Main Business and Biorational Crop Protection Information
  - 15.2.3 SWOT Analysis of Valent BioSciences
  - 15.2.4 Valent BioSciences Biorational Crop Protection Revenue, Gross Margin and Market Share (2020-2025)
- 15.3 Certis USA
  - 15.3.1 Company Profile
  - 15.3.2 Main Business and Biorational Crop Protection Information
  - 15.3.3 SWOT Analysis of Certis USA
  - 15.3.4 Certis USA Biorational Crop Protection Revenue, Gross Margin and Market Share (2020-2025)
- 15.4 Syngenta
  - 15.4.1 Company Profile
  - 15.4.2 Main Business and Biorational Crop Protection Information
  - 15.4.3 SWOT Analysis of Syngenta
  - 15.4.4 Syngenta Biorational Crop Protection Revenue, Gross Margin and Market



## Share (2020-2025)

### 15.5 Koppert

#### 15.5.1 Company Profile

#### 15.5.2 Main Business and Biorational Crop Protection Information

#### 15.5.3 SWOT Analysis of Koppert

#### 15.5.4 Koppert Biorational Crop Protection Revenue, Gross Margin and Market Share

## (2020-2025)

### 15.6 BASF

#### 15.6.1 Company Profile

#### 15.6.2 Main Business and Biorational Crop Protection Information

#### 15.6.3 SWOT Analysis of BASF

#### 15.6.4 BASF Biorational Crop Protection Revenue, Gross Margin and Market Share

## (2020-2025)

### 15.7 Andermatt Biocontrol

#### 15.7.1 Company Profile

#### 15.7.2 Main Business and Biorational Crop Protection Information

#### 15.7.3 SWOT Analysis of Andermatt Biocontrol

#### 15.7.4 Andermatt Biocontrol Biorational Crop Protection Revenue, Gross Margin and

## Market Share (2020-2025)

### 15.8 Corteva Agriscience

#### 15.8.1 Company Profile

#### 15.8.2 Main Business and Biorational Crop Protection Information

#### 15.8.3 SWOT Analysis of Corteva Agriscience

#### 15.8.4 Corteva Agriscience Biorational Crop Protection Revenue, Gross Margin and

## Market Share (2020-2025)

### 15.9 FMC Corporation

#### 15.9.1 Company Profile

#### 15.9.2 Main Business and Biorational Crop Protection Information

#### 15.9.3 SWOT Analysis of FMC Corporation

#### 15.9.4 FMC Corporation Biorational Crop Protection Revenue, Gross Margin and

## Market Share (2020-2025)

### 15.10 Isagro

#### 15.10.1 Company Profile

#### 15.10.2 Main Business and Biorational Crop Protection Information

#### 15.10.3 SWOT Analysis of Isagro

#### 15.10.4 Isagro Biorational Crop Protection Revenue, Gross Margin and Market Share

## (2020-2025)

### 15.11 Bioceres Crop Solutions

#### 15.11.1 Company Profile

15.11.2 Main Business and Biorational Crop Protection Information
15.11.3 SWOT Analysis of Bioceres Crop Solutions
15.11.4 Bioceres Crop Solutions Biorational Crop Protection Revenue, Gross Margin and Market Share (2020-2025)
15.12 Chengdu New Sun
15.12.1 Company Profile
15.12.2 Main Business and Biorational Crop Protection Information
15.12.3 SWOT Analysis of Chengdu New Sun
15.12.4 Chengdu New Sun Biorational Crop Protection Revenue, Gross Margin and Market Share (2020-2025)
Please ask for sample pages for full companies list
Tables and Figures
Table Abbreviation and Acronyms
Table Research Scope of Biorational Crop Protection Report
Table Data Sources of Biorational Crop Protection Report
Table Major Assumptions of Biorational Crop Protection Report
Figure Market Size Estimated Method
Figure Major Forecasting Factors
Figure Biorational Crop Protection Picture
Table Biorational Crop Protection Classification
Table Biorational Crop Protection Applications
Table Drivers of Biorational Crop Protection Market
Table Restraints of Biorational Crop Protection Market
Table Opportunities of Biorational Crop Protection Market
Table Threats of Biorational Crop Protection Market
Table Covid-19 Impact For Biorational Crop Protection Market
Table Raw Materials Suppliers
Table Different Production Methods of Biorational Crop Protection
Table Cost Structure Analysis of Biorational Crop Protection
Table Key End Users
Table Latest News of Biorational Crop Protection Market
Table Merger and Acquisition
Table Planned/Future Project of Biorational Crop Protection Market
Table Policy of Biorational Crop Protection Market
Table 2020-2030 North America Biorational Crop Protection Market Size
Figure 2020-2030 North America Biorational Crop Protection Market Size and CAGR
Table 2020-2030 North America Biorational Crop Protection Market Size by Application
Table 2020-2025 North America Biorational Crop Protection Key Players Revenue
Table 2020-2025 North America Biorational Crop Protection Key Players Market Share

