DOUBLED HAPLOIDS (DH) IMPROVE PLANT BREEDING EFFICIENCY AND EFFECTIVENESS by generating inbred lines with 100 percent purity in two generations in corn and one generation in canola. DH technology increases genetic gain per cycle, increases efficiency of the breeding program, and reduces costs associated with research and development.

**STATUS**: This technology has helped develop Pioneer® brand products worldwide

**TECHNOLOGY LOCATION**: North America, South America, Asia Pacific, Africa

**CROPS**: Corn, Canola, Wheat

**TECHNOLOGY LEADER**

**TECHNOLOGY APPLICATION**: Development

**IMPROVE PRECISION AND SPEED IN CREATING AND TESTING PRODUCTS**

**ANTICIPATING NEEDS** / Demand for locally adapted products rises as expansion of traditional growing areas continues to increase. DH technology allows DuPont Pioneer to meet this demand by dramatically increasing the speed of inbred development. DH technology reduces the number of generations of breeding needed, while increasing the predictability of phenotyping (visible characteristics) and genotyping (genetic characteristics). This allows Pioneer scientists to evaluate more corn, canola, and wheat germplasm in less time, increase the rate of genetic gain in inbred lines, and ensure that products being developed deliver the best possible solutions for customers. DH technology increases efficiency of the breeding program.

**DELIVERING SOLUTIONS** / Pioneer is committed to using the best enabling technologies to deliver superior products to customers as quickly as possible. In the last two years, more corn inbred lines have been developed by Pioneer scientists via DH technology than in the first 80 years of the breeding program. In canola, the majority of canola inbreds have been generated through DH technology. DH has become a key component in the product development process by enabling breeders to both increase the number of genetic combinations and to immediately test final inbred lines. Use of patented proprietary methods to develop DH lines has allowed Pioneer to accelerate the breeding program and meet aggressive development timelines in the research pipeline.

*Trademarks and service marks of DuPont, Pioneer or their respective owners. © 2017*