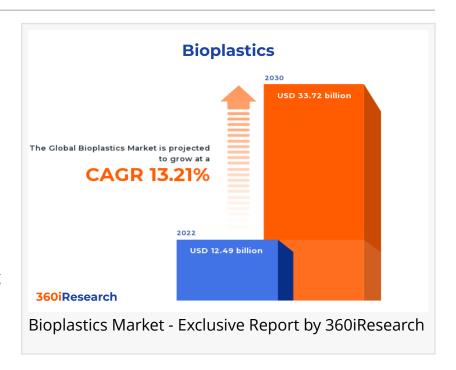


# Bioplastics Market worth \$33.72 billion by 2030, growing at a CAGR of 13.21% - Exclusive Report by 360iResearch

The Global Bioplastics Market to grow from USD 12.49 billion in 2022 to USD 33.72 billion by 2030, at a CAGR of 13.21%.

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Market by Raw Material (Aliphatic
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Bioplastics are materials derived from renewable sources such as plants, microorganisms, and agricultural waste that can function as alternatives to conventional plastics produced from fossil fuels. They exhibit similar properties to traditional plastics regarding flexibility, durability, and lightweight performance, making them suitable for various applications in packaging, automotive components, electronics, agriculture, and medical devices. Increasing environmental concerns and stricter regulations regarding plastic waste disposal have led to a higher demand for eco-friendly alternatives such as bioplastics. Rising public awareness about using sustainable products also drives the adoption of bioplastics. However, the production cost of bioplastics is higher than that of conventional plastics due to feedstock prices, economies of scale, and investment in research & development. Moreover, the development of new application areas for

bioplastics and research to develop high-performance biopolymers with enhanced properties can broaden their adoption across various industries.

Raw Material: Proliferating demand for cellulose-based bioplastics Aliphatic polyesters are biodegradable and biocompatible polymers derived from renewable resources, including corn or sugarcane, and include polylactic acid (PLA) and polyhydroxyalkanoates (PHA). These materials have gained popularity in various industries, including packaging, agriculture, textiles, and medical applications, due to their enhanced mechanical properties and eco-friendly nature. PLA is widely used for single-use disposable items such as food containers, whereas PHA is utilized in the production of biodegradable films. Cellulose-based bioplastics are derived from plant-derived cellulose fibers, which offer high tensile strength and good barrier properties against oxygen and water vapor and include cellulose acetate (CA), cellulose acetate butyrate (CAB), and cellophane films. These materials are preferred in applications where transparency or flexibility is important, such as eyewear frames or flexible packaging solutions for food products. Starch-based plastics are manufactured by blending native starch with other biopolymers to improve their mechanical properties. These materials show excellent film-forming capabilities, making them suitable for uses such as shopping bags or agricultural mulch films that require a short service life before becoming compostable. Sugarcane-based bioplastics, primarily polyethylene (PE) derived from bioethanol, are produced using sugarcane as a feedstock. It exhibits similar properties to conventional PE and is used in applications such as consumer goods packaging, automotive components, and construction materials. Aliphatic polyesters have versatile applications and inherent biodegradability. PLA has enhanced compatibility with various processing techniques and widespread market acceptance. Cellulose-based bioplastics are popular for their transparency and flexibility, while starch-based materials are used in short-service life applications. Sugarcanederived Bio-PE offers a more sustainable alternative to traditional petrochemical plastics without compromising performance or application scope.

Degradability: Significant penetration of compostable bioplastics

Biodegradable bioplastics are designed to break down naturally into water, carbon dioxide, and biomass under the action of microorganisms. These materials are ideal for applications where disposal in natural environments is required or preferred. Some common biodegradable bioplastics include Polyhydroxyalkanoates (PHA), Polylactic Acid (PLA), and Polybutylene Succinate (PBS). Compostable bioplastics are a subcategory of biodegradable plastics that decompose entirely under specific composting conditions within a set time frame, leaving no toxic residues behind. These materials meet strict standards and can be industrially composted. Compostable bioplastics are well-suited for food service items, such as cutlery, plates, and cups, as well as compostable bags used for collecting organic waste. Degradable plastics break down through physical or chemical processes; however, they may not necessarily be derived from renewable resources or decompose into environmentally safe byproducts. Oxodegradable plastics and photodegradable plastics are often petroleum-based and treated with additives that enable fragmentation under specific conditions, such as exposure to heat, light, or oxygen. Biodegradable and compostable bioplastics offer more environmentally friendly options than

degradable plastics, as they decompose into harmless byproducts and do not contribute to microplastic pollution.

