



GLOBAL SEED TESTING MARKET

**Market Size, Share and Forecast; Market Outlook, Opportunity and Data
Analysis 2025-2032**

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- PGRO
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- CSP Labs
- Lifeasible
- Intertek Group plc
- Ransom Seed Laboratory, Inc.
- SeedLab

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- Market Positioning/Share Analysis
- Mergers and Acquisitions Analysis

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- About Us and Services
- Contact Us

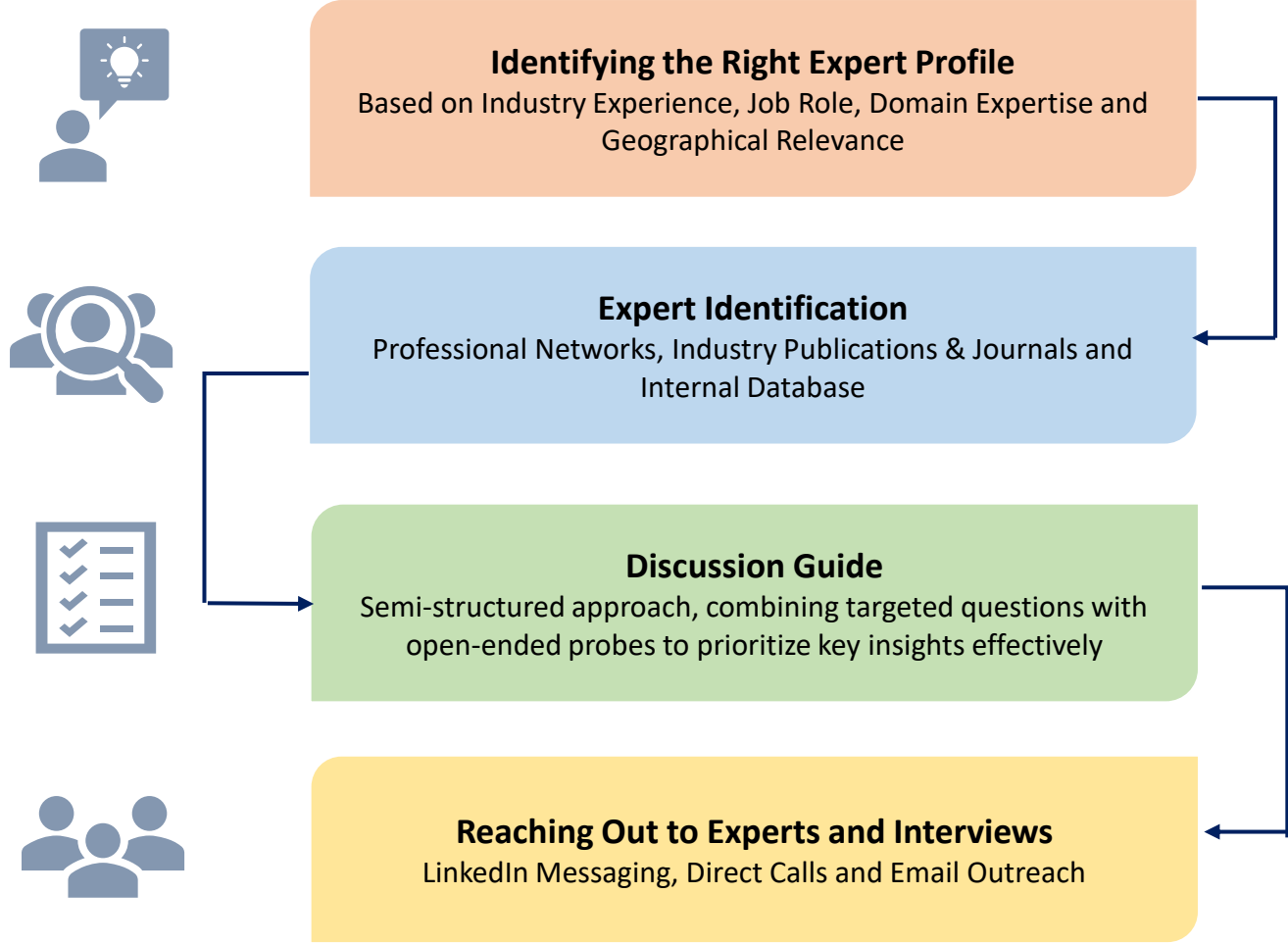
SECTION 1

METHODOLOGY & SCOPE

- Research Methodology
- Scope of the Report

RESEARCH METHODOLOGY - PRIMARY RESEARCH

OBJECTIVE Evaluate market potential, trends, and growth drivers to guide strategic decisions



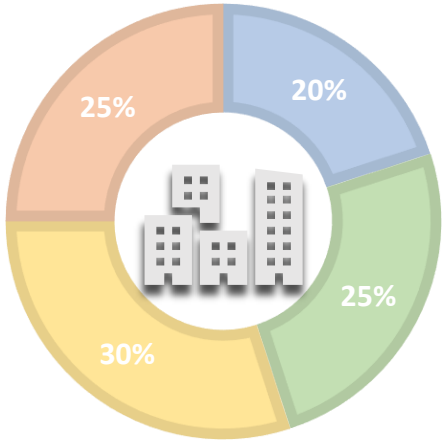
- **Extensive Expert Engagement Across the Value Chain:** At DataM Intelligence, we conduct in-depth primary research by engaging with key stakeholders across the entire value chain, including manufacturers, suppliers, distributors, and industry consultants. This comprehensive approach ensures we gather well-rounded insights that accurately reflect market dynamics.
- **Targeted Expert Interviews for Data Validation:** Our primary research process involves direct interviews with industry experts to validate secondary research findings. This enables us to cross-check data points, understand emerging trends, and confirm strategic insights, enhancing the reliability of our market assessments.
- **Paid Primaries for In-Depth Qualitative Insights:** To obtain deeper qualitative insights, we also conduct paid primary interviews with selected experts and focus groups. This targeted approach allows us to explore niche market trends, consumer preferences, and competitive strategies with precision.

PRIMARY RESEARCH APPROACH

Telephonic Interviews **Email Interactions** **Chat Interviews** **Virtual Interviews**

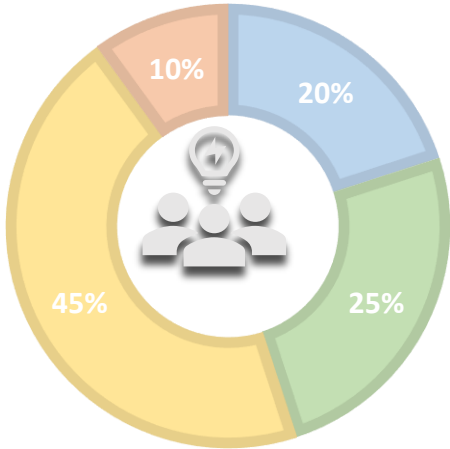
RESEARCH METHODOLOGY - PRIMARY RESEARCH

By Company



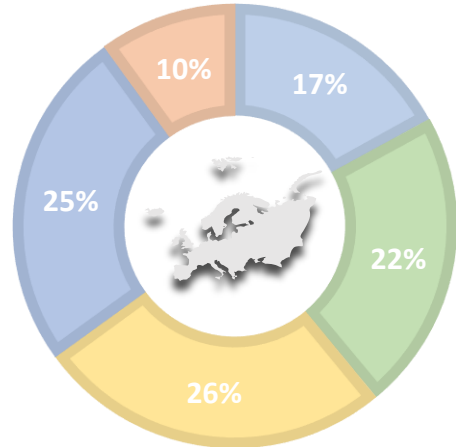
■ Tier 1 ■ Tier 2 ■ Tier 3 ■ Startups

By Designation



■ Executive-Level ■ Operational-Level
 ■ Industry Specific Experts ■ Market Ecosystem Experts

By Region



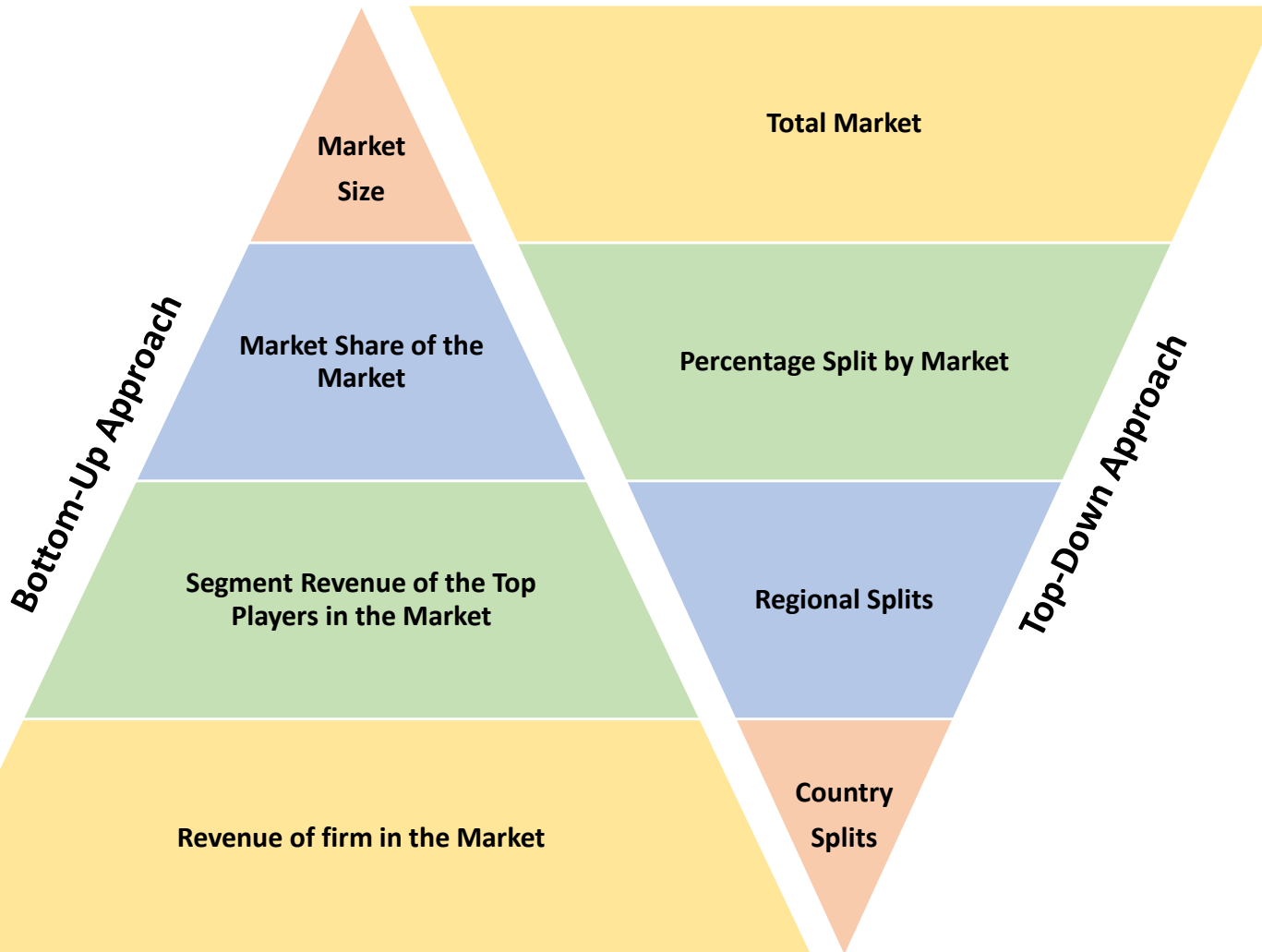
■ North America ■ South America
 ■ Europe ■ Asia Pacific
 ■ Middle East & Africa

Executive Level	CEOs, COOs, CFOs, Presidents, Vice Presidents, Managing Directors, Strategy Heads
Operational Level	Product Managers, Sales Managers, Production Heads, Marketing Leads, Regional Managers
Industry Specific Experts	R&D Heads, Subject Matter Experts (SMEs), Engineers, Technologists, Innovation Heads
Market Ecosystem Experts	Distributors, Suppliers, Retailers, Industry Consultants.

