

EFFECTS OF PLANTING DEPTH ON CORN STAND ESTABLISHMENT AND YIELD

TRIAL OVERVIEW

- Accurate planting depth is directly related to even seed emergence, and is a critical aspect of creating the perfect environment for every seed.
- Across the Midwest, 1.75 to 2.25 inches is the typical recommendation for corn seeding depth. This ensures good seed-to-soil contact, places seeds into adequate moisture during the planting window, and ensures the establishment of a strong nodal root system.

RESEARCH OBJECTIVE

- To evaluate the impact of planting depth on corn establishment and grain yield.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Huxley, IA	Clay Loam	Soybean	Conventional	05/31/2017	10/19/2017	220	34,000

SITE NOTES:

- A 108 RM SmartStax[®] RIB Complete[®] corn blend product was used for the trial.
- Plots were planted with a 6-row John Deere[®] MaxEmerge[®] Plus planter fitted with Precision Planting[®] 20/20 SeedSense[®] and hydraulic DeltaForce[®] equipment.
- 165 lbs/acre of anhydrous ammonia was applied in the spring before planting.
- Treatments consisted of 3 different planting depths: 1 inch, 2 inches, and 3 inches, with 5 replications.
- Each treatment was 6-rows wide and 200-ft long in 30-inch row spacing.

UNDERSTANDING THE RESULTS



Figure 1. Corn seedlings depicting different mesocotyl lengths due to different planting depths. From left to right: 1 inch seeding, 2 inch seeding, 3 inch seeding.

- Yields were positively correlated with final harvest population, where the 2 inch seeding produced the most plants at harvest and the highest yields, and 3 inch seeding produced the lowest harvest population and the lowest yield.

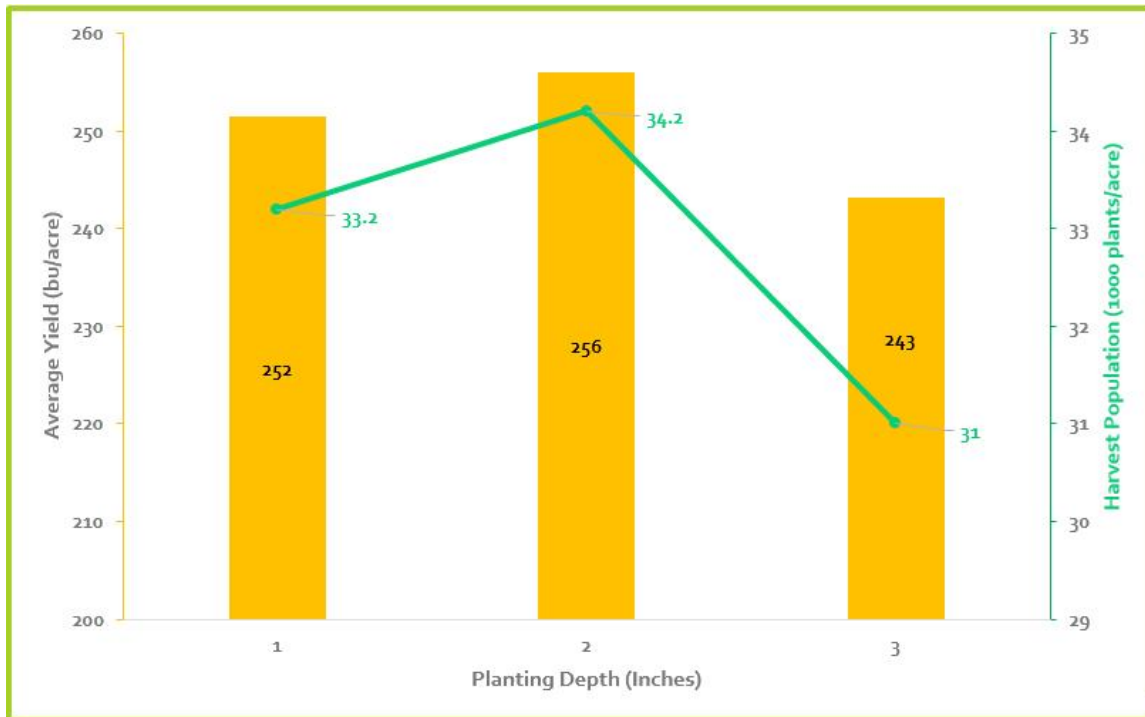


Figure 2. Average yield and harvest population across different planting depths.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Uniform germination and emergence are required to optimize yield potential.
- Achieving this depends on planting depth and the soil conditions (particularly moisture and temperature) during and after planting.
- In dry, light textured soils, planting deeper than 2 inches may be required to place seeds where moisture levels are consistent to ensure uniform imbibition and germination.
- In heavy textured soils, as at the site of this trial, seeding depth should not exceed 2 inches. While performance of the 1 inch seeding was comparable to the 2 inch seeding this season, this may not be the case in most years.
- In most cases, planting shallower than 1 inch is not recommended.

LEGAL STATEMENT

For additional agronomic information, please contact your local brand representative. Developed in partnership with Technology, Development & Agronomy by Monsanto.

Monsanto Company is a member of Excellence Through Stewardship® (ETS). Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. This product has been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

B.t. products may not yet be registered in all states. Check with your Monsanto representative for the registration status in your state. **IMPORTANT IRM INFORMATION: RIB Complete®** corn blend products do not require the planting of a structured refuge except in the Cotton-Growing Area where corn earworm is a significant pest. SmartStax® RIB Complete® corn blend is not allowed to be sold for planting in the Cotton-Growing Area. **See the IRM/Grower Guide for additional information. Always read and follow IRM requirements.**

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Roundup Ready technology contains genes that confer tolerance to glyphosate, an active ingredient in Roundup® brand agricultural herbicides. Agricultural herbicides containing glyphosate will kill crops that are not tolerant to glyphosate. RIB Complete®, Roundup Ready 2 Technology and Design®, Roundup Ready®, Roundup® and SmartStax® are trademarks of Monsanto Technology LLC. LibertyLink® and the Water Droplet Design® is a registered trademark of Bayer. Herculex® is a registered trademark of Dow AgroSciences LLC. Respect the Refuge and Corn Design® and Respect the Refuge® are registered trademarks of National Corn Growers Association. 20/20 SeedSense®, Deltaforce® and Precision Planting® are registered trademarks of Precision Planting, LLC. All other trademarks are the property of their respective owners. ©2017 Monsanto Company. 171130161323 113017TAM



Before opening a bag of seed, be sure to read, understand and accept the stewardship requirements, including applicable refuge requirements for insect resistance management, for the biotechnology traits expressed in the seed as set forth in the Monsanto Technology/Stewardship Agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with the most recent stewardship requirements.

