Sidedress Nitrogen Effects on Corn

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Objective

To evaluate corn response to amount and time of application of nitrogen fertilizer.

Background

Cooperator:	Carlton Meyeer	Soil Test:	P 38 ppm, K 65 ppm, OM 2.3%
County:	Henry	Variety:	Wellman 1560
Soil Type:	Hoytville clay loam	Planting Date:	May 5, 2001
Tillage:	Fall Strip Till	Planting Rate:	32,000 seeds/A
Previous Crop:	Soybeans	Harvest Date:	Novemeber 5, 2001

Methods

The test area had NH_3 with N-serve applied at a rate of 180 lb N per acre on November 2, 2000, along with dry 20-48-85 N-P-K fertilizer applied by strip tillage. Three replications of additional spring sidedress nitrogen and no sidedress nitrogen were applied in 1,200-ft.-long strips in a randomized complete block experiment design. Each treatment strip was 12 rows wide. Side-dress fertilizer was 40 lbs/A of 28% liquid nitrogen applied at 18-inch-high corn. All other inputs were the same.

At corn maturity (black layer) corn stalk nitrate samples were taken by sampling 8-inch stalk segments located 6 inches above ground. Analysis was conducted by A&L Lab, Fort Wayne, Ind. The data shown here is the average of three replications. Yields were taken by yield monitor and were based on harvesting the center six rows along the full length of treatment strips. Yield data was adjusted to 15.5% moisture.

Results

Table 1. Corn Stalk Nitrate and Yield.

Treatment	Stalk Nitrate (ppm)	Yield (bu/A)
Sidedress N	1,566	128.2
No sidedress N	266	119.6
LSD (0.05)	NS	NS
F	8.1	4.1
CV	61.2	2.1

Summary and Notes

This trial resulted in no significant difference in stalk nitrate levels or corn yield by the addition of sidedress nitrogen. Although fall-applied nitrogen may be subject to more loss potential, in this one-year study, the corn yield was not affected by the amount and timing of nitrogen application.

Yield goal for this field is 175 bu/A. The high rate of nitrogen applied (240 lb/A) may have prevented detection of treatment differences.

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