RESEARCH METHODOLOGY – DATA TRIANGULATION

OBJECTIVE

Ensuring future projections are data-driven and backed by credible insights



- At DataM Intelligence, the top-down and bottom-up approaches are key methodologies for estimating market size, analyzing trends, and forecasting growth.
- **Top-Down Approach:** We assess by analyzing the overall market size and then breaking it down into smaller segments based on industry data, ratios, and assumptions. It is ideal for assessing large, established markets.
- **Bottom-Up Approach:** We gather data at the company and product level, collecting data from individual segments, companies, or product categories and aggregating them to determine the total market size. It is highly effective for niche or emerging markets.

RESEARCH METHODOLOGY – SECONDARY RESEARCH

OBJECTIVE

Structured Approach to Ensure Accuracy And Reliability

Source Identification and Evaluation

Data Collection and Aggregation

Data Validation & Cross-Verification

Building a Verified Contact Network



Source Identification and Evaluation

- Scientific Papers, Journals, and Publications
- Trade Information
- Industry and Government Websites
- Association Publications
- Investor Presentations, Annual Reports, and Press Releases
- Public Sources Reports
- Paid Databases



Data Validation & Cross-Verification

- Comparing insights from multiple trusted sources to confirm data points.
- Aligning secondary data with insights obtained from primary research interviews.
- Validating information through expert opinions to enhance accuracy.



Data Collection and Aggregation

- Market Size and Forecasts
- Growth Drivers and Restraints
- Competitive Landscape
- Technological Advancements



Building a Verified Contact Network

- Subject matter experts with proven expertise.
- Trusted data sources and reliable industry stakeholders.

RESEARCH SCOPE

Test Type

- Physical Purity Testing
- Germination Testing
- Genetic Purity Testing
- Seed Vigor Testing
- Pathogen Testing
- Moisture Content Testing
- Others

Technology

- Traditional Testing
- Advanced Testing

Seed Type

- Conventional Seeds
- Hybrid Seeds
- Genetically Modified (GM) Seeds
- Organic Seeds

Crop Type

- Cereals & Grains
- Oilseeds & Pulses
- Fruits & Vegetables
- Forage & Turf Seeds
- Flower & Ornamental Seeds
- Herbal & Medicinal Plants

End User

- Seed Manufacturers
- Agricultural Research Institutes
- Government & Regulatory Bodies
- Private & Commercial Laboratories
- Farmers & Cooperatives

SECTION 2

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- Market Definition and Overview

Definition

Seed Testing

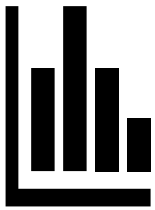
- Seed testing is the scientific process of evaluating the quality, purity, and viability of seeds to ensure they meet regulatory standards and industry requirements before planting or commercialization. It involves physical, physiological, and genetic assessments to determine a seed's ability to germinate, grow, and perform under specific conditions.

SECTION 3

EXECUTIVE SUMMARY

- Market Snippet By Test Type
- Market Snippet By Technology
- Market Snippet By Seed Type
- Market Snippet By Crop Type
- Market Snippet By End User
- Market Snippet By Region

EXECUTIVE SUMMARY



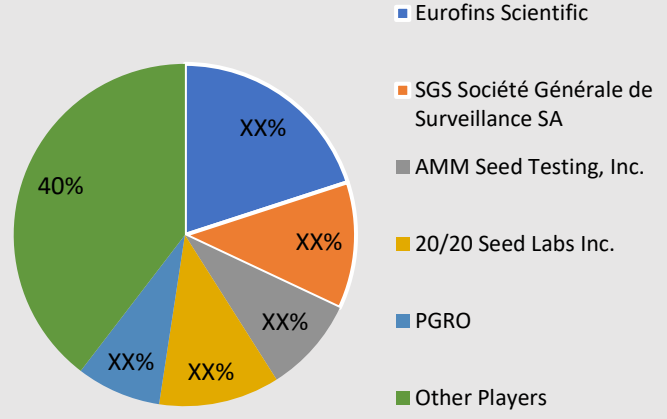
Market Value, 2024 (US\$ Million): XX

Market Value, 2032 (US\$ Million): XX

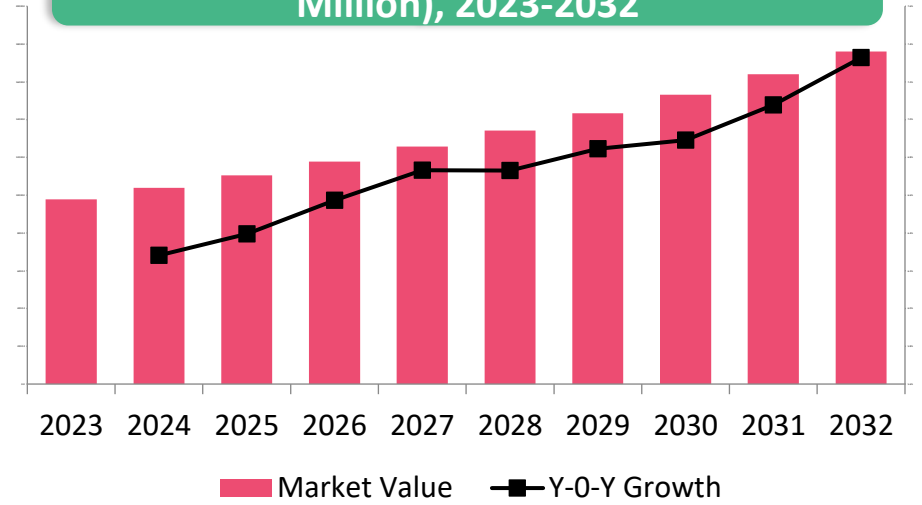


CAGR: 2025-2032: XX%

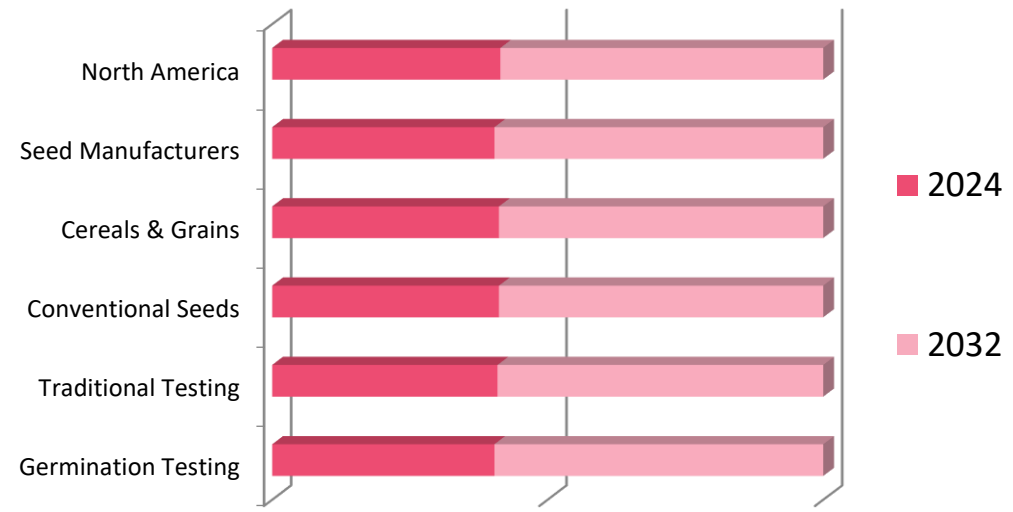
Key Players Market Share, 2023 (%)



Global Seed testing Market Value (USD Million), 2023-2032



- By Region
- By End-User
- By Crop Type
- By Seed Type
- By Technology
- By Test Type



Regional Analysis



EXECUTIVE SUMMARY

Global Seed Testing Market Value (US\$ Million), 2023-2032

- The Global seed testing market was approximately **US\$ XX million in 2024** and is expected to reach US\$ XX million in 2032 growing at a CAGR of about **XX%** during the forecast period (2025-2032).
- The seed testing market is experiencing substantial growth, driven by the increasing demand for high-quality seeds, stringent regulatory requirements, and ongoing investments in advanced seed testing facilities. With the rising need for disease-free, high-performance seeds, seed testing has become a critical component of modern agriculture.
- The rising adoption of seed purity, germination, and health testing services, with molecular diagnostics and AI-driven automation enhancing precision. Hybrid and vegetable seed testing are gaining traction, driven by the need for higher yields and disease resistance. Additionally, export certification and regulatory compliance are fueling demand for NABL-accredited testing facilities.
- Regional growth is led by Asia-Pacific, where investments in seed testing infrastructure are expanding to support high-yield and disease-resistant seeds. North America and Europe remain dominant markets due to stringent seed certification policies, while Latin America and Africa present emerging opportunities for localized seed health testing facilities. Increasing investments in precision breeding and biotechnology are further accelerating demand for advanced seed testing solutions.
- For instance, in March 2024, Syngenta's recent investment in Hyderabad, India, where the company has established a state-of-the-art seed testing laboratory with an investment of approximately ₹20 crore (USD 2.4 million). This facility is among the most advanced in the world and aims to support seed health testing across India, the Asia-Pacific region, and beyond. The lab, capable of conducting 12,000 virus and bacterial tests annually, highlights the growing importance of robust seed health testing infrastructure in ensuring global food security and supply chain integrity.

EXECUTIVE SUMMARY

Test Type Value Share (%), 2024



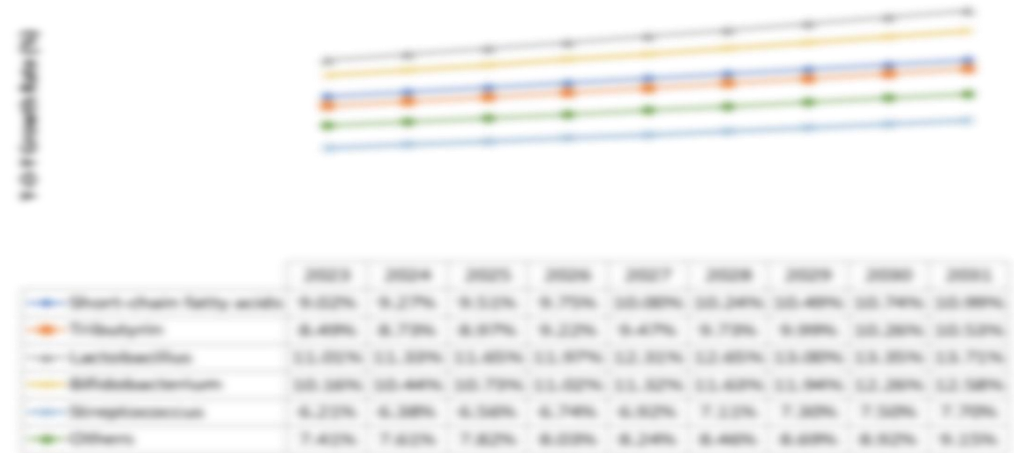
- Physical Purity Testing
- Germination Testing
- Genetic Purity Testing
- Seed Vigor Testing
- Pathogen Testing
- Moisture Content Testing
- Others

