

## Summary of Starter Fertilizer Trials – 2014-2017

Jim Camberato, Bob Nielsen, Jason Lee, and Cody Hornaday



**Starter fertilizer treatments** were evaluated in experiments conducted at 6 Purdue farms. Thirteen trials in corn after corn (C/C-2014-2017) and 8 trials in corn after soybean (C/S-2016-2017). Treatments in C/S were no starter and 2x2 starter at 25 lb /ac of N and P<sub>2</sub>O<sub>5</sub>. In C/C treatments were in most cases:

- No starter
- Pop-up (PU) - 3 lb N/ac and 12 lb P<sub>2</sub>O<sub>5</sub>/ac as 10-34-0
- Normal 2x2 starter – 25 lb N and P<sub>2</sub>O<sub>5</sub>/ac as blend of 28% and 10-34-0
- Pop-up and normal 2x2 rate adjusted for N in PU
- Double 2x2 starter

---

### Early Plant Growth, Silking, and Grain Moisture

2x2 or pop-up fertilizer was beneficial to early plant growth and accelerated leaf appearance, resulting in earlier silking when compared to no fertilizer at planting. Effects appeared to be more consistent and pronounced in C/C than C/S.

In C/C earlier silking with 2x2 or pop-up resulted in drier grain at harvest – PU - 0.5%, 2x2 starter treatments - 1.3-1.9%. In C/S, 2x2 decreased moisture 0-1.5%, averaging 0.6%.

### Grain Yield

In C/C grain yield was unaffected by pop-up in comparison to no fertilizer at planting. 2x2 starter increased yield at 1 of 3 sites in 2014 (10 to 17 bu/acre), 3 of 8 sites in 2015 & 2016 (6 to 9 bu/acre), and 2 of 2 sites in 2017. Five of 8 responses occurred at the 3 no-tillage sites and only 1 of 5 at the strip till and chisel plow locations. In C/S grain yield was increased at 4 of 8 locations in 2016 and 2017 (4 to 12 bu/acre) – 1 no-till, 1 strip till and 2 chisel plow.

Average yield increases with 2x2 starter fertilizers averaged across responsive and non-responsive sites was about 5 bu/acre.

---

**Additional data from the 2018 growing season will be incorporated into my presentation.**

---

This work made possible by Purdue Ag. Centers, Indiana Corn Marketing Council, DuPont Pioneer, and A&L Great Lakes Laboratories. This work was supported by the USDA National Institute of Food and Agriculture, Hatch Project 1010713.