Table 2020-2030 North America Biorational Crop Protection Market Size by Type
Table 2020-2030 United States Biorational Crop Protection Market Size
Table 2020-2030 Canada Biorational Crop Protection Market Size
Table 2020-2030 Mexico Biorational Crop Protection Market Size
Table 2020-2030 South America Biorational Crop Protection Market Size
Figure 2020-2030 South America Biorational Crop Protection Market Size and CAGR
Table 2020-2030 South America Biorational Crop Protection Market Size by Application
Table 2020-2025 South America Biorational Crop Protection Key Players Revenue
Table 2020-2025 South America Biorational Crop Protection Key Players Market Share
Table 2020-2030 South America Biorational Crop Protection Market Size by Type
Table 2020-2030 Brazil Biorational Crop Protection Market Size
Table 2020-2030 Argentina Biorational Crop Protection Market Size
Table 2020-2030 Chile Biorational Crop Protection Market Size
Table 2020-2030 Peru Biorational Crop Protection Market Size
Table 2020-2030 Asia & Pacific Biorational Crop Protection Market Size
Figure 2020-2030 Asia & Pacific Biorational Crop Protection Market Size and CAGR
Table 2020-2030 Asia & Pacific Biorational Crop Protection Market Size by Application
Table 2020-2025 Asia & Pacific Biorational Crop Protection Key Players Revenue
Table 2020-2025 Asia & Pacific Biorational Crop Protection Key Players Market Share
Table 2020-2030 Asia & Pacific Biorational Crop Protection Market Size by Type
Table 2020-2030 China Biorational Crop Protection Market Size
Table 2020-2030 India Biorational Crop Protection Market Size
Table 2020-2030 Japan Biorational Crop Protection Market Size
Table 2020-2030 South Korea Biorational Crop Protection Market Size
Table 2020-2030 Southeast Asia Biorational Crop Protection Market Size
Table 2020-2030 Australia Biorational Crop Protection Market Size
Table 2020-2030 Europe Biorational Crop Protection Market Size
Figure 2020-2030 Europe Biorational Crop Protection Market Size and CAGR
Table 2020-2030 Europe Biorational Crop Protection Market Size by Application
Table 2020-2025 Europe Biorational Crop Protection Key Players Revenue
Table 2020-2025 Europe Biorational Crop Protection Key Players Market Share
Table 2020-2030 Europe Biorational Crop Protection Market Size by Type
Table 2020-2030 Germany Biorational Crop Protection Market Size
Table 2020-2030 France Biorational Crop Protection Market Size
Table 2020-2030 United Kingdom Biorational Crop Protection Market Size
Table 2020-2030 Italy Biorational Crop Protection Market Size
Table 2020-2030 Spain Biorational Crop Protection Market Size
Table 2020-2030 Belgium Biorational Crop Protection Market Size
Table 2020-2030 Netherlands Biorational Crop Protection Market Size

Table 2020-2030 Austria Biorational Crop Protection Market Size  
Table 2020-2030 Poland Biorational Crop Protection Market Size  
Table 2020-2030 Russia Biorational Crop Protection Market Size  
Table 2020-2030 MEA Biorational Crop Protection Market Size  
Figure 2020-2030 MEA Biorational Crop Protection Market Size and CAGR  
Table 2020-2030 MEA Biorational Crop Protection Market Size by Application  
Table 2020-2025 MEA Biorational Crop Protection Key Players Revenue  
Table 2020-2025 MEA Biorational Crop Protection Key Players Market Share  
Table 2020-2030 MEA Biorational Crop Protection Market Size by Type  
Table 2020-2030 Egypt Biorational Crop Protection Market Size  
Table 2020-2030 Israel Biorational Crop Protection Market Size  
Table 2020-2030 South Africa Biorational Crop Protection Market Size  
Table 2020-2030 Gulf Cooperation Council Countries Biorational Crop Protection Market Size  
Table 2020-2030 Turkey Biorational Crop Protection Market Size  
Table 2020-2025 Global Biorational Crop Protection Market Size by Region  
Table 2020-2025 Global Biorational Crop Protection Market Size Share by Region  
Table 2020-2025 Global Biorational Crop Protection Market Size by Application  
Table 2020-2025 Global Biorational Crop Protection Market Share by Application  
Table 2020-2025 Global Biorational Crop Protection Key Vendors Revenue  
Figure 2020-2025 Global Biorational Crop Protection Market Size and Growth Rate  
Table 2020-2025 Global Biorational Crop Protection Key Vendors Market Share  
Table 2020-2025 Global Biorational Crop Protection Market Size by Type  
Table 2020-2025 Global Biorational Crop Protection Market Share by Type  
Table 2025-2030 Global Biorational Crop Protection Market Size by Region  
Table 2025-2030 Global Biorational Crop Protection Market Size Share by Region  
Table 2025-2030 Global Biorational Crop Protection Market Size by Application  
Table 2025-2030 Global Biorational Crop Protection Market Share by Application  
Table 2025-2030 Global Biorational Crop Protection Key Vendors Revenue  
Figure 2025-2030 Global Biorational Crop Protection Market Size and Growth Rate  
Table 2025-2030 Global Biorational Crop Protection Key Vendors Market Share  
Table 2025-2030 Global Biorational Crop Protection Market Size by Type  
Table 2025-2030 Biorational Crop Protection Global Market Share by Type

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