Technology Value Share (%), 2024

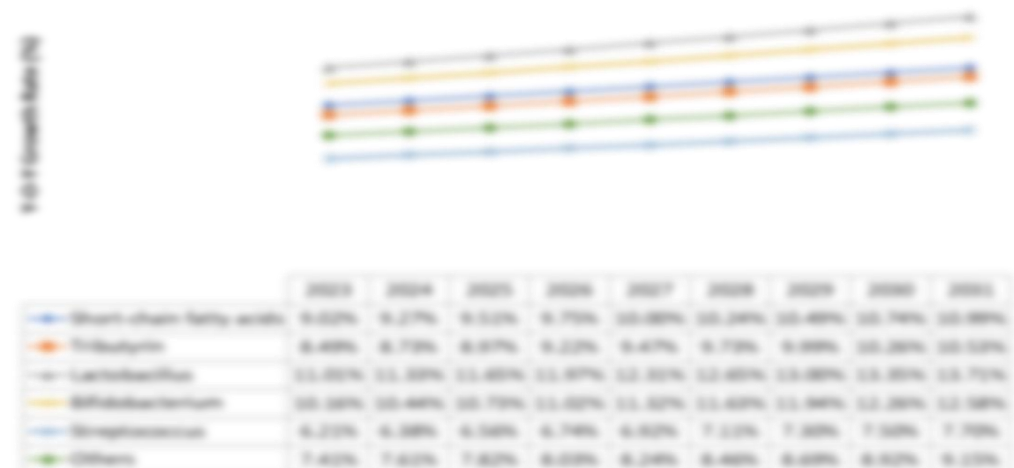


- Traditional Testing
- Advanced Testing

Y-o-Y Growth (%), By Test Type, 2024-2032

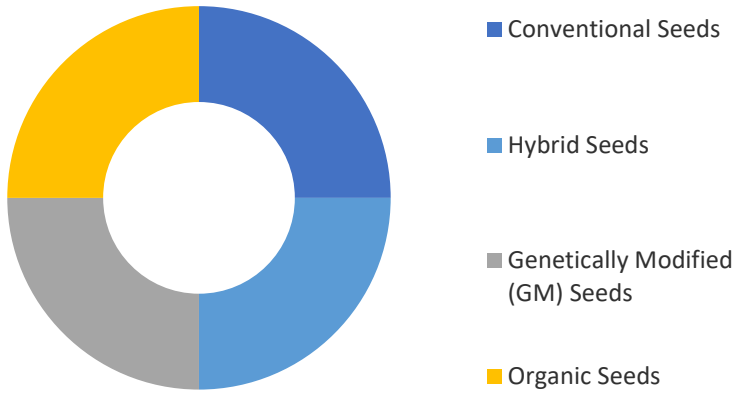


Y-o-Y Growth (%), By Technology, 2024-2032

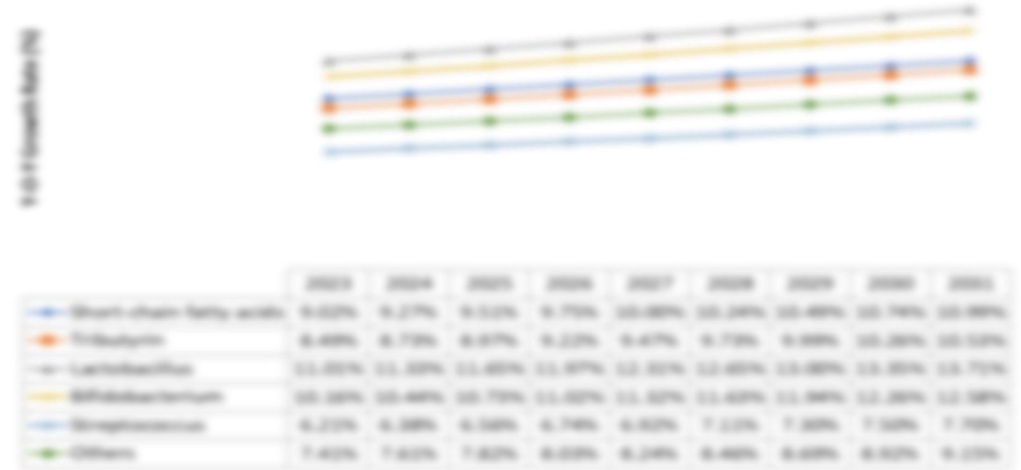


EXECUTIVE SUMMARY

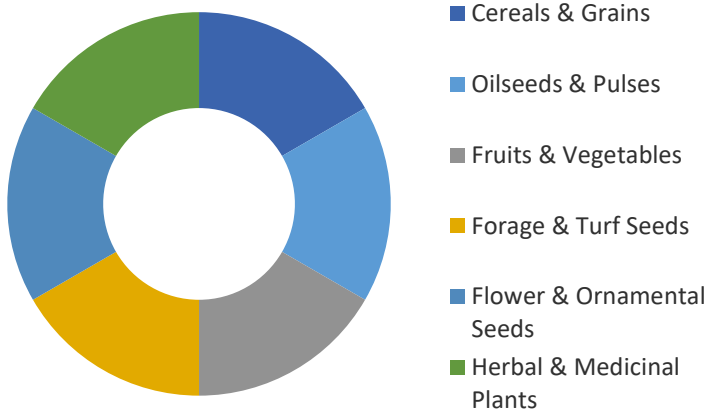
Seed Type Value Share (%), 2024



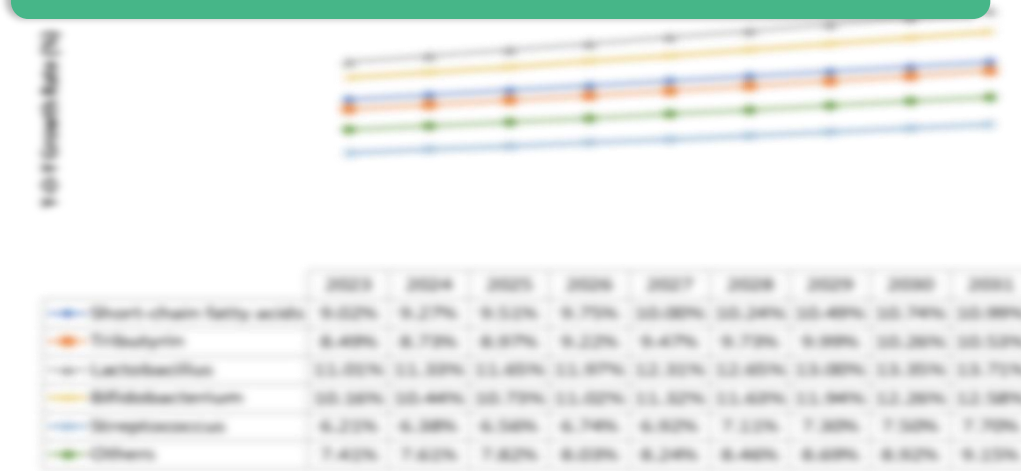
Y-o-Y Growth (%), By Seed Type, 2024-2032



Crop Type Value Share (%), 2024

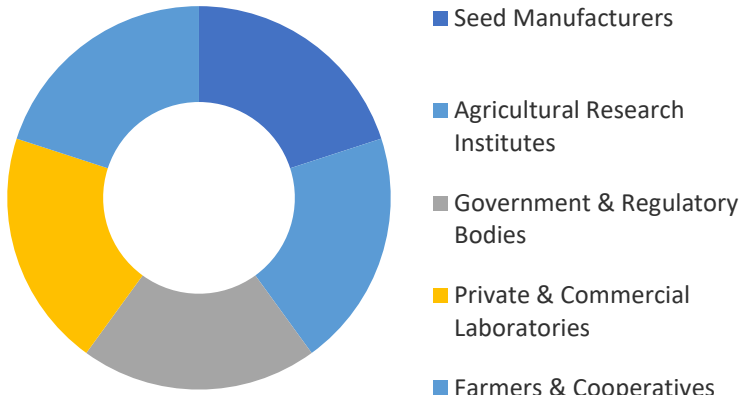


Y-o-Y Growth (%), By Crop Type, 2024-2032

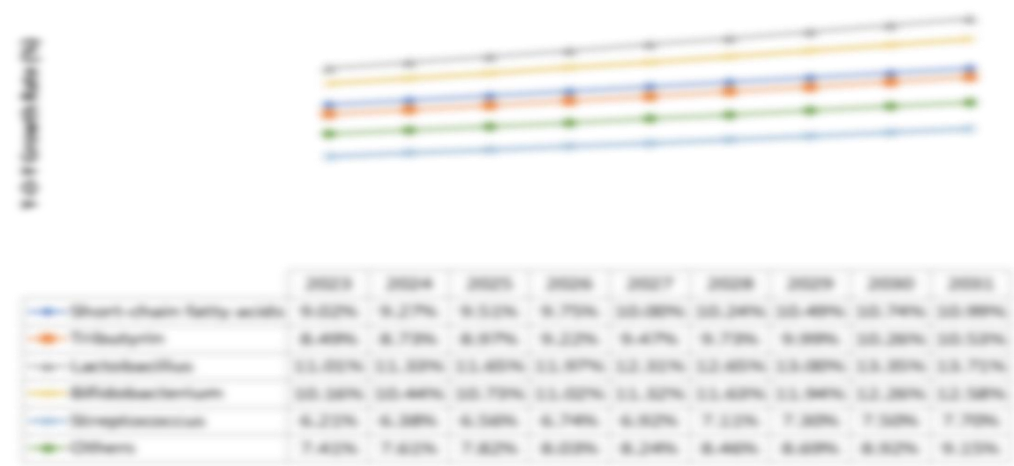


EXECUTIVE SUMMARY

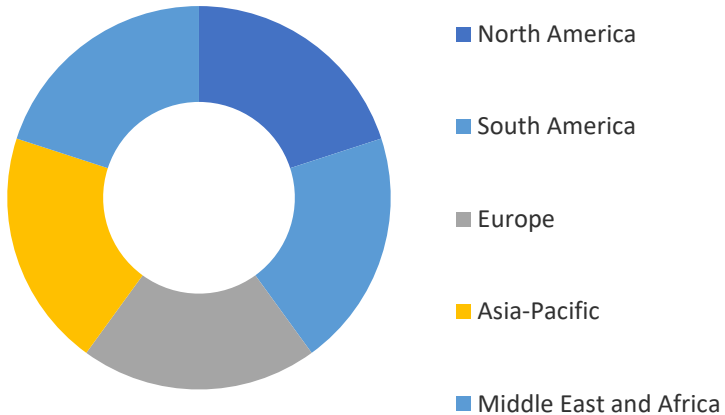
End User Value Share (%), 2024



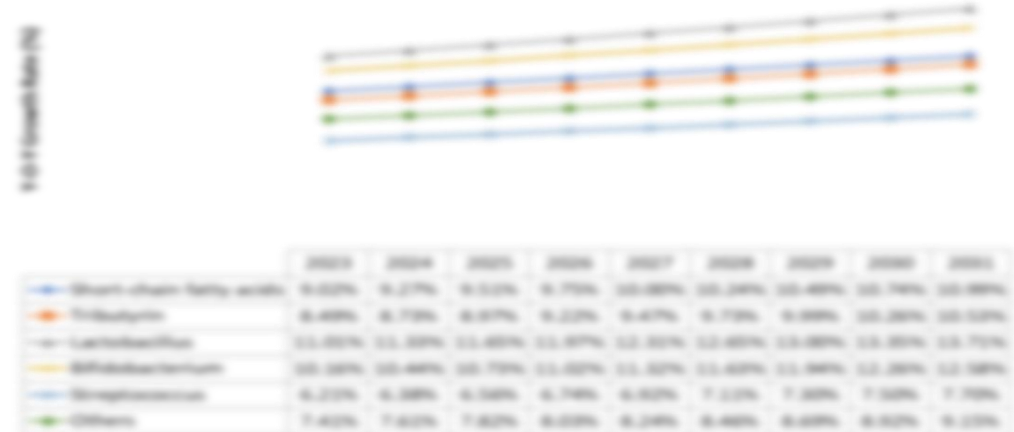
Y-o-Y Growth (%), By End User, 2024-2032



Region Value Share (%), 2024



Y-o-Y Growth (%), By Region, 2024-2032



SECTION 4

MARKET DYNAMICS

- Drivers
- Restraints
- Opportunities
- Impact Analysis

Market Dynamics

Drivers

- ❖ Rising Global Demand for High-Quality Seeds
- ❖ Expansion of Genetically Modified (GM) and Hybrid Seeds
- ❖ Government Regulations and Seed Certification Standards

Opportunities

- ❖ Expansion of Seed Testing in Emerging Markets
- ❖ Adoption of AI, Automation, and Digital Seed Testing Platforms
- ❖ XX

Restraints

- ❖ High Cost of Advanced Testing Technologies
- ❖ XX

Trends

- ❖ Increasing Adoption of Digital and AI-Based Seed Testing
- ❖ Growth of On-Site and Rapid Seed Testing Kits

Rising Global Demand for High-Quality Seeds

Drivers

- As agricultural stakeholders seek scientifically validated, high-performing seeds to maximize productivity and ensure food security. Farmers and agribusinesses are increasingly prioritizing seed quality attributes such as germination rate, genetic purity, pest and disease resistance, and climate adaptability. As a result, the seed industry is placing greater emphasis on comprehensive seed testing methodologies to validate these attributes, thereby driving market growth.
- Farmers rely on high-quality seeds to achieve higher yields, uniform crop growth, and cost efficiency. However, the effectiveness of these seeds depends on their genetic stability, viability, and adaptability to environmental conditions. Seed testing laboratories play a crucial role in analyzing and certifying seed quality parameters, ensuring that seeds meet industry standards and regulatory requirements before they reach the market.
- The increasing need for scientific validation of seed performance is fueling demand for advanced seed testing services, including germination testing, genetic purity assessment, vigor testing, and seed health analysis.
- Governments and agricultural bodies worldwide are enforcing stringent seed certification and quality assurance regulations to safeguard food security, biodiversity, and sustainable farming practices. Regulatory frameworks such as OECD Seed Schemes, ISTA (International Seed Testing Association) standards, and national seed certification programs require seed producers to undergo rigorous quality testing before commercializing their products. This has led to a surge in demand for third-party seed testing laboratories and in-house quality control facilities, further expanding the seed testing market.

