

Use of N-Serv with Sidedress Nitrogen Applications in Corn

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Objective

To evaluate the effects that N-serv at sidedress may have on corn yields.

Background

Cooperator:	Tim Jackson	Fertilizer:	Fall applied and incorporated; lime = 3 tons/A;
County:	Hancock		P = variable rate to 30 ppm
Nearest Town:	Findlay	Planting Date:	May 20, 2002
Drainage:	Systematically tiled	Planting Rate:	30,000 seeds/A
Soil type:	Blount silt loam	Row Width:	30-inch
Tillage:	Fall chiseled and leveled	Herbicides:	2.1 qt/A Bicep; 1 lb./A Princep
Previous Crop:	Soybeans	Harvest Date:	October 15, 2002
Variety:	NK 58D1		
Soil test:	pH 6.0; P 28ppm; K 116ppm		

Methods

Experimental design was a randomized complete block with two treatments replicated four times. Treatments were 150 lb nitrogen/ A from anhydrous ammonia with or without N-serv applied at sidedress. The rate of one qt/ A of N-Serv was applied. Plots were 30 feet wide and 1,090 feet long. Grain weight was estimated by a weigh wagon. Grain samples were taken to a nearby elevator to estimate moisture with a commercial tester. Yield was adjusted to 15% moisture. Harvest population was estimated by counting plants from 17.4-foot sections of two center rows per plot.

Results

The average corn grain yield and other agronomic traits response to N-Serv addition are given in Table 1 (means followed by the same letter in a column are not statistically different).

Table 1. Average Corn Grain Yield and Other Agronomic Traits in Response to N-Serv Addition.

N-Serv Added	Grain Yield (bu/A)	Harvest Moisture (%)	Harvest Population (plants/A)
Yes	112.8	19.6 a	27,375
No	110.2	19.3 b	27,125
LSD (0.05)	NS	0.2	NS
F-test	<1	35.5	<1

Discussion and Summary

The only statistical difference for the study was for harvest moisture, and these values were close for practical purposes. Yield differences may not have been detected because of the abnormally hot and very dry summer. Normally, yields would be expected between 175 to 200 bu/ A. Root development may have been restricted from cool and wet early conditions followed by hot, dry conditions, which would have reduced nitrogen uptake.

Because of the abnormally dry weather, no conclusion from this study should be made about N-Serv added to sidedress anhydrous ammonia. The inability of the crop to uptake nitrogen, as well as other problems associated with drought, limited the amount of information obtained from this study. Further research would be required in a more normal year to see if N-Serv application affects grain yield and/ or moisture.

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