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Agrigenomics Market by Application (Crops and Livestock), Sequencer Type (Sanger Sequencing, Illumina HiSeq Family, PacBio Sequencer, SOLiD Sequencer), Objectives, and Region (North America, Europe, APAC, South America,Row) - Forecast year 2026

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Abstracts

The global agrigenomics market is estimated to be USD 3.3 billion in 2021 and is projected to reach USD 5.3 billion by 2026, at a CAGR of 9.7% from 2021 to 2026. The agrigenomics market is increasingly driven by technological advancements in systems & services of applied genomics, demonstrable increase in the efficiency and productivity of current agricultural practices, greater availability of reference genomes, and utilization of genotyping for genome-wide association studies, genomic prediction, and cultivation of gene-edited elite cultivars with desirable traits, such as high yield, stress tolerance and pest resistance along with high milk and meat yields, better health, and increased productivity in case of livestock. The large-scale genetic characterization in some of the commercially relevant crops has provided a framework that is applicable to other crops as well. With the mounting dual challenges of population growth and climate change, new strategies, including genetic advancements, must be available to producers to address concerns of yield optimization and food security.

“The market for livestock is projected to grow at the highest CAGR between 2021 and 2026.”

The livestock segment is projected to gain further growth traction during the forecast period owing to rapid adoption and commercialization of the novel genotyping platforms and related techniques such as marker-based selection (MAS) and marker-based

breeding (MAB) to identify complex inheritance traits. The global demand for animal-based food products is expected to increase by 70% by 2050. The implementation of advanced genetic technologies in livestock production will ensure minimal environmental impact with optimized animal health & fertility.

A shift from traditional animal breeding to genomic selection is estimated with the introduction of genome analysis tools. The presence of next-generation sequencers has enabled researchers to quickly and effectively determine the single nucleotide polymorphisms associated with commercially important phenotypic traits and estimate the breeding value (EBV) at an earlier stage of young animals.

“The Marker-assisted selection by objective is projected to grow at the highest CAGR between 2021 and 2026.”

The Marker-assisted selection is expected to grow at the highest rate during the forecast period as it is cheaper and faster than any conventional phenotypic assays, depending on the trait. Marker-assisted selection or marker-aided selection (MAS) is an indirect selection process where a trait of interest is selected based on a marker (morphological, biochemical, or DNA/RNA variation) linked to a trait of interest (e.g., productivity, disease resistance, abiotic stress tolerance, and quality), rather than on the trait itself. This process has been extensively researched and proposed for plant and animal breeding. It uses conventional breeding approaches and does not involve transgenic approaches. Marker-assisted breeding uses DNA markers associated with desirable traits to select a plant or animal for inclusion in a breeding program early in its development. This approach dramatically reduces the time required to identify varieties or breeds which express the desired trait in a breeding program. The marker may be the sequence of the gene that determines the trait, but in most cases, it is a DNA sequence which is located very close to the gene of interest and is therefore always inherited with the trait. Desirable traits include disease resistance, salt tolerance, and high yield. Hence, DNA markers have enormous potential to improve the efficiency and precision of conventional plant breeding via marker-assisted selection.

“Illumina HiSeq Family by sequencer type is projected to grow at the highest CAGR between 2021 and 2026.”

The Illumina Hi Seq Family held the largest share in 2020 and is also expected to grow at the highest rate as it is an efficient ultra-high-throughput sequencing system that supports the broadest range of applications and study sizes. Based on sequencer type, Illumina Hi Seq Family led the agrigenomics market, exhibiting a significant share of in

2020, registering a value of USD 1,393.2 million. It is also the most widely utilized next-generation sequencing (NGS) technology owing to its high throughput and exceptional operational performance. It also exhibits greater sensitivity to detect low-frequency gene variants. PacBio and solid sequencers are also expected to exhibit decent growth rates during the forecast period. Sequencing by ligation (SOLiD) utilizes DNA ligase, an enzyme widely used in biotechnology for its ability to ligate double-stranded DNA strands – owing to its two-base sequencing method, it is the most accurate and economical second-generation sequencing platform.

“The agrigenomics market in the Asia Pacific region is projected to grow at the highest CAGR during the forecast period. “

The Asia Pacific region is projected to be the fastest-growing in the global agrigenomics market at a CAGR of 10.6%. The growth in the region is projected due to the progress in research and development activities in India, China, and Japan. The availability of high-quality reference genome sequences for a majority of crops has strengthened the foundation of functional genomics in the region. Asia Pacific is the most populous continent with growing concerns for food and nutritional security. The region also produces important food crops such as rice, wheat, barley, chickpea, and pigeon pea. The agrigenomics solutions adopted in a full-fledged manner across the key markets of the region can emerge as a strong tool in the attainment of zero hunger as a sustainable development goal.

In the process of determining and verifying the market size for several segments and sub-segments gathered through secondary research, extensive primary interviews have been conducted with the key experts.

The breakup of the profiles of primary participants is as follows:

By Manufacturers: Tier 1 – 20%, Tier 2 – 50%, and Tier 3 – 30%

By Designation: CXOs – 31%, Managers – 24%, Executives – 45%

By Geography: Europe – 29%, Asia Pacific – 32%, North America – 24%, South America – 12%, and RoW – 3%

The key players in this market include Thermo Fisher Scientific, Inc. (US), Agilent Technologies, Inc. (US), Illumina, Inc. (US), Eurofins Scientific SE (Luxembourg), and

LGC Limited (UK). Some of these players–Thermo Fisher Scientific, Inc. (US) and Illumina, Inc. (US)–are both, technology and service providers who have streamlined their supply chain in providing agrigenomics services.

Research Coverage

The report segments the agrigenomics market based on type, species, application, and region. In terms of insights, this report has focused on various levels of analyses—competitive landscape, end-use analysis, and company profiles—which together comprise and discuss views on the emerging & high-growth segments of the agrigenomics , high-growth regions, countries, government initiatives, drivers, restraints, opportunities, and challenges.

Reasons to Buy the Report:

Illustrative segmentation, analysis, and forecast pertaining to the agrigenomics market based on type, species, application, and geography have been conducted to provide an overall view of the agrigenomics market

Major drivers, restraints, and opportunities for the agrigenomics market have been detailed in this report.

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