Rising Global Demand for High-Quality Seeds

Drivers

- The ongoing advancements in seed genetics, biotechnology, and precision breeding are contributing to the rising demand for comprehensive seed testing solutions. With the development of genetically enhanced seeds, hybrid varieties, and non-GMO alternatives, companies must conduct extensive seed analysis to verify their genetic traits and market viability. Technologies such as CRISPR gene editing, molecular marker-assisted breeding, and AI-driven seed analytics require highly specialized testing procedures, increasing reliance on state-of-the-art seed testing infrastructure.
- As seed multiplication initiatives gain momentum to enhance seed availability and biodiversity conservation, the demand for consistent quality assessment is rising. Farmers and seed producers engaged in large-scale seed multiplication require batch-wise testing of seeds to ensure genetic uniformity, purity, and disease-free status across multiple generations. This has driven the expansion of regional and decentralized seed testing facilities, enabling smallholder farmers and agribusinesses to access certified high-quality seeds.
- To meet the rising demand for high-quality seeds efficiently, seed testing laboratories are investing in automated, AI-powered, and digital seed testing solutions. These innovations enhance the speed, accuracy, and scalability of testing procedures, reducing manual errors and operational costs. Automated germination analyzers, spectral imaging for seed health assessment, and blockchain-enabled traceability systems are revolutionizing seed testing protocols, making them more accessible and efficient for global seed markets.

Expansion of Genetically Modified (GM) and Hybrid Seeds

Drivers

- ▶ The rising awareness of active aging and muscle preservation in the UK is driven by an aging population and its associated healthcare demands. With projections indicating that by 2035, one in four people will be over 65, the growing number of older adults with complex health conditions increases pressure on healthcare systems. Prioritizing muscle preservation and physical activity can help reduce disability, improve quality of life, and alleviate the strain on public health resources.
- ▶ Public health initiatives, including those from Public Health England and the Office for Health Improvement and Disparities, are increasingly focused on healthy aging strategies. These initiatives emphasize the importance of maintaining muscle strength as a key component of promoting independence and longevity, positioning muscle preservation as a priority within national health policies.
- ▶ The rise in multimorbidity among older populations further highlights the need for integrated care models. Managing multiple chronic conditions effectively requires proactive approaches that prevent frailty and muscle loss. Ensuring muscle strength is critical to minimizing the risks of falls, fractures, and dependency, which ultimately contributes to reducing long-term care costs and improving the overall well-being of the aging population.
- ▶ For instance, in March 2023, Sport England's recent initiative, partnering with 25 Active Aging organizations to engage over 20,000 older adults in sport and physical activity, aligns with the UK's health objectives by promoting muscle preservation and active aging. This program offers inclusive, positive experiences, helping older adults integrate sport into their daily routines, ultimately supporting healthier, more independent lives. By focusing on long-term engagement in physical activity, the initiative helps reduce healthcare system strain, providing a scalable model for improving the well-being of the aging population.

High Cost of Advanced Testing Technologies

Restraints

- In response to worldwide demand for sustainable and ecologically friendly energy practices, governments have taken steps to encourage the production and use of ethanol as an alternative fuel.
- Sustainable Development goals (SDGs) are one of the United Nations' key aims for slowing down climate change and reducing global warming. Ethanol plays an important role in this. This, alongside energy resources and a greater emphasis on renewable energy sources, are expected to drive market expansion.
- Technological developments and increasing R&D to create ethanol from algae are predicted to boost market demand due to its high production rate and reduced emissions in the sea, which lower production costs. Furthermore, usage will increase because of the lower energy compared to diesel and gasoline.
- The Indian government has also implemented measures and policies to promote ethanol use in the automotive industry, which has boosted ethanol consumption. For example, mandating fuel blended with 20% ethanol is phased beginning April 2023 with to ensure 100% availability by 2025. Ethanol is used as a fuel additive to increase fuel efficiency, lower emissions and improve engine performance.
- In 2022, initiatives in other markets were geared towards the high producing ethanol market instead of pharmaceutical grade for the 2022-23 crop trading season. The state government is encouraging ethanol production through the central government's Ethanol Regulatory Scheme.
- The government's incentives, subsidies and grants have encouraged investment in ethanol production. The incentives have boosted ethanol and ethanol ester demand, leading to the rise of the global ethanol market.

01

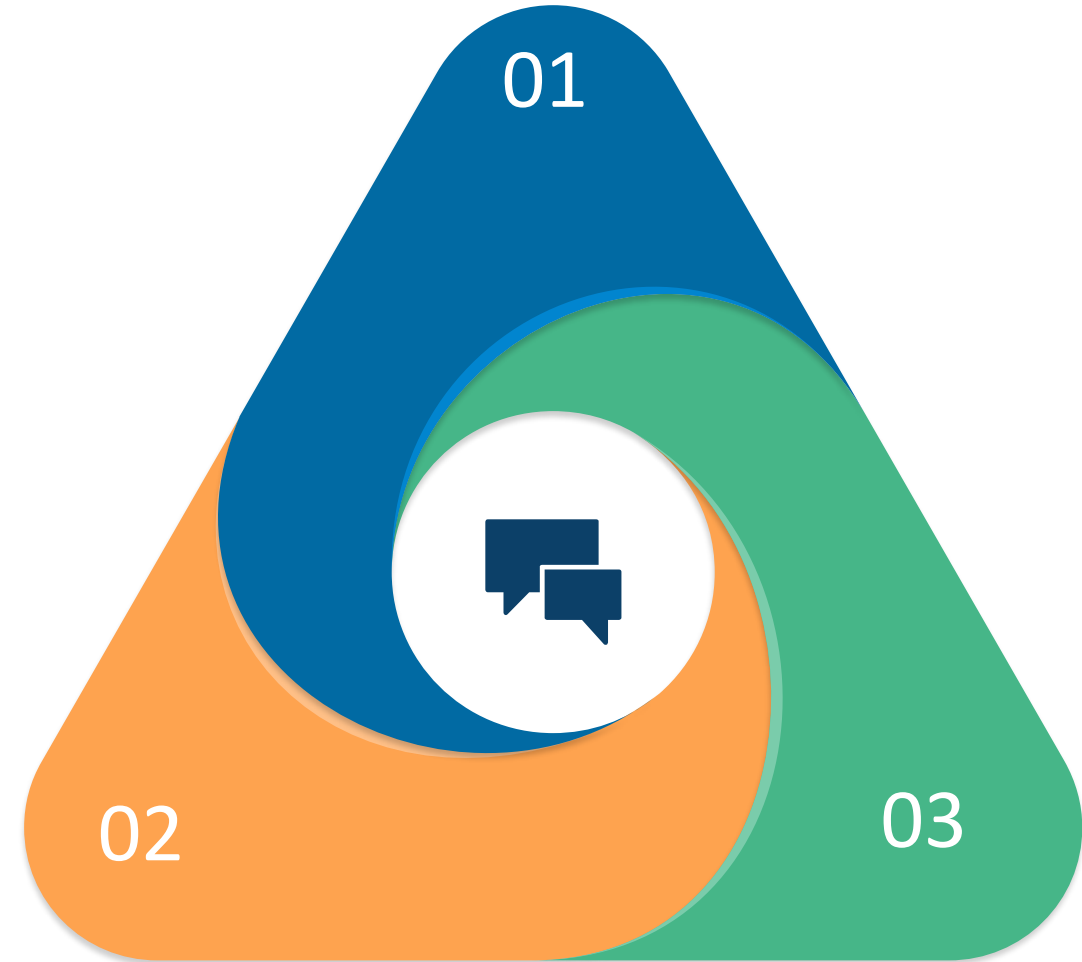
Increased Consumer Awareness of Functional Foods: As consumers seek functional foods that offer health benefits beyond basic nutrition, fig extracts have potential for growth in the dietary supplement market.

02

Health and Wellness Trends: The growing consumer awareness regarding health benefits associated with sports nutrition, such as their antioxidant properties and potential role in digestive health, presents opportunities for product innovation and market expansion.

03

Cosmetic and Personal Care Applications: Fig fruit extract's moisturizing and antioxidant properties make it a valuable ingredient in cosmetic and personal care products. The growing trend for clean beauty and natural ingredients creates opportunities for incorporating fig extract into skincare formulations.



Increasing Adoption of Digital and AI-Based Seed Testing

Trends

- ▶ The rising awareness of active aging and muscle preservation in the UK is driven by an aging population and its associated healthcare demands. With projections indicating that by 2035, one in four people will be over 65, the growing number of older adults with complex health conditions increases pressure on healthcare systems. Prioritizing muscle preservation and physical activity can help reduce disability, improve quality of life, and alleviate the strain on public health resources.
- ▶ Public health initiatives, including those from Public Health England and the Office for Health Improvement and Disparities, are increasingly focused on healthy aging strategies. These initiatives emphasize the importance of maintaining muscle strength as a key component of promoting independence and longevity, positioning muscle preservation as a priority within national health policies.
- ▶ The rise in multimorbidity among older populations further highlights the need for integrated care models. Managing multiple chronic conditions effectively requires proactive approaches that prevent falls and muscle loss. Ensuring muscle strength is critical to minimizing the risks of falls, fractures, and dependency, which ultimately contributes to reducing long-term care costs and improving the overall well-being of the aging population.
- ▶ For instance, in March 2023, Sport England's recent initiative, partnering with 25 Active Aging organizations to engage over 30,000 older adults in sport and physical activity, aligns with the UK's health objectives by promoting muscle preservation and active aging. This program offers inclusive, positive experiences, helping older adults integrate sport into their daily routines, ultimately supporting healthier, more independent lives. By focusing on long-term engagement in physical activity, the initiative helps reduce healthcare system strain, providing a scalable model for improving the well-being of the aging population.

