

Nutrients or Response ?

(Winter 2003)

Maurie Vitosh Ph.D., Michigan State University, has stated and published to the effect “if soil phosphorus levels are medium to high **Starter Fertilizer** often doesn’t pay”.

I agree! Based on several hundred trials over the past 16 years in Ontario, starter fertilizers seldom pay. These replicated plots have also been grown in Michigan for the last five years. While the results are slightly different from Michigan and Ontario, the results over time are essentially the same! The results happen primarily because we are not using a **True Starter Fertilizer**. The term **starter fertilizer** normally refers to an application of nutrients in a band, near the row of the planted crop. Two inches over and two inches down from the row is certainly too far from the seed to be a **starter** application. It makes an excellent growing compound but does absolutely nothing to start the plant. In a warm spring, because of the excellent growing conditions, nutrients become available to the plant rapidly. Therefore the benefits of a starter are lessened.

If one uses a **True Starter Fertilizer**, often referred to as “Pop-Up” fertilizer, the product actually helps the plant come out of the ground and get off to a more vigorous “start”. The problem is many “Pop-Up” fertilizers don’t do a very good job of this either. For instance, in 63 trials, over an 8 year period of time the Competitive Premium Starters have only averaged 1.2 b.p.a. better than using nothing for a starter. At the same time they averaged 0.5 % moisture advantage over the no starter treatment. To be fair, there were some excellent competitive products, but the many poorly producing ones overshadowed these.

While other things are important in producing a corn crop, it is the amount of phosphorus in the corn plant by the **5th leaf stage** that sets the genetic yield potential. Figure it out, there is no way under less than ideal conditions, a corn plant can take in significant quantities of banded fertilizer by the 5th leaf stage. Under poor conditions the roots grow very slow, therefore it may take a significant amount of time just to reach the banded fertilizer. This still hasn’t addressed the need for converting that fertilizer to plant available compounds. Many fertilizer compounds, while they will be available over time, are not available in the cool, wet springs we often encounter in Michigan. These conversions happen over time, after the soils have warmed adequately, usually in the 60-degree range. How long did it take soils in Michigan to reach the 60-degree range in 1997 ? Forever!

So, what do you look for in a seed-placed starter (**True Starter Fertilizer**) ?

- Realize that not all seed-placed starters are the same, even if they carry the same analysis.
- There are good products and there are poor ones. Unfortunately, you have to figure that out for yourselves.
- Theories of what a seed-placed starter should be usually hold no weight when you put it in the field. Simply put, does it pay, or not!
- A good seed-placed starter **will** contain a very high degree of **ortho-phosphate**. This is the form plants can take into the root system. It does not have to go through a conversion process to be available to the plant.
- A good seed-placed starter should be very low in salt content. This is the reason 10-34-0 doesn’t make a very good seed placed starter. Also, the need to convert this compound means it usually will miss the 5th leaf window.
- A good seed-placed starter does not contain Urea. The University of Guelph, in Ontario, has found that high salt products can be safer than low salt products if the high salt products contain a different form of nitrogen, Aqua.
- Most seed-placed starters contain the Urea instead of the safer Aqua! This starts to sort the seed-placed starters very quickly.
- Ask your representative whether his product has Urea. If he doesn’t know the answer, you probably would be better off without his product anyway.

- A good seed-placed starter should be low in the contaminants aluminum, and Magnesium. While Magnesium is necessary for plant growth, contact with the seed is a very poor place for it. It can be toxic!
- Don't mistake micronutrients in a starter as contaminants.
- Finally, a good seed-placed starter should contain a proven MicroNutrient package for weather-induced shortages. The spring of 1997 was a great example.

The reason I stress a **proven** Micronutrient package, is nobody does the research **Alpine Plant Foods** does with Starters to begin with, let alone micronutrient additives. Sure, some do their research in small 20' blocks, or in side-by-side comparison trials, but none of them do their research in those areas, and then take the program a big step further, by running replicated plots over large areas for several years.

Many of them don't have a research program at all! They are just building a product to meet an analysis.

Does their product contain the safe Aqua, or the unsafe Urea ? High salt or Low ? Go for the low. Does their product have any research behind it, which proves its performance? Ask to see the results. If they have significant paper work, call some of the plot cooperators. Many have side-by-sides among farmers, but few have replicated results.

If this hasn't lost you; call: (Edited by B Moyer 8/20/2017 formally of Alpine Plant Foods)

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