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Agrigenomics Market Forecasts to 2034 – Global Analysis By Sequencer Type (Sanger Sequencing, Illumina Hi Seq Family, Pacbio Sequencers, Solid Sequencers and Other Sequencer Types), Objective (DNA Extraction & Purification, DNA/RNA Sequencing, Genotyping, Gene Expression Profiling, Marker-assisted Selection, GMO/Trait Purity Testing and Other Objectives), Technology (Real-Time PCR (qPCR), Microarrays, Next Generation Sequencing, Capillary Electrophoresis and Other Technologies), Application and by Geography

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Abstracts

According to Stratistics MRC, the Global Agrigenomics Market is accounted for $5.7 billion in 2026 and is expected to reach $13.9 billion by 2034 growing at a CAGR of 11.7% during the forecast period. In order to improve agricultural practices, the interdisciplinary field of agrigenomics combines genomics, genetics, and informatics. In order to improve the resilience, productivity, and nutritional value of crops and livestock, it focuses on comprehending their genetic makeup. Moreover, researchers can pinpoint important features that affect growth, disease resistance, and environmental adaptability by studying the complete set of genes in agricultural species. Through genetic engineering and selective breeding, agrigenomics is essential to the development of better livestock breeds and crop varieties.

According to the Food and Agriculture Organization (FAO), many countries are developing sustainable grains to feed the growing world population while safeguarding

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the natural environment, diversifying food production, protecting plant and animal health, and reducing the drudgery of farming.

Market Dynamics:

Driver:

Rising demand for food worldwide

The unrelenting increase in the world's population has led to an increased need for food. In order to create crops and livestock with improved productivity, nutritional profiles, and disease resistance, agrigenomics uses genetic insights. Additionally, scientists can selectively breed for traits that greatly increase overall food production to meet the ever-increasing needs of the global population by deciphering the genetic code of agricultural organisms.

Restraint:

Expensive initial outlay

Agrigenomic technology adoption necessitates large upfront expenditures for infrastructure, machinery, and qualified labor. These high upfront costs can be especially difficult for smaller farms, making it more difficult for them to implement and reap the benefits of agrigenomic innovations. Furthermore, to reduce these financial obstacles, tactics like financial incentives and public-private partnerships might be crucial.

Opportunity:

Integration of precision agriculture

There are a lot of benefits associated with agrigenomics and precision agriculture combined. Farmers are able to optimize resource utilization, minimize environmental impact, and improve overall agricultural efficiency by utilizing genomic data in conjunction with real-time field information to make data-driven decisions regarding crop management. Moreover, there is a chance that this combination will transform agricultural methods and advance sustainable farming.

Threat:

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Public perception and ethical concerns

Public resistance and unfavorable perceptions can result from ethical concerns about genetically modifying crops and livestock. Concerns about eating genetically modified organisms (GMOs) and the unknown consequences for ecosystems in the long run could lead to obstacles in the way of regulations and difficulties in the market. Additionally, managing these ethical issues requires bridging the knowledge gap between scientific discoveries and general public perception.

Covid-19 Impact:

The agrigenomics market has experienced a number of effects from the COVID-19 pandemic. Although the industry was initially hindered by labor shortages, supply chain disruptions, and logistical challenges, the crisis has also highlighted the significance of resilient and sustainable agricultural practices. Furthermore, the adoption of agrigenomic solutions has accelerated due to growing awareness of food security and the need for cutting-edge technologies to improve crop resilience and productivity. The pandemic has also brought attention to the importance of precision farming, digital agriculture, and remote monitoring.

The DNA Extraction & Purification segment is expected to be the largest during the forecast period

With its foundational role in numerous downstream applications, the DNA extraction and purification segment holds the largest share. To obtain genetic material of superior quality from agricultural organisms and facilitate further analyses, the extraction and purification of DNA are essential steps. Moreover, the techniques and tools covered in this section include separating and cleaning DNA in order to preserve its integrity for further uses such as genotyping, gene expression profiling, DNA/RNA sequencing, and marker-assisted selection. In order to obtain precise genomic information and impact the outcome of various agrigenomic applications, efficient DNA extraction is essential.