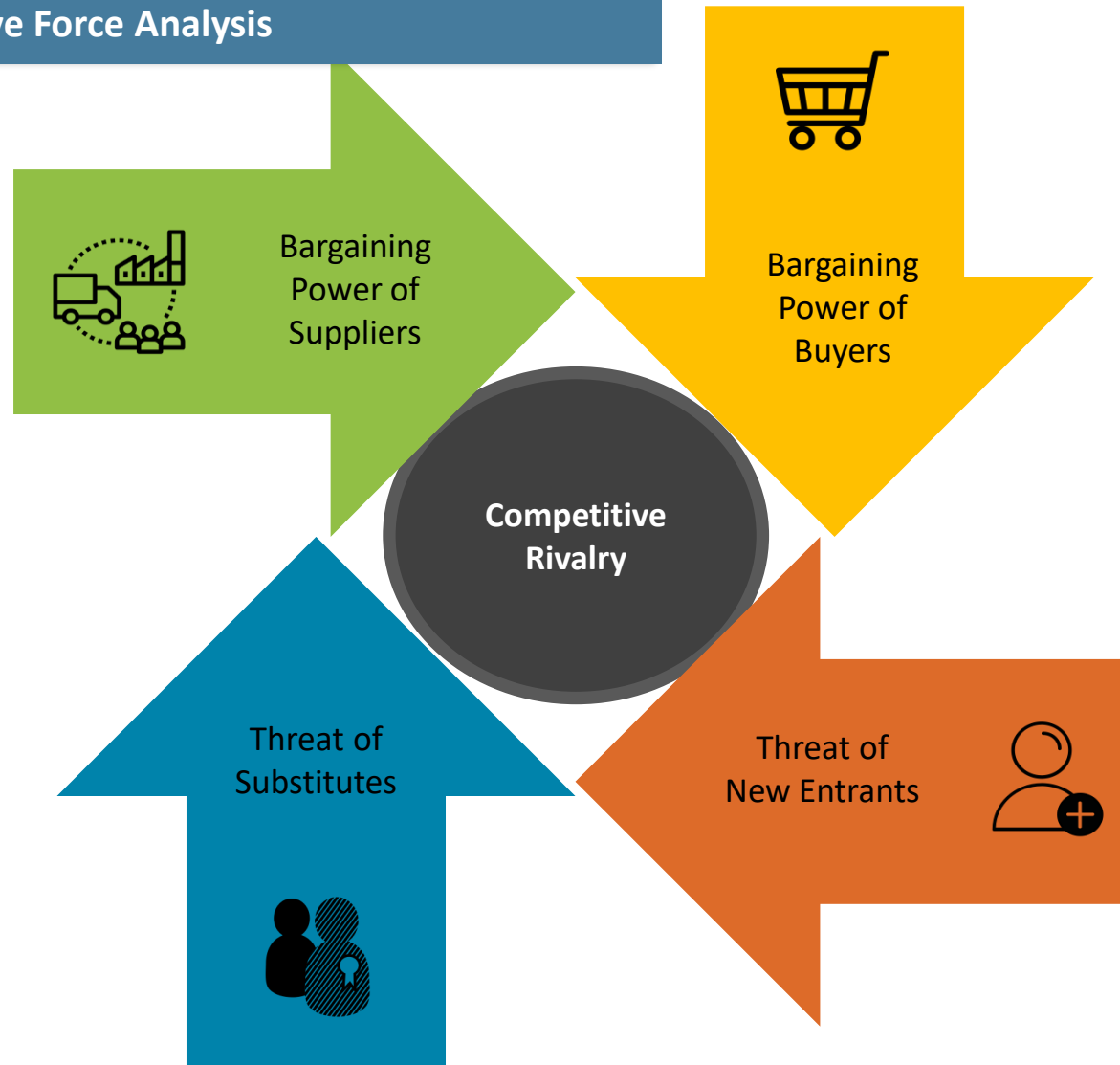
SECTION 5

INDUSTRY FACTORS

- Porter's Five Force Analysis
- Regulatory Analysis
- Pricing Analysis
- Patent Analysis
- Supply Chain Analysis

INDUSTRY FORCES

Porter's Five Force Analysis



INFORMATION IS NOT EXHAUSTIVE

Porter's Five Force Analysis

THREAT OF RIVALRY

The threat of rivalry in the foreign exchange market is significant due to the presence of major players like the US and the UK. These countries compete in various ways, such as through trade agreements, currency exchange rates, and foreign investments. The growing threat to other countries is significant because it can lead to a loss of market share and a decrease in economic growth.

THREAT OF SUBSTITUTION

The threat of substitution is high, given the wide range of products and services available in the market. This includes both domestic and foreign goods. The threat of substitution is significant because it can lead to a loss of market share and a decrease in economic growth.



THREAT OF SUPPLIERS

The bargaining power of suppliers in the foreign exchange market is significant. Suppliers can influence the market by controlling the supply of goods and services. This can lead to a loss of market share and a decrease in economic growth.

THREAT OF BUYERS

Buyers in the foreign exchange market have significant bargaining power. They can influence the market by controlling the demand for goods and services. This can lead to a loss of market share and a decrease in economic growth.

NEW ENTRANTS

The foreign exchange market is a competitive one, and new entrants can significantly impact the market. New entrants can bring new products and services to the market, which can lead to a loss of market share and a decrease in economic growth.

Regulatory Analysis

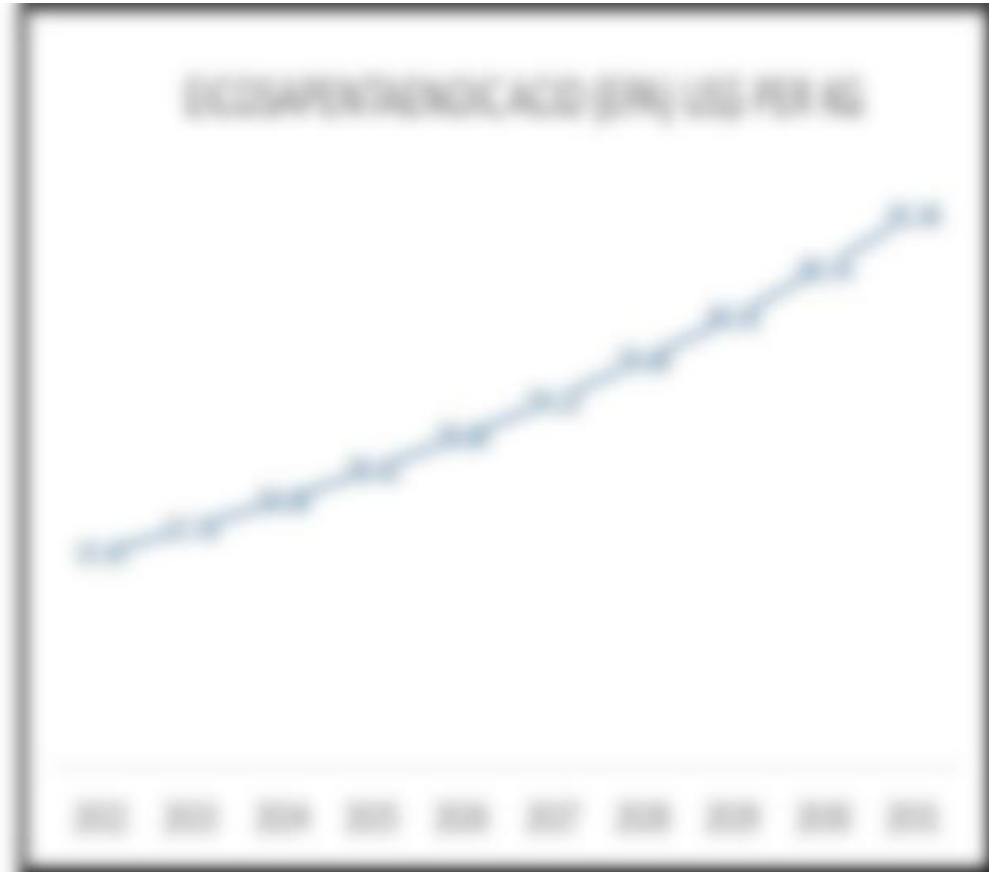
- ▶ Yeast extract is globally recognized as a safe food ingredient, with regulatory bodies like the Codex Alimentarius Commission ensuring food safety standards are met. The primary regulations focus on its classification as a food ingredient or flavoring agent and ensure compliance with Good Manufacturing Practices (GMP).
- ▶ In the European Union, yeast extract is governed by the European Food Safety Authority (EFSA) under Regulation (EC) No 1831/2003. It must meet specific safety standards and be accurately labeled, especially regarding its GMO status and processing methods.
- ▶ In the United States, the FDA classifies yeast extract as Generally Recognized as Safe (GRAS). It requires transparent labeling, with yeast extract listed in the ingredients and not masked as a "natural flavor" unless specified.
- ▶ In the Asia-Pacific region, countries like China, Japan, and South Korea regulate yeast extract through local authorities like the National Health Commission (NHC), MHLW, and MFDS, ensuring safety and proper labeling, with a special focus on GMOs.
- ▶ Across Latin America and other regions, local food safety authorities, such as ANVISA in Brazil, follow similar standards for yeast extract as Codex Alimentarius, emphasizing safety and ingredient transparency in food products.

INDUSTRY FORCES

Regulatory Analysis

Board	Government Agencies/Research Associations	Regulation
International Society for the Study of Fatty Acids and Lipids (ISSFAL)	Research Association	ISSFAL promotes global research on omega-3 fatty acids, including those found in krill oil, to better understand their health benefits. The society fosters scientific collaboration on topics like cardiovascular health, joint support, and brain function. Its work helps substantiate the health claims associated with krill oil, supporting its widespread use in supplements.
Global Organization for EPA and DHA Omega-3s (GOED)	Research Association	GOED is a global trade association that sets high-quality standards for omega-3 products, including krill oil. It advocates for the health benefits of omega-3s and works to ensure that krill oil products meet international safety and quality regulations.
Marine Stewardship Council (MSC)	Research Association	The MSC certifies that krill oil products are sustainably sourced from healthy krill populations. Its certification ensures that harvesting practices meet strict environmental and ethical criteria, promoting long-term sustainability.
Antarctic and Southern Ocean Coalition (ASOC)	Research Association	ASOC advocates for the protection of the Antarctic ecosystem, focusing on sustainable krill harvesting. It works with CCAMLR to promote responsible practices and raise awareness of the importance of krill in the food chain. ASOC ensures that krill harvesting does not harm the delicate balance of the Southern Ocean ecosystem.

Pricing Analysis

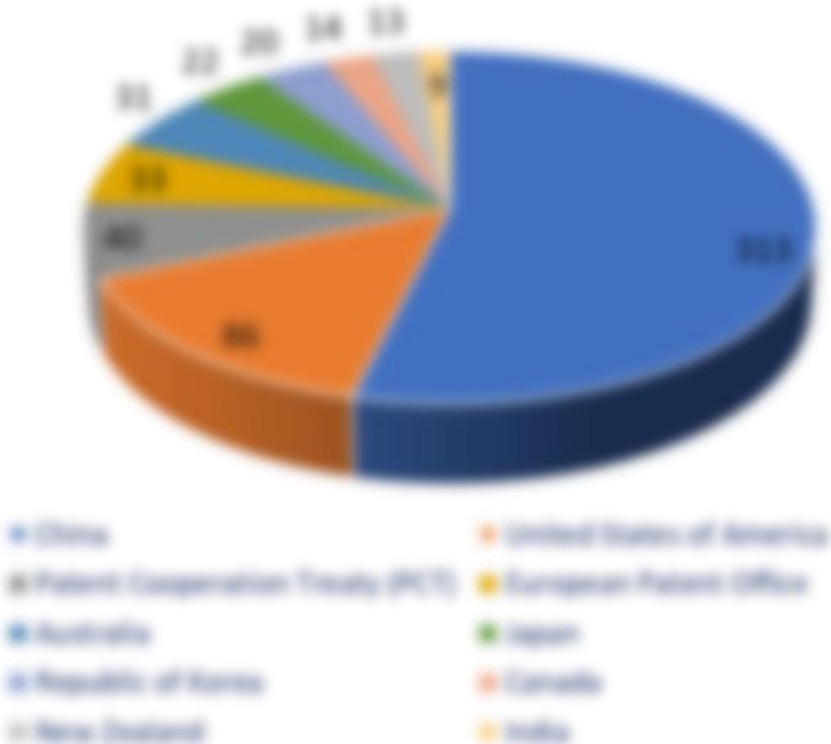


Pricing Analysis

- ▶ The pricing dynamics of the krill oil market reveal notable variations across different product forms, including capsules, oil, powder, and gummies. Capsules, including softgels and hardgels, exhibit steady price growth from USD 0.67 in 2022 to USD 0.71 by 2031. Among them, hardgels hold the highest prices, ranging from USD 0.77 to USD 0.80, reflecting their premium positioning due to manufacturing complexity or enhanced efficacy. Capsules remain a preferred choice for traditional supplement users, maintaining consistent demand.
- ▶ Krill oil leads the market, with prices rising from USD 104.53 in 2022 to USD 111.91 by 2031. Its premium pricing highlights its versatility and concentrated nutritional benefits, making it the dominant form in terms of value. The consistent growth indicates strong and sustained demand from health-conscious consumers.
- ▶ The powder form is positioned as a mid-priced option, starting at USD 54.13 in 2022 and increasing to USD 57.25 by 2031. While its growth is gradual, it caters to niche markets, particularly in fitness and functional food applications. This segment presents opportunities for innovation in blends and targeted formulations.
- ▶ Gummies, although the lowest priced format, show the fastest growth rate. Prices rise from USD 0.30 in 2022 to USD 0.33 by 2031, driven by consumer preference for convenient, palatable supplements. Their affordability and appeal to younger demographics position gummies as a high-growth segment with significant market potential.
- ▶ In summary, krill oil dominates in value, while gummies emerge as the fastest growing segment. Capsules and powders hold stable market positions, catering to their respective consumer bases. These trends present diverse opportunities for targeted strategies in the krill oil market.

