

Summary of Starter Fertilizer Trials – 2014-2018

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Starter fertilizer treatments were evaluated in experiments conducted at 6 Purdue farms. Twenty-one trials in corn after corn (C/C-2014-2018) and 15 trials in corn after soybean (C/S-2016-2018) were conducted. Treatments in C/S were no starter and 2x2 starter at 25 lb /ac of N and P₂O₅. In C/C treatments were in most cases:

- No starter
- Pop-up (PU) - 3 lb N/ac and 12 lb P₂O₅/ac as 10-34-0
- Normal 2x2 starter – 25 lb N and P₂O₅/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 were more pronounced and consistent in C/C than C/S.

In C/C, earlier silking with 2x2 or pop-up resulted in drier grain at harvest – pop-up - 0.6%, 2x2 starter treatments - 1.2-1.7%. In C/S, 2x2 decreased moisture 0-1.5%, averaging 0.6%.

Grain Yield

In C/C grain yield was increased by pop-up in 1 of 21 comparisons to no fertilizer at planting. 2x2 starter increased yield at 7 of 21 sites. Six of 7 responsive sites were no-till. The average yield increase at responsive sites was 8 and 12 bu/acre for the low and high rates of N&P, respectively.

In C/S grain yield was increased at 7 of 15 locations. Increased yield average 7 bu/acre at the responsive sites. Responses occurred at chisel-plow, strip-till, and no-till locations.

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. Rev. 2/25/2019.

