

Late Season Foliar Nitrogen Application for Corn Yield

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Objective

To determine the effects of foliar nitrogen on corn grain yield and profit.

Background

Crop Year: 2016	Soil Type: Haskins loam, Rimer sand
County: Fulton	Tillage: conventional
Location: Wauseon, Ohio	Soil Test (grid avg): pH 6.3
Drainage: systematic, 50' laterals	P 43 ppm (Bray-p1)
Previous Crop: Soybeans	K 145 ppm
Variety: Pioneer 0604	O.M. 2.8%
Seeding rate: 33,000 seeds per acre	CEC 8.1 meq/100g
Plant Date: May 21, 2016	Starter Fertilizer: 70-20-90-5S-3B/acre
Harvest Date: October 31, 2016	Rainfall (May – August): 14.1"
Herbicide: Acuron	

Methods

Two treatments were replicated three times in an alternating block design. Plots were 24 rows wide (60 feet) by 2200 feet long. The trial was planted, sprayed and harvested with commercial farm equipment. Prior to the foliar nitrogen treatment, both treatments had received 200 lbs of total nitrogen. Treatment 1 received 2.5 gallons per acre of CoRoN foliar nitrogen at tassel (VT) using commercial aerial application equipment. This treatment netted an additional 7 lbs of nitrogen and .15 lb of boron per acre. The untreated check received no additional foliar nitrogen. Yields and moistures were measured using a calibrated yield monitor and shrunk to 15% moisture. Rainfall data was recorded by farmer at field level.

- Treatments: 1. Foliar CoRoN at VT – 2.5 gallon per acre (7 lbs N/acre)
2. Untreated check

Results

Table 1. Foliar N application in Corn at VT

Nitrogen Application and Source**	Yield (bu/ac)	System Application Cost (\$/ac)*	Return Minus Application Cost (\$/ac)
CoRoN - 2.5 gal/ac	211.5 a	\$18.55	\$722
Untreated check	208.0 a	-	\$728
LSD (P<.05, CV 2.6)	19.13		

*Based on \$12.30 aerial application, \$2.50/gal product cost and \$3.50/bu corn (Source: 2016 Ohio Farm Custom Rates)



Discussion

There was no statistically significant difference for yield between the foliar nitrogen treatment and the untreated check in this 2016 trial. A standard economic calculation shows that the untreated check was more profitable at \$728 per acre.

Further data in the former multi-year replications will add to the validity of these results.

Acknowledgement

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