Patent Analysis

Number of Patents Granted, By IPC Code, (%) 2014-2024



Number of Patents Granted, 2015-2023



Supply Chain Analysis

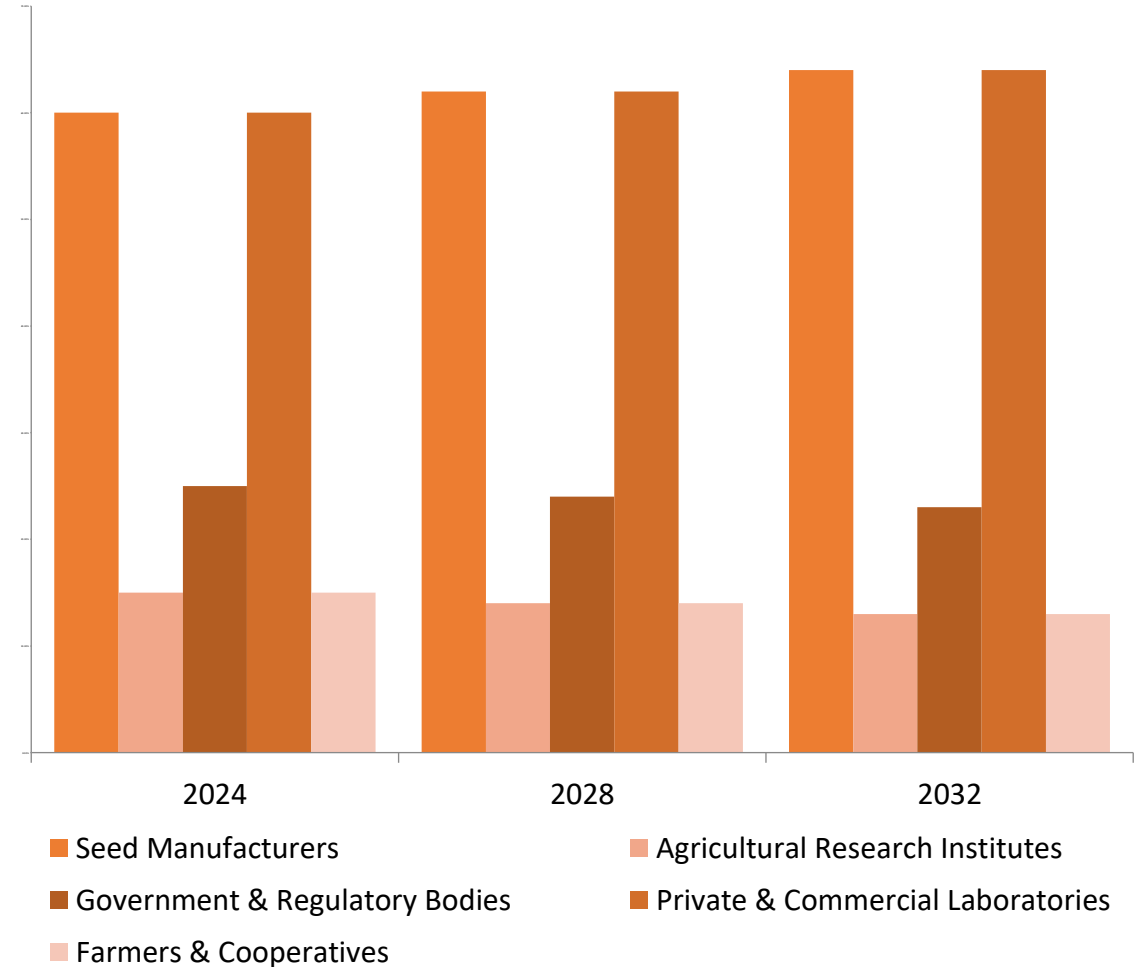
- ▶ A considerable movement toward fitness and healthy living has led to an increase in demand for protein-containing products in sports nutrition market. As more people participate in physical activities such as gym workouts, running and strength training, there is an increased demand for protein to promote muscle growth, recuperation and general fitness.
- ▶ Whey protein's popularity has grown as people become more aware of its function in muscle growth, metabolism and overall wellness. Consumers are better informed about the benefits of protein supplementation, which drives them to seek out high-quality sources such as whey.
- ▶ Whey protein has developed as one of the most popular and sought-after protein sources in the worldwide sports nutrition industry. Whey, a high-quality, fast-digesting protein, is widely used by a variety of customer categories, including professional athletes and casual fitness lovers. Whey protein has all nine necessary amino acids, making it a complete protein. It is notably high in branched-chain amino acids (BCAAs), such as leucine, which are required for muscle protein synthesis and recovery after strenuous exercise.
- ▶ The quick absorption of whey makes it an excellent choice for post-workout supplementation, aiding in muscle repair and reducing muscle breakdown. Companies are customizing whey protein products to reflect local tastes, preferences and dietary patterns. In 2024, Optimum Nutrition, a unit of Glanbia PLC, launched six new flavors in its Gold Standard 100% Whey, Gold Standard Protein Shake, AMN.O. ENERGY and Creative Powder product lines.

MARKET SEGMENTATION – BY END-USER

Global Seed Testing Market Value (US\$ Billion), By End User, 2024, 2028 & 2032

End User	2024	2028	2032
Seed Manufacturers	XX	XX	XX
Agricultural Research Institutes	XX	XX	XX
Government & Regulatory Bodies	XX	XX	XX
Private & Commercial Laboratories	XX	XX	XX
Farmers & Cooperatives	XX	XX	XX

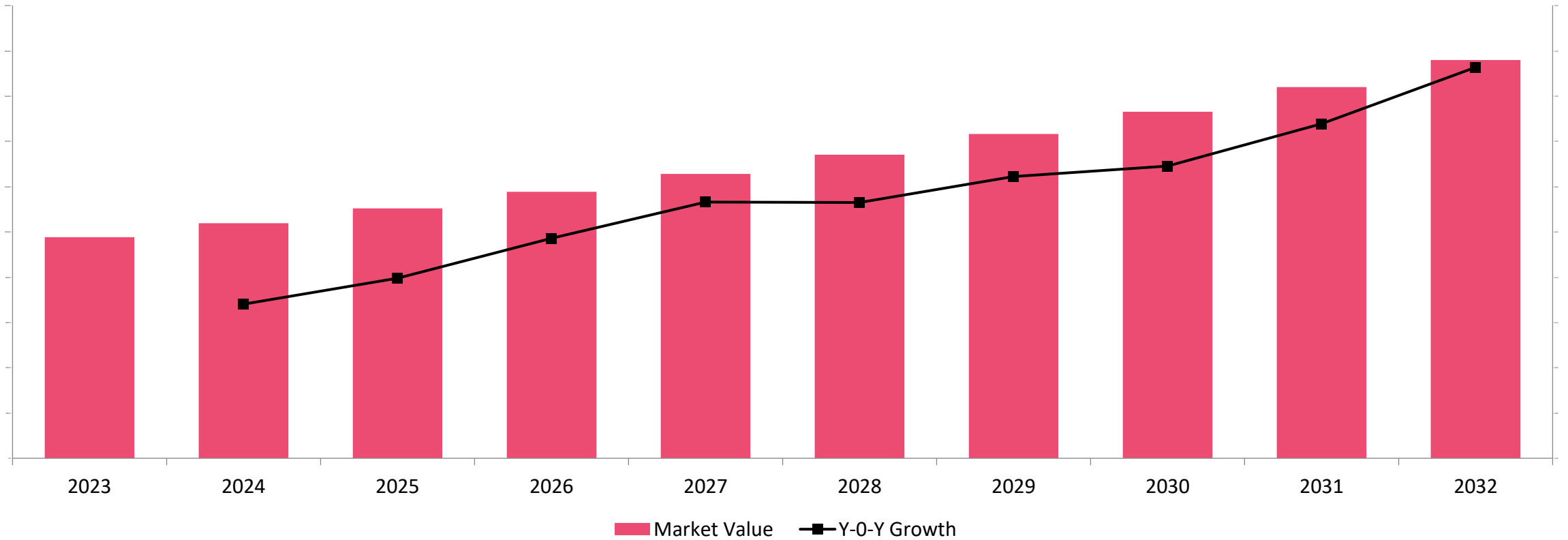
Global Seed Testing Market Share (%), By End User, 2032



MARKET SEGMENTATION – BY END-USER

Seed Manufacturers

Global Seed Testing Market Value (US\$ Billion), 2023-2032



Seed Manufacturers

- The global seed testing market for seed manufacturers was valued at US\$ XX billion in 2024 and is estimated to reach US\$ XX billion by 2032, growing at a CAGR of XX% during the forecast period from 2025-2032.
- The seed manufacturers segment dominates the global seed testing market, driven by the rising demand for high-yield, disease-resistant, and genetically enhanced seeds. With the global population expected to reach 9.7 billion by 2050, according to the United Nations (UN), agricultural productivity must increase by 70% to meet food demands. This has intensified the need for advanced seed testing solutions to ensure high-quality seeds that enhance crop yield, disease resistance, and climate adaptability. Seed manufacturers rely heavily on vigorous testing protocols to comply with international quality standards and enhance seed performance before distribution.
- Seed manufacturers are required to adhere to strict quality regulations and certification standards to ensure their seeds meet germination, purity, and genetic integrity criteria. The International Seed Testing Association (ISTA) mandates that seed companies conduct rigorous quality tests to verify germination rates, seed purity, and vigor before commercialization. In the U.S., the Federal Seed Act and in Europe, the OECD Seed Schemes set guidelines for seed certification, making seed testing an essential process for manufacturers.
- The seed testing industry is evolving with technological innovations that enable rapid and highly accurate analysis of seed quality. AI-driven imaging systems are being integrated into seed sorting and testing to detect defects and categorize seeds based on purity, size, and quality. According to the American Society of Agricultural and Biological Engineers (ASABE), AI-powered seed sorting machines can process over 100,000 seeds per hour, significantly reducing human error and improving seed selection efficiency.

