

DROUGHTGARD® HYBRIDS CORN PRODUCTS RESPONSE TO OVERWATERING

TRIAL OVERVIEW

- Every year, farmers along with their seed representatives try to predict what corn products and traits will do best in various environments on dryland and irrigated fields.
- Corn products with DroughtGard® Hybrids technology can allow plants to adapt quickly and handle water stressed environments better than corn without the technology.
- However, there are years when rainfall is plentiful and corn plants may receive more water than needed.
- Can corn products with DroughtGard® Hybrids technology perform as well as corn products without the technology when too much water is received?

RESEARCH OBJECTIVE

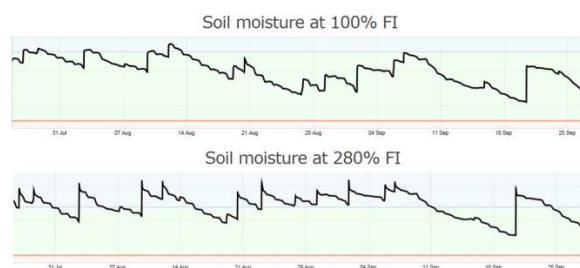
- Determine if there are any differences in performance of two corn products with DroughtGard Hybrids Technology compared to two similar products without the technology across irrigated overwatering treatments.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Gothenburg, NE	Hord Silt Loam	Wheat	Strip-Till	05/05/2016	10/25/2016	260	33,940

SITE NOTES:

- Two corn products (112 and 113 RM) with DroughtGard Hybrids Technology were compared to two similar products of the same relative maturity in a randomized split-plot design with irrigation treatment as the whole plot and corn product type (with or without DroughtGard Hybrids Technology) as the subplot with four replications.
- Irrigation treatments with total irrigation applied was as follows:
 - o 100% full irrigation (FI) – 5 inches
 - o 160% FI – 8.3 inches
 - o 220% FI – 11.6 inches
 - o 280% FI – 14.8 inches
- Seasonal rainfall amounts were as follows:
 - o April – 6.7 inches
 - o May – 7.7 inches
 - o June – 2.6 inches
 - o July – 3.6 inches
 - o August – 0.7 inches
 - o September – 0.6 inches
- Herbicide applications were applied to manage weeds, with no insecticide or fungicide applications.

UNDERSTANDING THE RESULTS



Blue line is a full soil profile, and red line indicates low soil moisture.

Figure 1. Soil moisture calculated from capacitance probes.

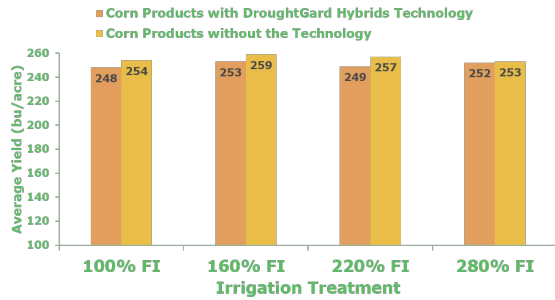


Figure 2. Corn products, with and without DroughtGard® Hybrids Technology, response to irrigation treatments and overwatering.



Corn with DroughtGard Hybrids Technology Corn without DroughtGard Hybrids Technology

Figure 3. Corn products, with and without DroughtGard® Hybrids Technology, growing under overwatering conditions at 280% FI.

- Soil moisture calculated from capacitance probes indicated that the 280% FI soil profile had an abundance of moisture over the growing season when compared to the 100% FI soil profile (Figure 1).
- There was no significant corn product by irrigation treatment interaction with or without DroughtGard Hybrids Technology (Figures 2 and 3).
- Results were similar to testing conducted in 2015 where no differences were observed between corn products with and without DroughtGard Hybrids technology under irrigation treatments of 100%, 120%, and 160% FI.¹

WHAT DOES THIS MEAN FOR YOUR FARM?

- The value of corn products with DroughtGard Hybrids Technology is their ability to yield across a wide range of environments.
- Farmers should have confidence that corn products with DroughtGard Hybrids Technology will perform as well as corn products without the trait when growing under conditions of excess water from irrigation and/or rainfall.

SOURCES

¹ Overwatering Corn Products with Genuity® DroughtGard® Hybrids Technology. Monsanto Learning Center at Gothenburg, NE 2015 Demonstration Report.

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