



MARKER-ASSISTED SELECTION

MARKER-ASSISTED SELECTION (MAS) IS THE USE OF GENETIC ASSAYS to identify the presence of a specific gene or combination of genes that carry a desirable trait, such as insect and disease resistance, or genes affecting agronomic traits and yield. By using this technology, DuPont Pioneer is able to more efficiently identify and develop products that bring growers the greatest value.

STATUS: This technology has helped develop Pioneer® brand products already in the market and is assisting researchers in discovering and validating new trait genes

TECHNOLOGY LOCATION: Worldwide

CROPS: Corn, Soybeans, Wheat, Sunflower, Canola, Sorghum, Rice

TECHNOLOGY APPLICATION: Discovery & Development

- DISCOVERY OF NEW GENES AND TRAITS TO HELP SOLVE AGRICULTURAL CHALLENGES
- IMPROVE PRECISION AND SPEED IN CREATING AND TESTING PRODUCTS

TECHNOLOGY LEADER

UNIQUE SEQUENCING + APPLICATIONS + VERSATILITY IN CROPS

ANTICIPATING NEEDS / Current Growers want access to the crop hybrids and varieties that deliver the best performance, top end yield potential and protection of that yield. Marker-assisted selection allows Pioneer to identify genes and traits to deliver superior product performance. Using MAS, Pioneer is able to speed up product development timelines and screen significantly larger number of gene combinations and individuals, therefore bringing our customers better products, faster. Pioneer is actively identifying and utilizing genetic assays in corn to enhance yield and key defensive and agronomic traits such as disease resistance, standability, yield, and drought tolerance. MAS is an integral part of the AYT™ system. Y and T Series soybean varieties developed using the AYT™ system have provided customers with a measurable yield advantage.

DELIVERING SOLUTIONS / Pioneer has been using molecular markers to develop commercial products for more than a decade. In addition to finding solutions for specific agronomic challenges in a variety of crops, we have dramatically expanded overall capacity of our patented MAS process by combining automation and extensive information management systems. In the past decade, Pioneer has increased marker throughput 1,000 fold.

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