Seed Manufacturers

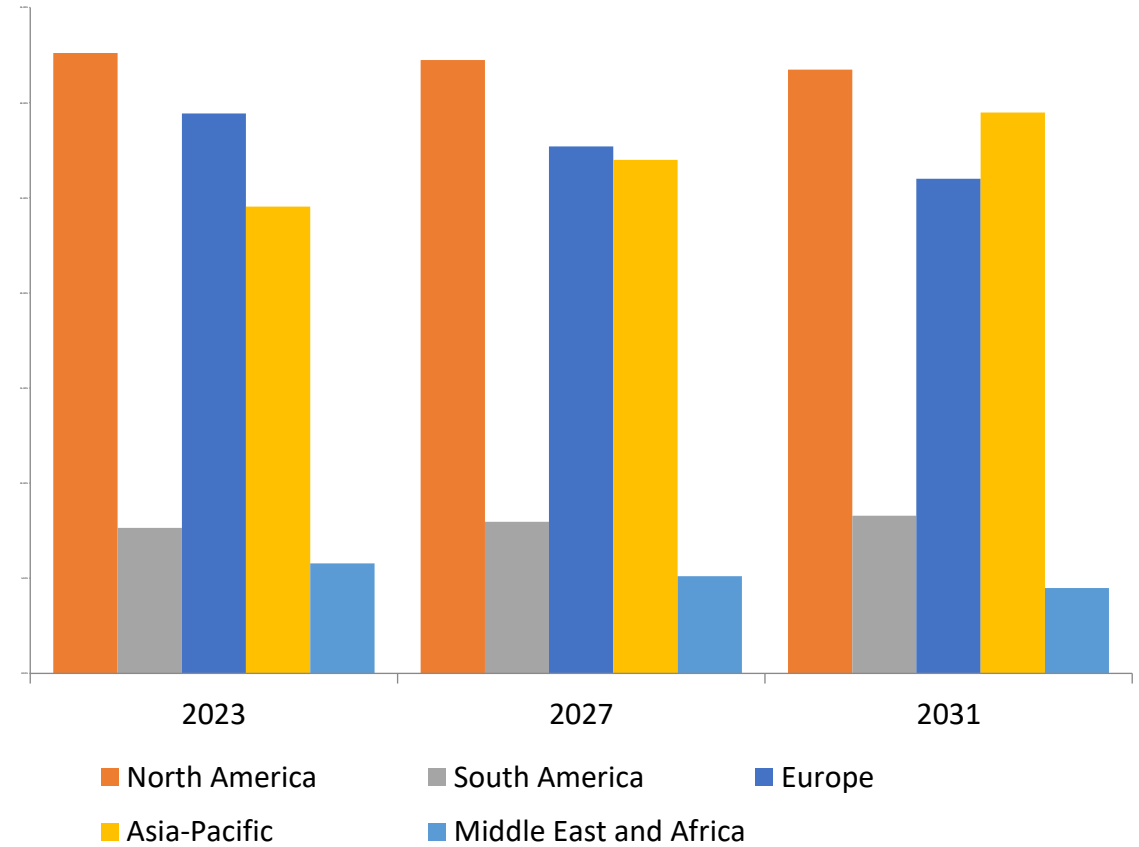
- Additionally, next-generation sequencing (NGS) technology is being widely adopted by seed manufacturers to assess genetic stability and identify beneficial traits in crop breeding programs. This is particularly important for the development of climate-resilient and disease-resistant crops, ensuring better adaptation to changing environmental conditions. For example, Monsanto (now part of Bayer CropScience) and Syngenta have invested heavily in NGS-based seed screening technologies to accelerate the development of drought-tolerant and pest-resistant seed varieties.
- The growing adoption of hybrid and genetically modified (GM) seeds has further fueled the demand for seed testing among manufacturers. In 2023, 206 million hectares of genetically modified (GM) crops were cultivated in 30 countries worldwide, and a total of 75 countries and territories have authorised the utilisation of GM products. The adoption rates of GM cotton and soybeans were 76% and 72.4%, respectively. Seed manufacturers must conduct trait verification tests to confirm the successful integration of genetic modifications, ensuring the seeds deliver the promised benefits, such as herbicide tolerance and insect resistance.
- With the agricultural industry prioritizing sustainability and biodiversity, seed manufacturers are increasingly investing in seed testing laboratories to maintain quality assurance across organic, hybrid, and genetically modified seed lines. As global food security concerns continue to rise, the seed manufacturing industry will remain the largest end-user segment in the seed testing market, driving innovation and the adoption of advanced testing technologies.

MARKET SEGMENTATION – BY REGION

Global Seed Testing Market Value (US\$ Billion), By Region, 2024, 2028 & 2032

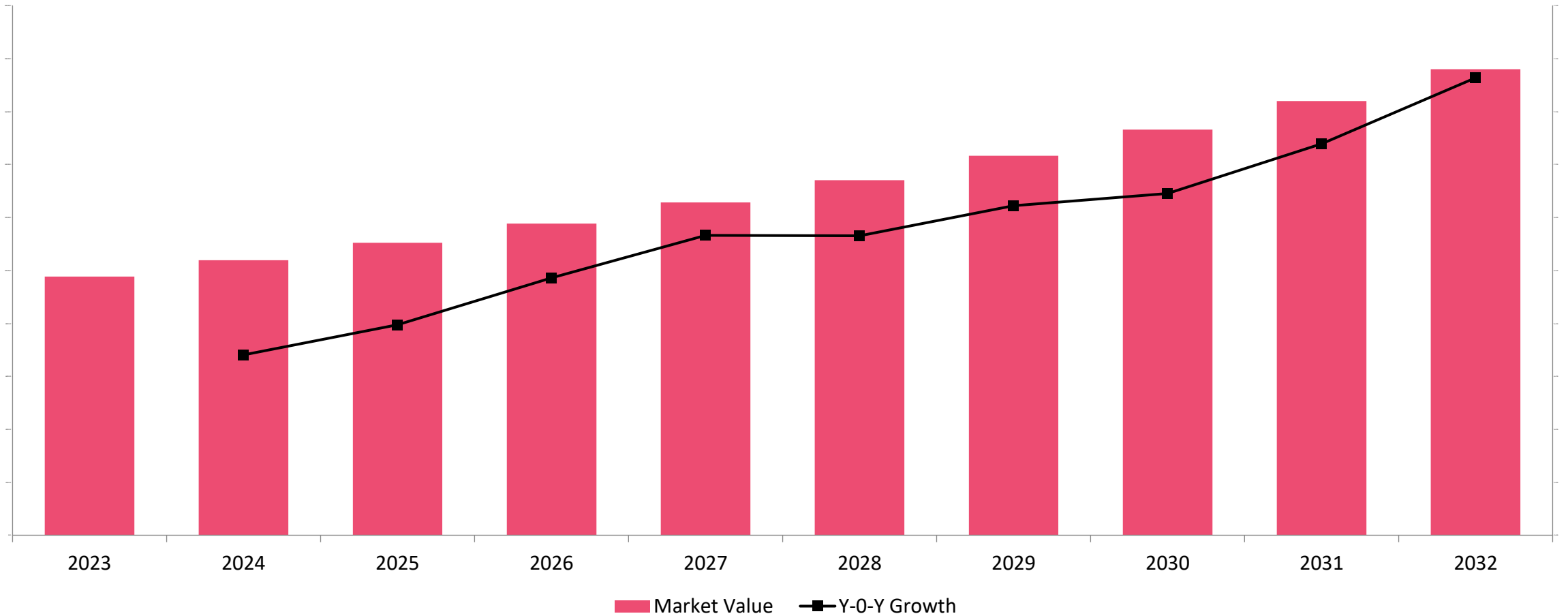
Region	2024	2028	2032
North America	XX	XX	XX
South America	XX	XX	XX
Europe	XX	XX	XX
Asia-Pacific	XX	XX	XX
Middle East & Africa	XX	XX	XX

Global Seed Testing Market Share (%), By Region, 2024



MARKET SEGMENTATION – BY REGION

North America Seed Testing Market Value (US\$ Billion), 2023-2032



MARKET SEGMENTATION – BY REGION

North America

- The seed testing market for North America was valued at US\$ XX billion in 2024 and is estimated to reach US\$ XX billion by 2032, growing at a CAGR of XX% during the forecast period from 2025-2032.
- North America dominates the global seed testing market, accounting for substantial market share, driven by strong agricultural infrastructure, regulatory standards, and technological advancements in seed testing. The presence of leading seed manufacturers, such as Corteva Agriscience, Bayer CropScience, and Syngenta, has propelled the demand for advanced seed testing technologies in the region.
- The U.S. Federal Seed Act mandates rigorous germination, purity, and trait verification testing before seeds can be sold in the market. The Association of Official Seed Analysts (AOSA) and the Canadian Food Inspection Agency (CFIA) regulate seed certification programs, ensuring seed quality meets the highest industry standards. These stringent regulations drive the adoption of high-tech seed testing solutions, including DNA fingerprinting, biochemical marker analysis, and pathogen detection assays.
- North America is at the forefront of seed testing innovation, with significant investments in biotechnology and AI-powered screening systems. The National Seed Health System (NSHS) in the U.S. has funded research into automated seed phenotyping, which allows for faster and more precise quality assessments. A study reported that technology such as Convolutional Neural Networks (CNNs) achieved over 99% accuracy in classifying corn seed quality, improving efficiency and accuracy for commercial seed production.
- Additionally, next-generation sequencing (NGS) technology is widely used in the U.S. for genetic purity testing and trait validation. Major seed companies, such as Bayer and Corteva Agriscience, have developed proprietary NGS-based seed screening platforms to accelerate the breeding of high-yield and climate-resistant crops.

MARKET SEGMENTATION – BY REGION

North America

- The U.S. and Canada are among the largest consumers of hybrid and genetically modified (GM) seeds, with over 90% of corn and soybean crops being genetically modified, according to the International Service for the Acquisition of Agri-biotech Applications (ISAAA). Seed testing plays a crucial role in ensuring the genetic stability and trait integrity of GM crops, driving demand for PCR-based genetic testing and protein-based immunoassays. As North America continues to lead the global seed testing market, the region will experience further growth in AI-driven seed analysis, genetic testing, and sustainability-focused seed certification programs, ensuring high-quality seeds for global agricultural production.

SECTION 13

COMPANY PROFILES

- ❖ Eurofins Scientific
- ❖ SGS Société Générale de Surveillance SA
- ❖ AMM Seed Testing, Inc.
- ❖ 20/20 Seed Labs Inc.
- ❖ PGRO
- ❖ SoDak Labs, Inc.
- ❖ CSP Labs
- ❖ Lifeasible
- ❖ Intertek Group plc
- ❖ Ransom Seed Laboratory, Inc.
- ❖ SeedLab

INTERTEK GROUP PLC – OVERVIEW

OVERVIEW

- A UK multinational company called Intertek Group plc, with headquarters in London, England, specializes in assurance, inspection, product testing and certification.
- The company's service section contains assurance, testing, certification and inspection.
- Intertek Group Plc's industry product offering includes chemicals, energy & commodities, food & healthcare, products & retail, hospitality & tourism, construction & engineering, transportation, products & retail and government & trade.
- The company has over 1,000 offices and laboratories and operates in over 100 countries.
- It has a geographical presence across North and South America, Asia-Pacific and Europe, the Middle East & Africa.



Intertek Group Plc

Year of Estd.	1885
Headquarters	London, UK
Company Type	Public
Number of Employees (2023)	~43,500
Website	www.intertek.com

INTERTEK GROUP PLC – PRODUCTS

PETtrace 800 cyclotron

The GE Healthcare PETtrace 800 cyclotron series is a compact, automated, dual-particle cyclotron system designed for fast, easy and efficient production of PET tracers. The PET isotopes that can be produced by PETtrace 800 include oxygen-15, nitrogen-13, carbon-11, fluorine-18 as well as a number of solid target isotopes. The isotopes are automatically transferred to the chemistry processing systems for efficient conversion into finished PET tracers and precursors.

MiTrace Q16 F18- production system

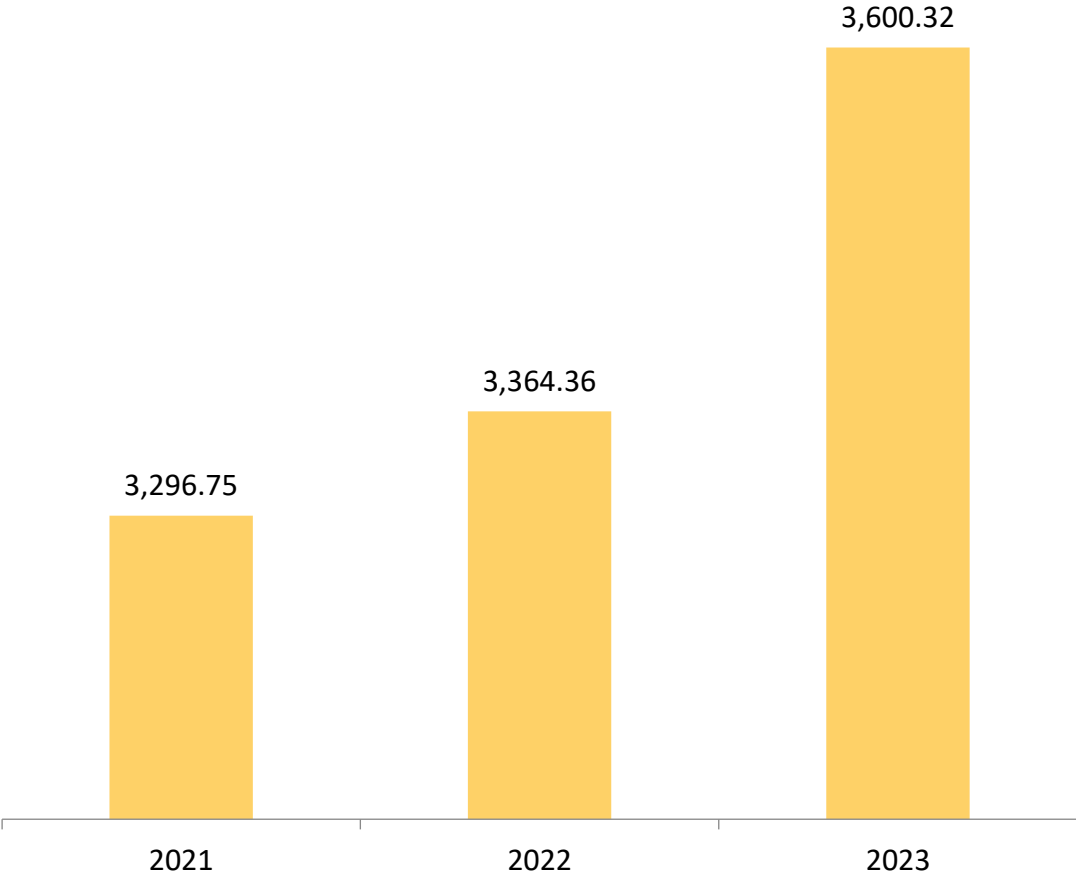
The GE Healthcare MiTrace Q16 positron emitting isotope production system is a compact, self-shielded, highly automated cyclotron. It enables fast, easy and efficient production of PET tracers. The design makes it an affordable platform based on the well-proven PETtrace cyclotron.

