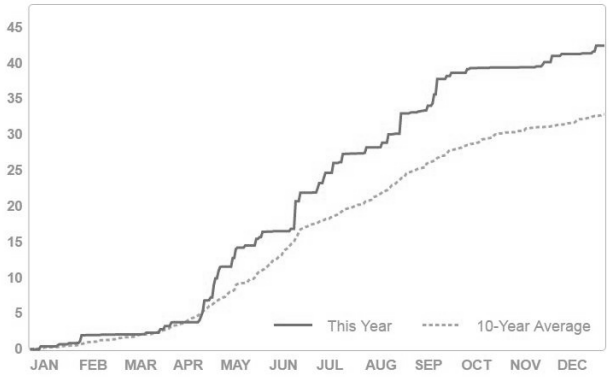
EXTENSION
On-Farm Research

Multi-Hybrid Planting for Corn Hybrid Placement

Study ID: 150053201601
County: Dodge
Soil Type: Moody silty clay loam; Fillmore silt loam; Nora silt loam; Crofton silt loam
Planting Date: 5/6/16
Harvest Date: 11/5/16
Population: 30,000
Row Spacing (in): 30
Reps: 9
Previous Crop: Soybean
Tillage: No-Till
Herbicides: ***Pre:*** 2 oz/ac Sharpen®, 22 oz/ac Roundup PowerMAX® on April 16 ***Post:*** 1.25 qt/ac Resicore®, 32 oz/ac Roundup PowerMAX on June 2
Seed Treatment: Acceleron®
Foliar Insecticides: None
Foliar Fungicides: None
Soil Tests:

Fertilizer: 135 lb N/ac as 32% UAN with coulter unit on April 9, 40 lbs N/ac as 32% UAN and ATS mix with coulter unit on June 11 at V6 growth stage
Irrigation: None
Rainfall (in): Gauge = 32.65" for April-Sept.



ID	Soil pH 1:1	OM LOI-%	P - Bray P1 (ppm)	K – AA (ppm)	Zn - DTPA
1 through 6	6.0-6.4	3.0-4.1	36-56	221-421	1.7-2.8

Introduction: Using a multi-hybrid planter, hybrids can ideally be placed to optimize production in stable management zones. This study compares two contrasting hybrids, one with a drought tolerant trait and one geared towards high production, placed in defined management zones *(Figure 1)*.

- The drought tolerant/**defensive hybrid**, Channel 211-00DGVT2PRIB, was placed in portions of the field that typically had lower water retention (dark grey).
- The **offensive hybrid**, Channel 209-51VT2PRIB, was placed in portions of the field that normally maintained adequate moisture across the growing season (light grey).
- Check strips of the opposing hybrid were placed in each zone as shown in Figure 1.

Management Zone Creation: Four years of yield data were used for clustering in Management Zone Analyst Version 1.0 (USDA ARS, University of Missouri, Columbia, MO).

Figure 1. Management zones for defensive hybrid (dark grey), and offensive hybrid (light grey) with check strips of the opposing hybrid.

Results: Within each zone, success of the offensive and defensive hybrid were evaluated by comparing the yield of the check strips to the yield in an adjacent strip of the hybrid assigned to that zone. Data were

analyzed using the GLIMMIX procedure in SAS 9.4 (SAS Institute Inc., Cary, NC). Mean separation was performed with Fisher's LSD.

Treatment	Channel 211 (defensive hybrid) **Yield** (bu/acre)†	Channel 209 (offensive hybrid) **Yield** (bu/acre)†	P-Value
Defensive Zone	231 A*	233 A	0.326
Offensive Zone	240 A	244 A	0.062

†Bushels per acre corrected to 15.5% moisture.
*Values with the same letter are not significantly different at a 95% confidence interval. Letters apply within zone.

