

# Starter Fertilizer Comparison for Corn

Dennis Baker, Agriculture and Natural Resources Extension Agent

## Objective

To compare corn yields using four different starter fertilizers including 6-24-24, urea-based 20-20-20, urea/AS 20-10-10, and Polyon®AG PCU 20-10-10.

## Background

Cooperator:	Darke County Farm	Soil Test:	pH 7.5, P 24 ppm,
County:	Darke		K 160 ppm
Nearest Town:	Greenville	Fertilizer:	Starter= see methods
Soil Types:	Miami silt loam		150 lbs/A N as 28%
	Eldean silt loam	Variety:	Pioneer 33Y18
Previous Crop:	Wheat	Planting Date:	April 29, 2000
Drainage:	Subsurface	Planting Rate:	28,500 seeds/A
Tillage:	Spring chisel	Row Width:	30 inches
		Harvest Date:	October 25, 2000

## Methods

Polygon®AG PCU is a polymer-coated fertilizer technology that has been used on golf courses, nurseries, and home lawns. The purpose of this experiment is to field test this slow-release nitrogen form to determine its potential agronomic and/or economic advantage. The field where these plots were planted has been in no-till most years.

There were four replications of four starter-fertilizer treatments in this test. Plots were planted and analyzed in a randomized complete block design. Individual plot sizes were 12 rows (30 ft.) wide and 960 feet long. The field was spring chiseled, then prepared for planting using a field cultivator with a cultipacker. Corn was planted with a Buffalo slot planter into adequate soil moisture and with adequate rainfall to germinate the seeds uniformly. All starter fertilizer materials being tested were applied as a starter fertilizer through the fertilizer box at approximately 180 pounds per acre.

## Results

**Table 1. Soybean Population and Yield.**

Treatment	Yield (bu/A)
Polygon® coated urea-based 20-10-10	156.2
Ammonium Sulfate + urea-based 20-10-10	156.7
Urea-based 20-10-10	157.2
6-24-24 fertilizer	154.3
Significance P = 0.05.	NS
F <1, CV = 7.7%	

## Summary

There were no significant differences in the yields among the four treatments. There was significant lodging in the plots; however, any influence from lodging effect on yields was likely distributed similarly across all treatments. This experiment was conducted in cooperation with Land O'Lakes Agricultural Services, which was conducting research for Pursell Technologies, Inc.

For additional information, contact:

Dennis Baker  
The Ohio State University Extension  
baker.5@osu.edu