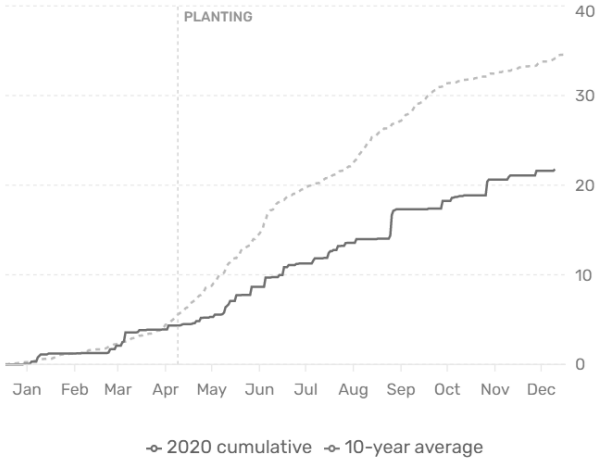
Effects of Ascend® SL on Dryland Corn Yield in Two Yield Zones

Study ID: 0029053202001
County: Dodge
Soil Type: Moody silty clay loam 0-2% slope; Moody silty clay loam 2-6% slopes
Planting Date: 4/23/20
Harvest Date: 10/19/20
Seeding Rate: 28,830
Row Spacing (in): 30
Hybrid: Hoegemeyer® 8028 AM™
Reps: 7
Previous Crop: Soybean
Tillage: No-Till
Herbicides: ***Pre:*** 2 qt/ac Bicep II Lite Magnum®, 0.17 qt/ac atrazine, 0.67 pt/ac 2,4-D LV6 ***Post:*** 32 oz/ac Roundup®, 3 oz/ac Explorer™
Seed Treatment: Fungicide
Foliar Insecticides: None
Foliar Fungicides: None
Fertilizer: 159 lb/ac N as NH_3, 5.7 gal/ac 10-34-0
Irrigation: None
Rainfall (in):



Introduction: This study evaluated Ascend® SL, a plant growth regulator developed to support cell division, leaf expansion, and root formation. Ascend® SL contains cytokinin, gibberellic acid, and indole-3-butyric acid. Ascend® SL was applied in-furrow with starter fertilizer. The field was divided into two productivity zones based on historical yields and electrical conductivity (EC) data (Figure 1). Zone 1 includes cooler, wetter low spots in the field with historically lower yields. Zone 2 includes the higher elevations in the field with historically higher yields. The producer was interested in determining if Ascend® SL would provide more benefit in the cooler, wetter spots in the field through increased root formation. Stand counts, moisture, yield, and net return were evaluated.

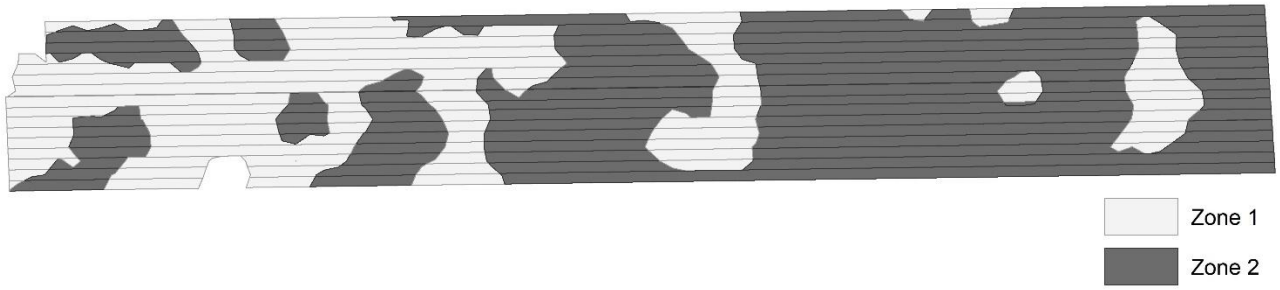


Figure 1. Map of two productivity zones. Zone 1 includes cooler, wetter low spots with lower historic yield. Zone 2 includes higher areas with historically higher yields.

Yield data were analyzed with a main-plot factor of productivity zone and sub-plot factor of treatment (Ascend® SL versus check). There was no interaction effect of zone and treatment. Yield differed by zone and treatment; therefore, zone and treatment were analyzed separately (Table 1, Figure 2).

Results:

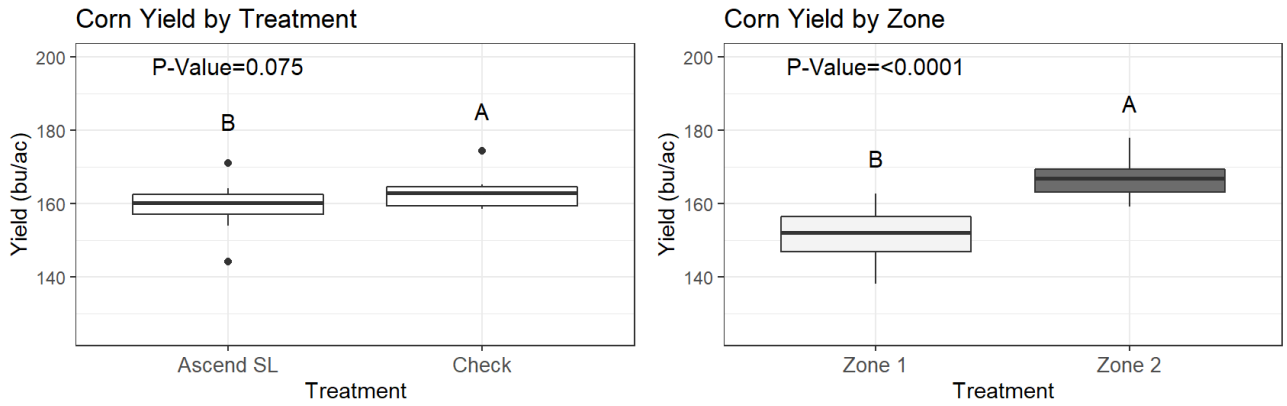


Figure 2. Corn yield by treatment and corn yield by management zone.

Table 1. Early season stand counts, moisture, yield, and marginal net return for check and Ascend® SL treatments averaged across productivity zone.

	Early Season Stand Count (plants/ac)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
Check	25,869 A*	12.5 A	163 A	573.53 A
6.3 oz/ac Ascend® SL	26,464 A	12.4 A	159 B	547.59 B
P-Value	0.215	0.318	0.075	0.009

*Values with the same letter are not significantly different at a 90% confidence level.
†Yield values are from cleaned yield monitor data. Bushels per acre adjusted to 15.5% moisture.
‡Marginal net return based on $3.51/bu corn and $11.32/ac Ascend SL.

Summary:

- There was no difference in stand count between the two treatments.
- The use of Ascend® SL reduced yield by 4 bu/ac and reduced profit by $25.94/ac compared to the check.
- Zone 2 had significantly higher yields than zone 1. Zone 2 averaged 167 bu/ac compared to 151 bu/ac for zone 1.

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