The Next Generation Sequencing segment is expected to have the highest CAGR during the forecast period

The segment with the highest CAGR has been Next Generation Sequencing (NGS). High-throughput, massively parallel sequencing of DNA and RNA was made possible by Next Generation Sequencing Technologies, which completely changed the field of

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genomic analysis. Due to its ability to quickly and affordably generate large volumes of sequence data, this market has experienced remarkable growth. NGS is essential to agrigenomics because it provides information about the whole genomic makeup of cattle and crops. Additionally, it makes a variety of applications possible, such as metagenomics, targeted sequencing for marker-assisted selection, and whole-genome sequencing.

Region with largest share:

The largest market share for agrigenomics is projected to be held by the European region. Agriculture genomics has advanced significantly, thanks in large part to the efforts of European nations like the UK, Germany, and France. With an emphasis on precision farming and sustainable agriculture, the area has seen significant investments in research and development. In terms of crop improvement, livestock breeding, and tackling environmental challenges in agriculture, Europe has led the way in the use of agrigenomic technologies. Furthermore, agrigenomics has become more popular in the European market due to the existence of important research institutions, industry-academia collaboration, and supportive government policies.

Region with highest CAGR:

In the agrigenomics market, the Middle East and Africa (MEA) region has shown the highest CAGR. The region has demonstrated a growing interest in implementing cutting-edge genomic technologies for agricultural applications, especially in South Africa and some Gulf nations. Agrigenomic solutions have become more and more expensive due to factors like the need for food security, problems with water scarcity, and an emphasis on sustainable agriculture. Moreover, in the MEA region, both public and private organizations are investigating the application of genomics to enhance livestock breeds, optimize agricultural practices, and improve crop varieties.

Key players in the market

Some of the key players in Agrigenomics market include F.Hoffmann-La Roche Ltd., Agilent Technologies Inc., Illumina Inc., GalSeq Srl Via Itaia, Arbor Biosciences, LGC Limited, Eurofins Scientific SE, Abbott Laboratories, Tecan Genomics, Inc., Neogen Corporation, Agrigenomics Inc, Thermo Fisher Scientific Inc, Biogenetic Services, Inc., SciGenom Labs Pvt. Ltd. and Zoetis Inc.

Key Developments:

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In December 2023, F.Hoffmann-La Roche Ltd. announced today the entry into a definitive agreement to acquire select parts of the LumiraDx group related to LumiraDx’s innovative Point of Care technology. Following closing of the transaction, which is expected by mid-2024, the acquired entities will be fully integrated into Roche Diagnostics.

In July 2023, Illumina Inc., a global leader in DNA sequencing and array-based technologies, and Pillar Biosciences Inc., the pioneers of Decision Medicine™, today announced a strategic partnership to make Pillar's suite of oncology assays commercially available globally as part of the Illumina portfolio of oncology products.

In March 2023, Agilent Technologies Inc. today announced a multi-year distribution agreement with Proscia® – a leader in digital pathology – to offer a comprehensive digital diagnostic pathology system. Combining Agilent's trusted pathology staining solutions with Proscia’s Concentriq® Dx enterprise pathology platform will empower pathology labs to transform diagnostic efficiency and quality to improve patient health outcomes.

Sequencer Types Covered:

- Sanger Sequencing
- Illumina Hi Seq Family
- Pacbio Sequencers
- Solid Sequencers
- Other Sequencer Types

Objectives Covered:

- DNA Extraction & Purification
- DNA/RNA Sequencing
- Genotyping

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- Gene Expression Profiling
- Marker-assisted Selection
- GMO/Trait Purity Testing
- Other Objectives

Technologies Covered:

- Real-Time PCR (qPCR)
- Microarrays
- Next Generation Sequencing
- Capillary Electrophoresis
- Other Technologies

Applications Covered:

- Crops
- Livestock
- Other Applications

Regions Covered:

- North America
  - US
  - Canada

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- 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

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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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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)

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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

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