Summary: There was no difference between hybrid yields in the defense or offensive zone, however the p-value for the offensive zone is approaching significance. Several factors affecting this field should be noted. A wind event on July 5th resulted in green snap and lodging of hybrids. The hybrids responded differently to this stress. Channel 211 was more susceptible to green snap at the timing of the wind event, and consequently was affected more than Channel 209. Additionally, this field site received above average rainfall. Channel 211 was selected for its drought tolerant traits; at this field site, water was not a limiting factor, so there was not a benefit from planting a drought tolerant hybrid. There was a price difference between the two hybrids used. Channel 211 cost $232/bag and Channel 209 cost $245/bag.

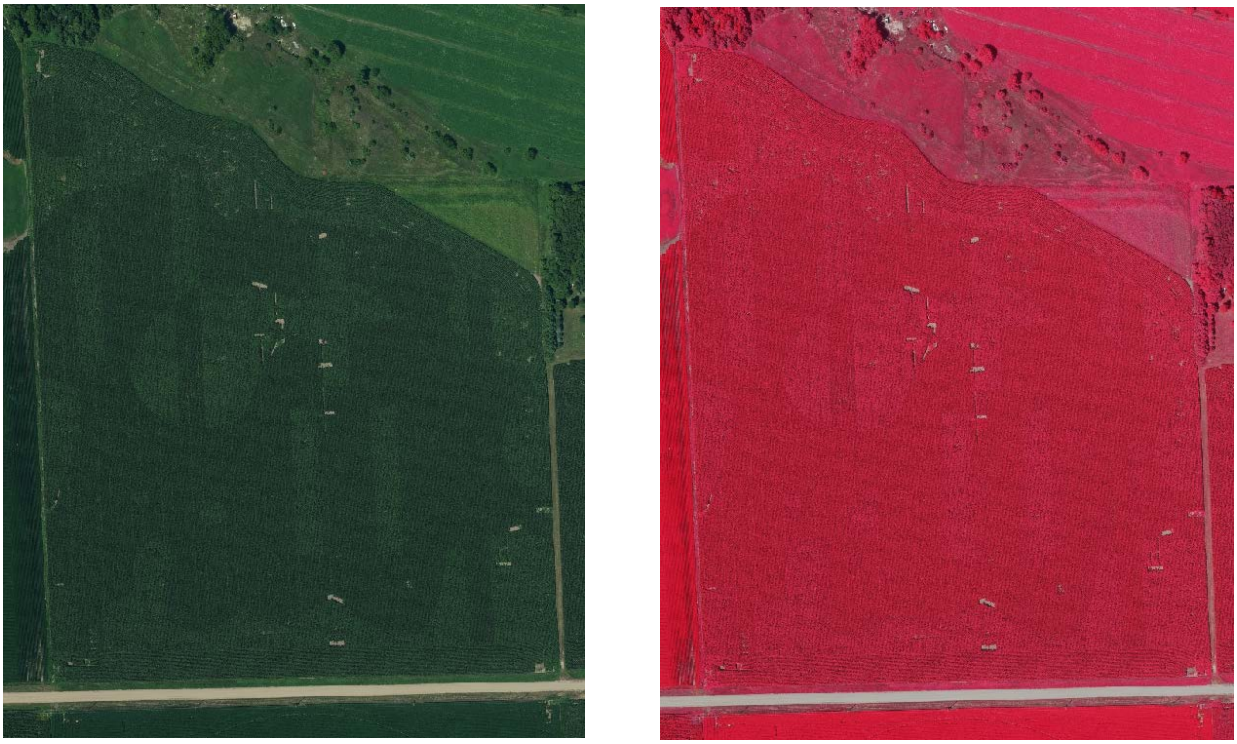


Figure 2. True color (left), and false color (right) imagery of the plot area.

Aerial imagery collected on July 31, 2016 shows the delineation of zones as well as check strips interspersed throughout. The green snap is evident in the northwest corner in Channel 211, with lesser impact on Channel 209.

Sponsored by: University of Nebraska Lincoln; Nebraska Corn Board

In Partnership with: Nebraska Soybean Checkoff; Nebraska Corn Growers Association; Nebraska Dry Bean Commission