GETrace cyclotron

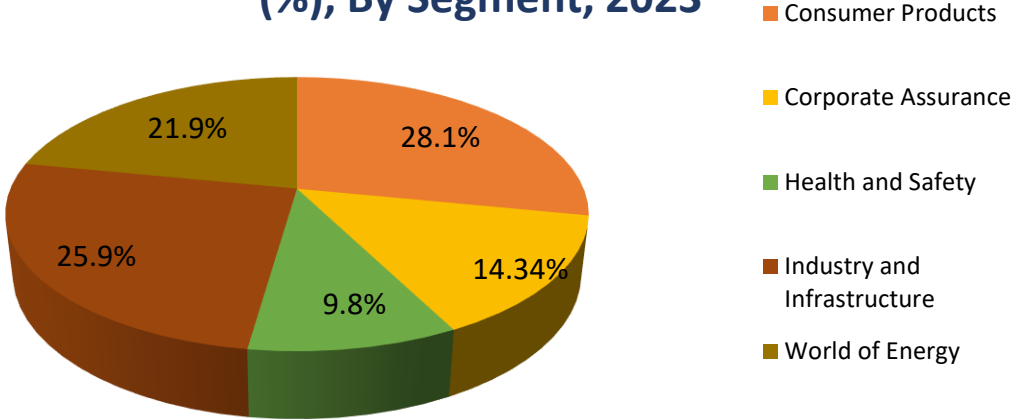
The GE Healthcare GETrace cyclotron is a compact, automated, single-particle cyclotron designed for fast, easy and efficient production of PET isotopes. The PET isotopes produced by the GETrace are fluorine-18 and carbon-11.

INTERTEK GROUP PLC – FINANCIALS

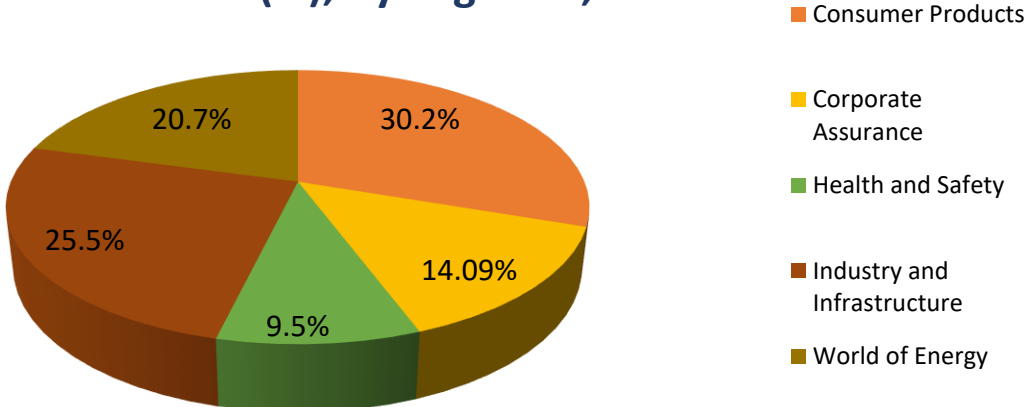
Intertek Group Plc Financials (US\$ Million), 2021-2023



Intertek Group Plc Market Share Distribution (%), By Segment, 2023

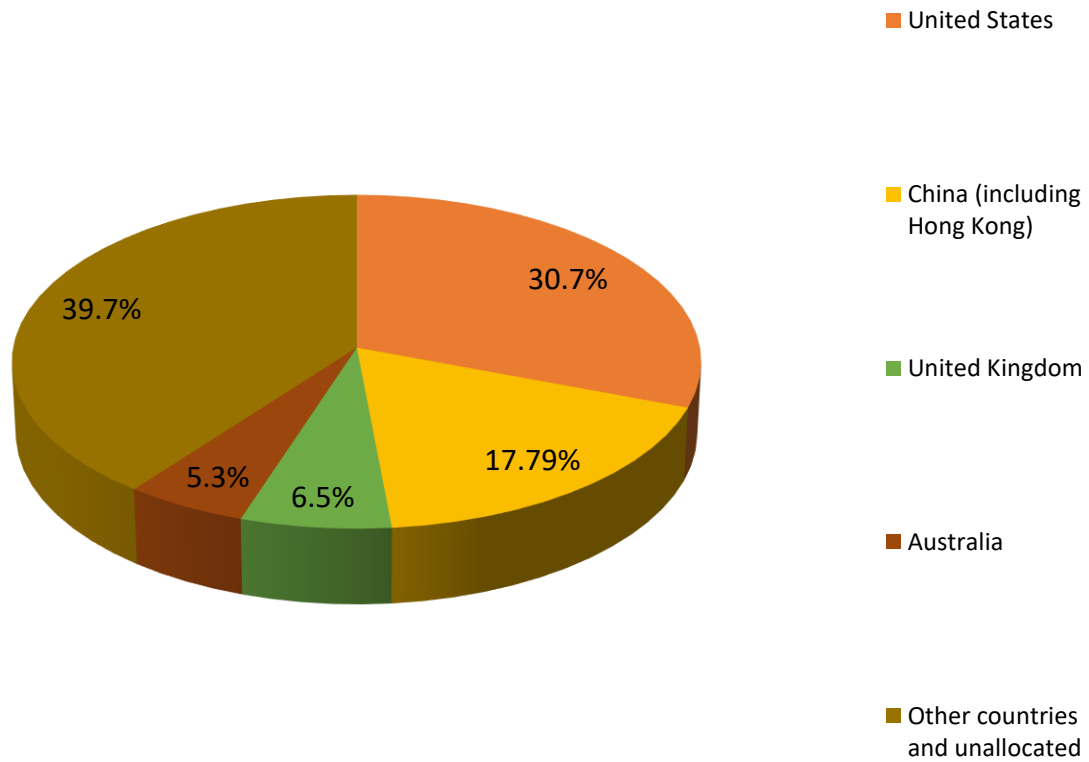


Intertek Group Plc Market Share Distribution (%), By Segment, 2022

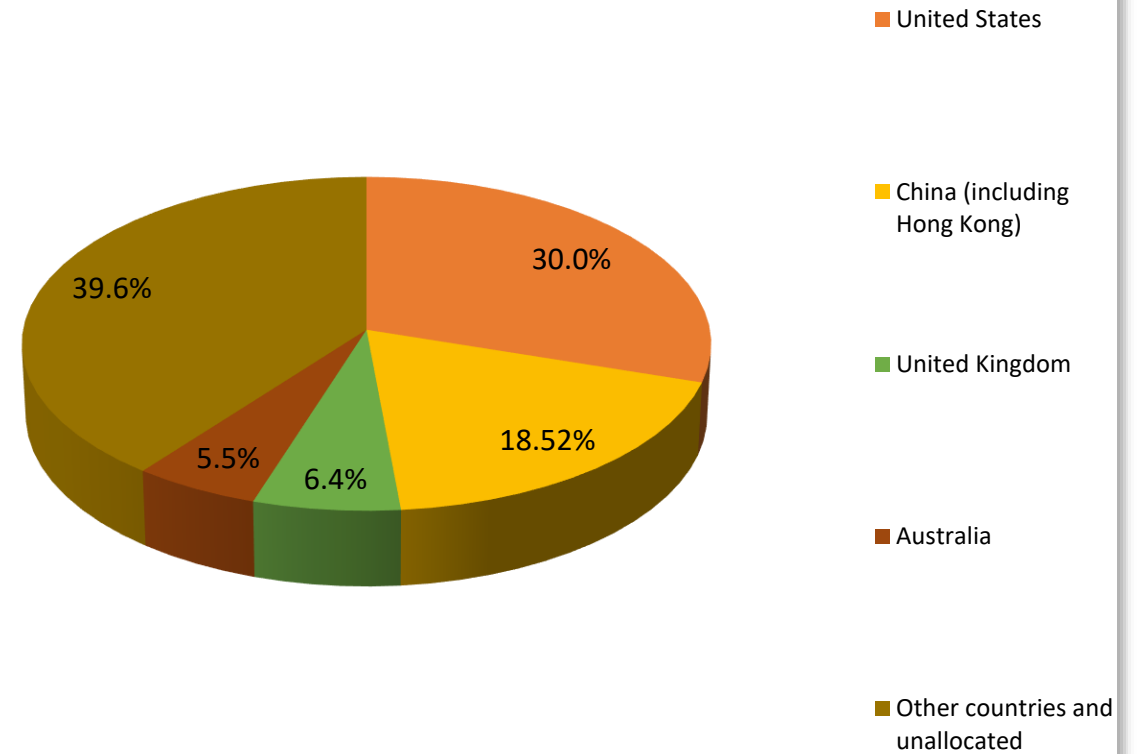


INTERTEK GROUP PLC – FINANCIALS

Intertek Group Plc Market Share Distribution (%), By Region, 2023

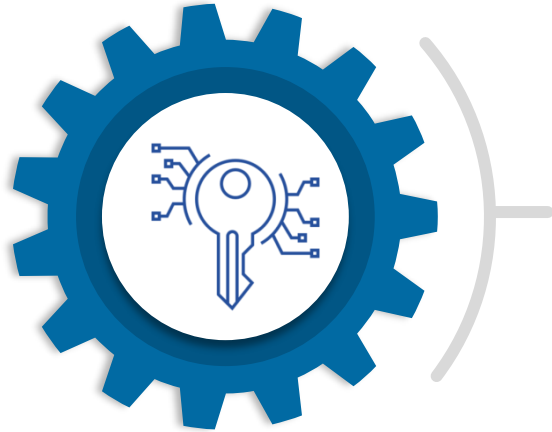


Intertek Group Plc Market Share Distribution (%), By Region, 2022



June 04 2024

Product Launch



AMTAS Products Inc. signed a strategic partnership with GE Healthcare around AMTAS' proprietary QUANTUM Innovation System (QIS) for radioisotope production. The goal of the partnership is to supply equipment, technologies and research that supports the production and processing of radioisotopes on GE's PETrace 800 platform of medical cyclotrons. The QIS integrates on to the GE PETrace 800 series cyclotron to enable an alternative, non-reactor supply of valuable medical isotopes including technetium 99m, copper 64, gallium 68 and zirconium 89.

ABOUT DATAM INTELLIGENCE

DataM Intelligence was established on the elemental idea of publishing Advanced Market Research Reports with precise data points & utmost accuracy that will accelerate the decision-making in designing disruptive solutions.

DataM Intelligence has set its standards in the market, which resulted in having our own set of recurring clients who are willing to invest in us and build business relationships with customers across the globe. We started working with clients on customized reports and providing market intelligence insights pulling ahead of our competitors.

The Company has taken up many consult projects during this growth period, which paved the way for introducing new launches in the forthcoming years.

WE THRIVE TO SERVE

We serve various individuals and entities across B2B, including Industry Investors & Investment Bankers, Research Professionals, Emerging Companies, Raw Technology Suppliers/ Buyers, Manufacturing Process Suppliers/ Buyers and Research Institutes.

Our Functions help clients to make informed strategic decisions to leverage expertise and minimalize risks by

- Ascertaining target potential customers
- Identifying key market trends and competitor strategies
- Analyzing competitors' products, pricing, financials, sales and strategy
- Identifying investment opportunities
- Interpreting Market Entry Prospects

