Agrigenomics Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Purpose (DNA Extraction & Purification, DNA/RNA Sequencing, Genotyping, Gene Expression Profiling, GMO/Trait Purity Testing, Others), By Sequencer Type (Sanger Sequencing, Pacbio Sequencers, Solid Sequencers, Illumina HI SEQ Family, Others), By Application (Livestock and Crops), By Region & Competition, 2020-2030F

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Report description:

Global Agrigenomics Market was valued at USD 4.26 Billion in 2024 and is expected to reach USD 7.14 Billion by 2030 with a CAGR of 8.99% during the forecast period. Agriculture has been instrumental in sustaining and improving human life for thousands of years. However, with a changing environment and a rapidly increasing population, there is a growing demand for more efficient and sustainable farming practices. Agricultural genomics, also known as Agrigenomics, is the application of genomics in agriculture. It plays a crucial role in driving sustainable productivity and addressing the challenges of feeding the expanding global population.

Through the use of advanced technology, farmers, researchers, and breeders can easily identify genetic markers associated with desirable traits. This information informs important decisions related to cultivation and breeding, ultimately benefiting farming practices. Agrigenomics finds applications in various platforms, including Plant and Animal Genomics, Commercial Agriculture, Agriculture Consortia, and Agricultural Community. It empowers commercial agriculture with applications such as trait screening, marker-assisted backcrossing, and parentage testing. Additionally, Agrigenomics aids in enhancing plant adaptation to environmental stresses through genetically-based programs, leading to improved crop production and sustainable growth in agriculture while preserving the ecological foundation of plant production.

Key Market Drivers

Growing Demand for Crop & Livestock

The global agrigenomics market is projected to witness significant growth, primarily driven by the increasing demand for crop and livestock. As the world's population continues to expand, the necessity for larger food production is more urgent than ever, and this is where agrigenomics comes in. Agrigenomics, the application of genomics in agriculture, enables breeders to produce high-yielding and disease-resistant varieties faster and more efficiently. This is crucial in the current scenario where the agricultural sector faces challenges such as changing climate conditions, pests, and disease outbreak. Similarly, in livestock production, agrigenomics plays an indispensable role by identifying and propagating desirable traits, thereby improving the quality and quantity of meat or dairy products. Given the aforementioned factors, the global demand for agrigenomics is expected to surge. The need for sustainable and efficient farming practices to meet the rising demand for food presents immense growth opportunities for the agrigenomics market worldwide. High-throughput sequencing technologies and bioinformatics are expected to further fuel this demand, offering innovative, cost-effective, and time-saving solutions to meet the growing needs for food and nutritional security.

According to World Resource Institutes, A recent analysis shows that only 37% of the harvested area of major crops are used for direct food consumption - that is, crops used for foods that are produced and consumed domestically. Research shows these crops are critical to food security in developing nations where small-scale farming is a major source of food for the people who live there. The rest goes to exports, processing, industry or other uses. And while croplands are expanding and crop yields are increasing overall, the proportion of direct food crops lags. This is especially problematic for the 50 countries poised to be food insecure by 2030 if current trends continue.

Exponential Increase in The World Population

Key Market Challenges

High Cost Associated with Devices

High costs associated with agrigenomic devices are expected to pose a significant hurdle to the global adoption and growth of this market. As the technology is still in its developmental stages, the devices required for genetic modification and analysis in agriculture are priced exorbitantly. These high costs may deter small and mid-size farmers, particularly in developing regions, from adopting these advanced technologies, thus restricting the growth of the global agrigenomics market. Furthermore, even though agrigenomics holds the potential for significant yield improvements and efficient disease management, the immediate financial burden of these devices may overshadow their long-term benefits. In regions where agriculture is largely subsistence-based, the financial inability to procure such expensive equipment could potentially result in a slower adoption rate of agrigenomics. Therefore, while agrigenomics promises a revolutionary impact on agriculture, the high costs associated with the prerequisite devices may decrease its global demand. This underscores the need for efforts aimed at cost reduction and the development of affordable devices to ensure the broad accessibility of agrigenomic technology.

Key Market Trends

Growing Adoption of Various Sequencing Techniques

The global agrigenomics sector is poised to experience a surge in demand, driven primarily by the increasing adoption of various sequencing techniques. These methodologies, ranging from Whole Genome Sequencing (WGS) to Targeted Sequencing, offer agricultural scientists unprecedented insights into crop and livestock genomes. By analyzing genetic data, researchers can uncover traits that influence yield, resistance to disease, and adaptation to climatic conditions, paving the way for the development of enhanced plant and animal varieties. As the world grapples with climate change and a growing population, the importance of efficient, sustainable agriculture cannot be overstated. Consequently, the potential of sequencing technologies to boost crop productivity and livestock health is resonating with stakeholders globally, driving investment and interest in agrigenomics. Furthermore, decreasing sequencing costs and advancements in bioinformatics are making these powerful tools more accessible to scientists worldwide. This democratization of genomics promises to catalyze innovation in the agricultural sector, further spurring global demand for agrigenomics.

Key Market Players

- Illumina, Inc.
- Thermo Fischer Scientific, Inc.

-Agilent Technologies, Inc.
-Eurofins Scientific SE
-LGC Limited
-Tecan Genomics, Inc.
-Neogen Corporation
-Galseq Srl Via Italia
-Biogenetic Services' Inc.
-BGI

Report Scope:

In this report, the Global Agrigenomics Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

-Agrigenomics Market, By Purpose:
- DNA Extraction & Purification
- DNA/RNA Sequencing
- Genotyping, Gene Expression Profiling,
- GMO/Trait Purity Testing
- Others

-Agrigenomics Market, By Sequencer Type:
- Sanger Sequencing
- Patio Sequencers
- Solid Sequencers
- Illumina HI SEQ Family
- Others

-Agrigenomics Market, By Application:
- Livestock
- Crops

-Agrigenomics Market, By Region:
- North America
  - United States
  - Canada
  - Mexico
- Europe
  - France
  - United Kingdom
  - Italy
  - Germany
  - Spain
- Asia-Pacific
  - China
  - India
  - Japan
  - Australia
  - South Korea
- South America
  - Brazil
  - Argentina
  - Colombia

o Middle East & Africa
 South Africa
 Saudi Arabia
 UAE
Competitive Landscape
Company Profiles: Detailed analysis of the major companies present in the Global Agrigenomics Market.
Available Customizations:
Global Agrigenomics market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:
Company Information
-Detailed analysis and profiling of additional market players (up to five).

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