

EFFECTS OF NITROGEN MANAGEMENT PRACTICES ON CORN YIELD

TRIAL OVERVIEW

- Nitrogen (N) management in corn production continues to be a subject of much research. This, in part, is due to the complexity of the nitrogen cycle with regards to its availability to plants.
- From N application timing, to different sources and rates, to changing environmental conditions, the N practice that best optimizes corn productivity needs to be understood for sustainable operations.

RESEARCH OBJECTIVE

- To determine the response of two corn products to different N management practices.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Huxley, IA	Clay Loam	Soybean	Conventional	05/06/2017	10/17/2017	225 bu/acre	34,000 seeds/acre

SITE NOTES:

- A 105 RM and a 113 RM SmartStax[®] RIB Complete[®] Corn Blend were used for this trial.
- The trial was carried out in 30-inch row spacing, 6 rows/treatment with 2 replications.
- Nitrogen Treatments:
 - 160 lbs/acre PRE
 - 80 lbs/acre PRE + 80 lbs/acre at V5 with coulters
 - 80 lbs/acre PRE + 80 lbs/acre at V5 with 360 Y-Drop[®]
 - 80 lbs/acre PRE + 80 lbs/acre at VT with 360 Y-Drop[®]

UNDERSTANDING THE RESULTS

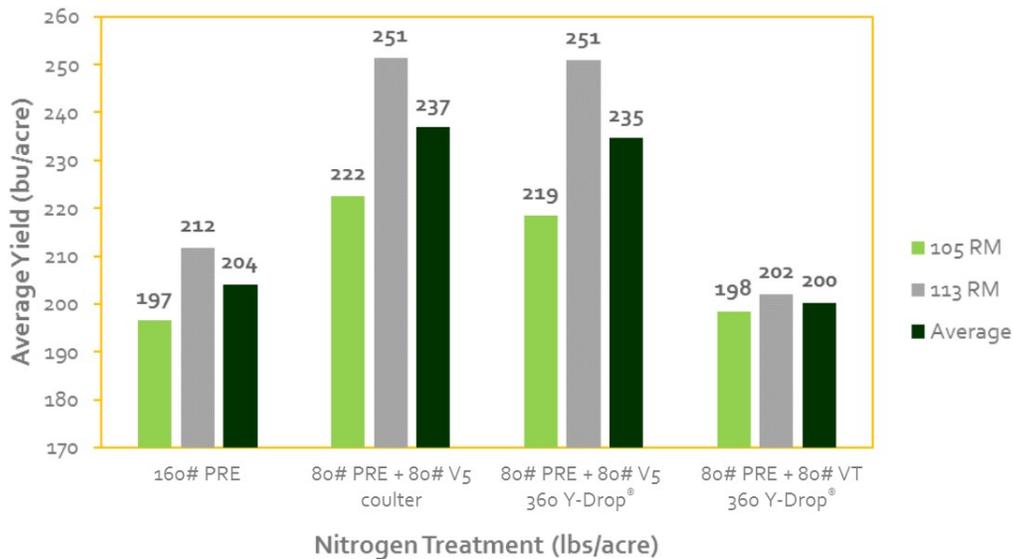


Figure 1. Effect of nitrogen management practice on 105 RM and 113 RM corn products.

- The two corn products responded differently to the nitrogen treatments.
- In all nitrogen treatments, the 113 RM product out-yielded the 105 RM product.
- For both products, the two V5 sidedress applications substantially out-yielded the other treatments.

- With the V5 sidedress applications, there was no difference between coulter and 360 Y-Drop® technologies in the 113 RM product. Application with coulters slightly out-yielded 360 Y-Drop® in the 105 RM product.
- In both corn products, VT sidedressing yielded much less than the V5 application.
- In all the nitrogen treatments, grain moisture content was about 1% lower in the 105 RM product.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Corn products respond differently to different N management systems.
- Every growing season is different which can have a significant impact on the performance of farm inputs. During the 2017 growing season, the research site at Huxley, IA experienced drought and high temperature conditions interspersed with a few 2 to 3 inch rainfalls, a scenario that significantly affects N dynamics in the soil.
- Growers are encouraged to perform small scale trials in their fields to understand how management practices impact economics and production.

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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.

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