

# Polymer Coated Fertilizer Comparisons

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## Objective

To compare the effects of polymer-coated urea (POLYON) fertilizer in a 2x2 placement row starter, Polyon placed directly in furrow, and a commonly used starter fertilizer on corn yields.

## Background

Cooperator:	Darke County Farm	Herbicides:	Roundup (1 pt/A), Fultime (3 qt/A)
Nearest Town:	Greenville	Fertilizer:	0-0-60 (100 lbs/A), broadcast
Soil type:	Patton, Brookston, Miami		18-46-0 (135 lbs/A), broadcast
Tillage:	Fall chisel		150 lbs/A nitrogen with herbicides
Previous Crop:	Wheat	Variety:	Pioneer 33G81
Row Width:	30 inches	Planting Date:	May 3, 1999
Soil Test:	pH 7.1, P 55 ppm, K 240 ppm	Harvest Date:	October 22, 1999

## Methods

The study was established as a randomized complete block design with four replications. The three treatments used to assess the effectiveness of Polyon, a polymer-coated urea were:

- Urea 24-12-12 which is a 24-12-12 blend of urea, monoammonium phosphate (MAP), and muriate of potash. This product applied at a rate of 40 lb N/ac in a 2x2 band with seeding (two inches below and to the side of the seed).
- Polyon PCU which is a 43.5% N polymer-coated urea. This product applied at a rate of 10 lb N/ac in furrow with seed.
- PCU 24-12-12 which is a 24-12-12 blend of Polyon PCU, MAP, and muriate of potash. This product applied at a rate of 40 lb N/ac in a 2x2 band with seeding.

The field where these plots were planted has been in no-till most years. The field was fall chiseled after 1998 wheat harvest, then prepared for planting this spring using a field cultivator with cultipacker. Corn was planted with a Buffalo slot planter into adequate soil moisture and with adequate rainfall for uniform germination. The 2x2 applications were made through the fertilizer box. The in-furrow treatment was made using the insecticide box.

## Results

Treatment	Harvest Population (plants/A)	Yield (bu/A)
Polyon coated urea 2x2	26,137	179.10 a
Uncoated urea 2x2	26,944	176.47 a
In-furrow Polyon coated urea	27,590	168.33 b

Treatment means followed by the same letter are not significantly different.

F = 14.23, cv = 1.71%. LSD (0.05) = 5.15.

## Summary and Notes

The polymer-coated urea used over the seed without starter fertilizer yielded significantly less than the other two treatments. Starter fertilizer with Polyon was not significantly different in yield than starter fertilizer without Polyon. The in-furrow treatment was significantly less than the other treatments probably due to there being 30 lb/A less nitrogen applied. This experiment was conducted in cooperation with Land O'Lakes Agricultural Services which was conducting research for Pursell Technologies, Inc., the producers of Polyon.

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