Processing Method: Growing popularity of injection molding in bioplastic manufacturing Extrusion is a continuous process where raw bioplastic materials, in the form of pellets or powder, are melted and forced through a shaping die to produce films, sheets, tubes, profiles, and fibers. This method is preferred when manufacturing packaging materials, construction components, automotive parts, and textiles. Extrusion is ideal for large-scale production with relatively low tooling costs. It allows for flexible designs with unique cross-sectional shapes and permits continuous production without size limitations. Injection molding involves injecting molten bioplastic material under high pressure into a mold cavity shaped as the desired end product. It's commonly used for producing automotive components, household appliances, consumer electronics enclosures, toys, medical devices, and disposable cutlery. Injection molding offers precise control over design details with high surface finish quality and dimensional accuracy. Extrusion caters to simpler geometries and larger continuous applications, while injection molding provides higher precision and flexibility for intricate designs.

### End-User: Expanding applications of bioplastics in healthcare

The agriculture sector has a growing need for bioplastics due to environmental and economic concerns, including reducing plastic waste and raising the sustainability of agricultural practices. Biodegradable mulch films, seed coatings, twine, and stakes are bioplastic applications in agriculture. Automakers increasingly prefer bioplastics as they aim to reduce vehicle weight, decrease carbon emissions, and promote sustainability. Biopolymers such as PLA or bio-based polyamides find applications in interior parts such as seat cushions and dashboard components. Consumer goods manufacturers adopt bioplastics for sustainable packaging solutions across electronics, personal care products, and toy industries. Bioplastics are increasingly utilized in the healthcare sector for applications, including medical devices, implants, and disposable products. The preference stems from their biocompatibility and reduced carbon footprint. The packaging industry is the largest consumer of bioplastics due to consumer demand and regulatory pressure for sustainable alternatives to traditional plastics. Key applications include food packaging, beverage bottles, shopping bags, and biodegradable films. Bioplastics play a significant role in the textile industry due to their biodegradability and reduced environmental impact compared to synthetic fibers such as polyester or nylon. Applications range from clothing fibers, including polylactic acid (PLA), and footwear components.

# Regional Insights:

The bioplastic market is evolving in the Americas with a strong focus on sustainability and reducing plastic pollution and investments in research and development (R&D) for innovative bioplastic solutions. The Europe, Middle East, and Africa region exhibits a varied landscape for bioplastics development owing to the efforts towards a circular economy by implementing policies and introducing legislation encouraging innovation in bioplastics. Africa, though currently having a small share of the global bioplastics market, offers considerable growth

potential due to increasing consumer awareness of environmental concerns and regional governments' policy initiatives against single-use plastics. The Asia Pacific region is witnessing rapid bioplastic advancements, primarily owing to the focus on reducing plastic waste, leading to growing demand for biodegradable materials. Besides, ongoing 3D printing of bioplastics and expanding applications in healthcare are anticipated to boost the demand for bioplastics worldwide.

## **FPNV Positioning Matrix:**

The FPNV Positioning Matrix is essential for assessing the Bioplastics Market. It provides a comprehensive evaluation of vendors by examining key metrics within Business Strategy and Product Satisfaction, allowing users to make informed decisions based on their specific needs. This advanced analysis then organizes these vendors into four distinct quadrants, which represent varying levels of success: Forefront (F), Pathfinder (P), Niche (N), or Vital(V).

# Market Share Analysis:

The Market Share Analysis offers an insightful look at the current state of vendors in the Bioplastics Market. By comparing vendor contributions to overall revenue, customer base, and other key metrics, we can give companies a greater understanding of their performance and what they are up against when competing for market share. The analysis also sheds light on just how competitive any given sector is about accumulation, fragmentation dominance, and amalgamation traits over the base year period studied.

