

Plant Breeding Market: Current Analysis and Forecast (2024-2032)

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Abstracts

Plant breeding within the global market specializes in the creation of advanced crop varieties through conventional alongside modern breeding approaches to boost product output as well as disease opposition and climate tolerance levels. The market is moving forward because of rising food requirements together with changes in climate conditions along with ecological demands in agricultural operations. The combination of CRISPR gene editing and AI-driven breeding with marker-assisted selection (MAS) speeds up the process of developing crops. Market expansion happens due to sustained government support and research institution-agribusiness partnerships while agricultural biotechnology receives increased funding.

The plant breeding market is set to show a growth rate of about 13.5%. Favorable policies, funding, and incentives for research and development in plant breeding boost this market. Also, increasing R&D, investment, product advancements, and collaborations in this industry drive the Plant Breeding market. For instance, in June 2024, as part of its commitment to stimulate innovation and advance sustainability in agriculture, Syngenta Group, one of the world's top agricultural technology corporations, granted academic researchers worldwide access to chosen genome-editing and breeding technologies. These rights are accessible through Syngenta's innovation cooperation platform Shoots.

Based on type, the market is segmented into conventional and biotechnological. Among these, the conventional category is to witness higher CAGR during the forecast period. This is due to the because conventional plant breeding provides affordable non-GMO ways to enhance plant characteristics including yield improvement and disease resistance as well as climate resilience capabilities. Through hybrid breeding along with marker-assisted selection (MAS), scientists

develop superior plant varieties without facing regulatory issues. The increasing food requirements and climate difficulties drive farmers and agribusinesses to choose conventional methods for crop improvement since they offer both sustainable and market-friendly solutions thus contributing to market growth.

Based on the trait, the market is segmented into herbicide tolerance, disease resistance, and yield improvement. Among these, the herbicide tolerance category is the largest contributor to the plant breeding industry because this technology develops crops that defend against specific herbicides while minimizing weed control problems. Farming operations require herbicide-resistant crops because farmers need more productive systems that eliminate manual weeding procedures. Genetic modification and gene editing through technologies like CRISPR and transgenic breeding have speeded up the creation of herbicide-resistant crops targeting soybean corn and cotton farms. The segment continues to grow because precision agriculture adopters understand how effective weed management enables better yields and cost reduction.

Based on the application, the market is segmented into cereals & grains, oilseeds & pulses, fruits & vegetables, and others. Among these, the cereals & grains category is the largest contributor to the plant breeding industry because these foods play an essential part in securing food supplies at the global level. Wheat rice maize and barley along with barley serve as dietary base components worldwide that require yield improvement and drought-resistant and disease-resistant traits to fulfill growing food requirements. Marker-assisted selection (MAS) as well as genomic selection assist researchers in creating high-yield cereal varieties that resist climate change impacts. Grain production receives additional funding for both fortified and biofortified food products which contain increased amounts of essential nutrients such as Vitamin A alongside iron to fight malnutrition. Markets expand because of fast-growing hybrid and genetically upgraded cereal implementation in developing areas which creates better food security even during climate change conditions.

For a better understanding of the market adoption of plant breeding, the market is analyzed based on its worldwide presence in countries such as North America (U.S., Canada, and the Rest of North America), Europe (Germany, U.K., France, Spain, Italy, Rest of Europe), Asia-Pacific (China, Japan, India, Rest of Asia-Pacific), Rest of World. Among these, the North American plant breeding market

expands through technological advancements in agriculture combined with intensive research investment and increasing crop requirements for high production and climate resistance. Fast and precise crop development becomes achievable because the region uses biotechnological innovations and CRISPR gene editing as well as marker-assisted selection (MAS). Plant breeding markets in the U.S. and Canada are supported by effective government policies together with major seed companies including Corteva Bayer and Syngenta along with rising non-GMO and organic crop use. Environmental fears and food stability needs are speeding up the usage of modern breeding techniques across North America which establishes this region as a vital participant in worldwide plant evolutionary developments.

Some major players running in the market include Bayer AG; Bejo Zaden B.V.; Corteva; Enza Zaden; KWS SAAT SE & Co. KGaA; Limagrain; Rijk Zwaan Zaadteelt en Zaadhandel B.V.; SAKATA SEED CORPORATION; Syngenta Crop Protection AG; Takii Europe B.V.

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