

Starter Fertilizer Trials

A good argument could be made that there will never be a definitive answer to the question: "Do starter fertilizers pay?" The difficulty is in the complexity of the situation - there are multiple nutrients, environmental variables, producer goals, and product characteristics to consider (including price and convenience). Besides the yield effect, there is the intangible value of getting a crop off to a faster start to compete with weeds, establish roots, and cultivate earlier. PFI starter trials take place in this context. So remember, what works in one trial this year may not work for someone else, or even for the same farmer in a different year.

Ray and Marj Stonecypher,

Floyd, compared two kinds of liquid starters (10-34-0, and "food grade" 3-18-18) with no starter. (See Table 3.) The two starters were supplemented with some 0-0-60, and enough 28% N was banded at planting so all three treatments received 30 lbs N.

After all that careful adjusting, there was no difference in yield,

so the economic comparison reflects only input costs and the fact that the no-starter corn was about 2% drier at harvest.

Gestating sows or a point source solution?



Dick and Mary Jane Svoboda, Aurora, also did some careful adjusting in their starter fertilizer trial.

They compared: 1) 3 gallons of 3-18-18; 2) just enough 28% N (1 lb) to equal the nitrogen in the 3-18-18; and 3) no starter or nitrogen at planting. The starter treatment yielded about 12 bushels better than the other two treatments, but the difference was not statistically significant. However, in early July the difference among the three practices was striking. The corn that had received the starter was 2-3 feet taller than the N-only treatment or the check treatment.

The actual amount of nutrients in the Svobodas' starter was small (about 1+6+6). The question was apparently not "When did the crop need the most nutrients?" but "When did the crop need nutrients the most?" The check treatment and N-only corn was short, showed leaf symptoms of potassium deficiency, and had weak root systems that extended horizontally. The starter corn was taller, greener, and had strong root systems that were directed down. Down was where the only soil moisture was, until July. It seemed that the root systems of the small plants had just never "found" the soil moisture that was there in the deeper soil. The corn recovered amazingly in July and August. But the appearance on July 2 was that a little bit of starter, by helping root systems get established, had saved the crop. Dick Svoboda has seen less dramatic starter effects in previous trials, but he has never observed a significant yield difference.

Richard and Sharon Thompson, Boone, carried out three trials comparing forms of starter fertilizers (Table 3). In soybeans following corn, they compared: 1) suspension starter fertilizer; and 2) dry starter, both at 3+15+60; with 3) no starter of any kind. The yields were not significantly different. In corn following hay, the Thompsons compared: 1) suspension 50+15+45; 2) dry 50+15+45; 3) liquid 45+14+13; and 4) no starter. The dry starter yielded better than the no-starter control treatment. The liquid and suspension treatments' yields were intermediate between those two extremes. Judging solely on the basis of yield and input cost, the no-starter treatment was the most profitable in both these trials.

In the third trial, corn following soybeans yielded significantly better with either suspension or liquid starter than with no starter at all. The liquid starter was the least profitable practice, however, due to the cost. Richard Thompson is also working with equipment manufacturing representatives to develop a deeper banding implement for his planter. A deeper band of fertilizer might be more accessible to the crop in a dry spring like 1992.