# Key Company Profiles:

The report delves into recent significant developments in the Bioplastics Market, highlighting leading vendors and their innovative profiles. These include Arkema S.A., Avantium N.V, BASF SE, Bewi Group, Bio-on S.p.A., Biome Bioplastics Limited, Braskem SA, Carbios, Celanese Corporation, Clondalkin Group Holdings B.V., Danimer Scientific, Eastman Chemical Company, FKuR Kunststoff GmbH, GC International by PTT Global Chemical PLC, Good Natured Products Inc., Green Dot Bioplastics Inc., Ilkwang Polymer Co., Ltd., Kuraray Co., Ltd., Mitsubishi Chemical Corporation, Natur-Tec by Northern Technologies International Corporation, NatureWorks LLC, Neste Oyj, Novamont SpA, Plantic Technologies Ltd., Roquette Frères, TianAn Biologic Materials Co., Ltd., Toray Industries Inc., TotalEnergies Corbion BV, and UrthPact, LLC.

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# Market Segmentation & Coverage:

This research report categorizes the Bioplastics Market in order to forecast the revenues and

analyze trends in each of following sub-markets:

Based on Raw Material, market is studied across Aliphatic Polyesters, Cellulose-Based, Starch-Based, and Sugarcane-Based. The Aliphatic Polyesters is projected to witness significant market share during forecast period.

Based on Degradability, market is studied across Biodegradable, Compostable, and Degradable. The Degradable is projected to witness significant market share during forecast period.

Based on Processing Method, market is studied across Extrusion and Injection Molding. The Injection Molding is projected to witness significant market share during forecast period.

Based on End-User, market is studied across Agriculture, Automotive, Consumer Goods, Healthcare, Packaging, and Textile. The Textile is projected to witness significant market share during forecast period.

Based on Region, market is studied across Americas, Asia-Pacific, and Europe, Middle East & Africa. The Americas is further studied across Argentina, Brazil, Canada, Mexico, and United States. The United States is further studied across California, Florida, Illinois, New York, Ohio, Pennsylvania, and Texas. The Asia-Pacific is further studied across Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam. The Europe, Middle East & Africa is further studied across Denmark, Egypt, Finland, France, Germany, Israel, Italy, Netherlands, Nigeria, Norway, Poland, Qatar, Russia, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, and United Kingdom. The Europe, Middle East & Africa commanded largest market share of 37.15% in 2022, followed by Americas.

# **Key Topics Covered:**

- 1. Preface
- 2. Research Methodology
- 3. Executive Summary
- 4. Market Overview
- 5. Market Insights
- 6. Bioplastics Market, by Raw Material
- 7. Bioplastics Market, by Degradability
- 8. Bioplastics Market, by Processing Method
- 9. Bioplastics Market, by End-User
- 10. Americas Bioplastics Market
- 11. Asia-Pacific Bioplastics Market
- 12. Europe, Middle East & Africa Bioplastics Market
- 13. Competitive Landscape
- 14. Competitive Portfolio

# 15. Appendix

The report provides insights on the following pointers:

- 1. Market Penetration: Provides comprehensive information on the market offered by the key players
- 2. Market Development: Provides in-depth information about lucrative emerging markets and analyzes penetration across mature segments of the markets
- 3. Market Diversification: Provides detailed information about new product launches, untapped geographies, recent developments, and investments
- 4. Competitive Assessment & Intelligence: Provides an exhaustive assessment of market shares, strategies, products, certification, regulatory approvals, patent landscape, and manufacturing capabilities of the leading players
- 5. Product Development & Innovation: Provides intelligent insights on future technologies, R&D activities, and breakthrough product developments

The report answers questions such as:

- 1. What is the market size and forecast of the Bioplastics Market?
- 2. Which are the products/segments/applications/areas to invest in over the forecast period in the Bioplastics Market?
- 3. What is the competitive strategic window for opportunities in the Bioplastics Market?
- 4. What are the technology trends and regulatory frameworks in the Bioplastics Market?
- 5. What is the market share of the leading vendors in the Bioplastics Market?
- 6. What modes and strategic moves are considered suitable for entering the Bioplastics Market?

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Mr. Ketan Rohom 360iResearch +1 530-264-8485 ketan@360iresearch.com

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