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DuPont Pioneer Scientists Demonstrating Potential of CRISPR-Cas for Agriculture

- *Recent study illustrates first example of drought tolerance in corn with CRISPR-Cas*
- *Four published CRISPR-Cas papers for DuPont Pioneer within the past 12 months*
- *DuPont Pioneer seeking to collaborate to further scientific progress and wider adoption of CRISPR-Cas*

JOHNSTON, Iowa, Aug. 17, 2016 – DuPont Pioneer researchers are reporting the results of scientific studies demonstrating the potential of CRISPR-Cas as an advanced plant breeding technology to increase the productivity and sustainability of agricultural products. This week, *Plant Biotechnology Journal* features a [Pioneer manuscript](#) describing the first application of CRISPR-Cas to improve a corn plant's own ability to withstand drought stress.

“Rapid population growth coupled with limited resources and climate change requires innovation to keep pace at a similarly rapid rate,” said Neal Gutterson, vice president, Research & Development, DuPont Pioneer. “DuPont Pioneer scientists are working hard to improve the efficiency with which we develop robust seed products for the benefit of growers and society. CRISPR-Cas is one of the tools we’re using to do just that.”

CRISPR-Cas advanced plant breeding technology develops improved seeds by using the native characteristics available within the target crop. In this most recent published example, Pioneer scientists applied CRISPR-Cas to specifically edit a gene identified for its innate ability to promote drought tolerance. DuPont Pioneer field trials of the resulting elite corn hybrids exhibited an average five-bushel-per-acre increase in grain yield under water-limited stress during flowering, and no decrease in yield under optimal water availability. Additional trials are currently being conducted to determine commercial potential under a variety of environments.

Other Pioneer studies related to CRISPR-Cas advanced plant breeding published within the last 12 months include two seminal reports demonstrating the efficiency and flexibility of the CRISPR-Cas system in crop development, [one in corn](#) and [one in soybean](#), which appeared in the same issue of *Plant Physiology*. Another report, “[Robust Seed Systems, Emerging Technologies and Hybrid Crops for Africa](#),” appeared in *Global Food Security*.

“Our researchers are making exciting progress, and we welcome the opportunity to collaborate with others to further the science and expand the adoption of the technology across crops and geographies,” Gutterson said.

Pioneer is establishing a CRISPR-Cas advanced breeding platform to develop seed products for greater environmental resiliency, productivity and sustainability. Pioneer announced earlier this year its intentions to [commercialize waxy corn hybrids](#) as its first product developed with CRISPR-Cas, pending completion of field

trials and applicable regulatory reviews. The technology has applicability for all Pioneer crops of interest, including corn, soybeans, canola, wheat and rice.

DuPont Pioneer is the world's leading developer and supplier of advanced plant genetics, providing high-quality seeds to farmers in more than 90 countries. Pioneer provides agronomic support and services to help increase farmer productivity and profitability and strives to develop sustainable agricultural systems for people everywhere. Science with Service Delivering Success®.

DuPont (NYSE: DD) has been bringing world-class science and engineering to the global marketplace in the form of innovative products, materials, and services since 1802. The company believes that by collaborating with customers, governments, NGOs, and thought leaders, we can help find solutions to such global challenges as providing enough healthy food for people everywhere, decreasing dependence on fossil fuels, and protecting life and the environment. For additional information about DuPont and its commitment to inclusive innovation, please visit www.dupont.com.

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