



## Impact of Envita™ at Three N Rates on Corn Yield

**Study ID:** 1116081202002

**County:** Hamilton

**Soil Type:** Hastings silt loam

**Planting Date:** 4/27/20

**Harvest Date:** 10/21/20

**Population:** 33,000

**Row Spacing (in):** 30

**Hybrid:** Allied Genetics® 112C17

**Reps:** 4

**Previous Crop:** Soybean

**Tillage:** No-Till

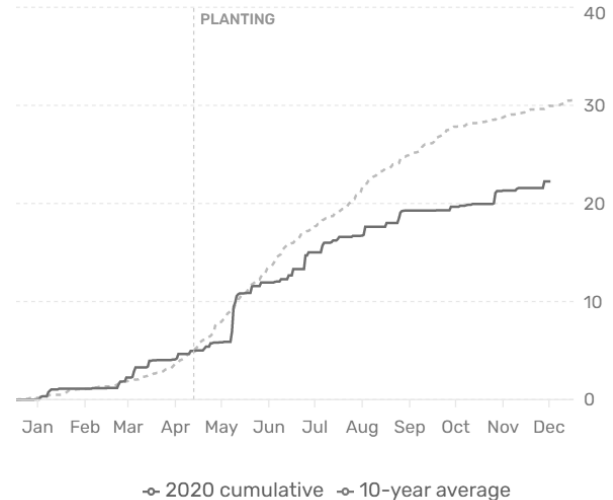
**Herbicides:** *Pre:* SureStart® II, Roundup®, and atrazine *Post:* Callisto® and atrazine

**Foliar Insecticides:** None

**Foliar Fungicides:** Delaro® at VT

**Irrigation:** Pivot, Total: 6"

**Rainfall (in):**



**Introduction:** Envita™ contains a nitrogen-fixing bacteria (*Gluconacetobacter diazotrophicus*) for use on corn. According to the Envita™ website, Envita™ can replace 27% of a corn plant's nitrogen needs or if applied with the recommended nitrogen fertility program, increase corn yield between 5-13%. In this study, Envita™ was applied as a seed treatment. Anhydrous ammonia was applied at three rates, 100 lb N/ac, 150 lb N/ac, and 200 lb N/ac. At planting, the fertilizer plots were split such that half the planter had Envita™ and half did not. Yield, moisture, and net return were evaluated.

### Results:

	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ (\$/ac)
100 lb/ac	16.6 A	235 B	786.23 AB
100 lb/ac + Envita	16.7 A	228 C	754.80 C
150 lb/ac	16.5 A	243 A	792.53 A
150 lb/ac + Envita	16.6 A	236 B	763.98 C
200 lb/ac	16.6 A	245 A	778.51 B
200 lb/ac + Envita	16.8 A	239 B	752.63 C
P-Value	0.317	<0.0001	<0.0001

\*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 corrected to 15.5% moisture.

‡Marginal net return based on \$3.51/bu corn, \$0.40/lb N, and \$5/ac Envita™.

### Summary:

- At each N rate, the use of Envita™ resulted in lower yields. Between the N rates tested, the 150 lb/ac rate was sufficient to maximize yield; applying 200 lb/ac did not result in additional yield over the 150 lb/ac rate.
- The use of Envita™ resulted in lower marginal net returns at each N rate evaluated. The 100 lb/ac and 150 lb/ac rates without Envita™ resulted in the greatest marginal net return.

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