

# Fertilizer Advizer

Maximizing return on your fertilizer dollar! ADVIZER NUMBER: NINE

## Increasing Soil Test Phosphorus with GoldStart® 6-24-6

by Dennis Zabel

In 2007 Nutra-Flo ran an experiment to see how much the soil test P was increased by the application of GoldStart 6-24-6. We wanted to see how much more P was available in the area immediately around the seed.

GoldStart was row-placed during planting with a “Y-splitter” attachment that applied the fertilizer to the v-slot made by the planter’s seed openers. The GoldStart literally coated the two sides of the v-slot.

A tool was made to mark the soil in such a way that we could carefully and consistently scoop out equal volumes of soil in the v-slot area for testing. See Figure 1 for a cross section of the soil test area. The dimensions of the samples were 1.5 inches wide x 2.5 inches deep x 24 inches long (24 inches of row length). We replicated the experiment 3 times using 4 and 8 gallon/acre rates of application plus a 0 rate check. The results are shown in Table 1.

Four gallons/acre of 6-24-6 increased the soil test P by 39 ppm. Eight gallon/acre increased it by 86 ppm. On the average, for each gallon of 6-24-6 applied, soil test P was increased by roughly 10 ppm in the small area around the seed furrow. Potassium was increased by a smaller amount. Interestingly, calcium and magnesium were also increased where fertilizer was applied even though the GoldStart did not contain Ca or Mg. The samples were pulled about 4 weeks after planting corn.

Our point in this experiment was to show that the concentration of P can be dramatically increased in the immediate area around the seed with a relatively small amount of GoldStart 6-24-6 banded in the seed furrow. The increase of P concentration near the developing root system is important for getting more of this nutrient into the crop when soil temperatures are cold to get crops off to a fast, healthy start. Make GoldStart starter fertilizer part of your crop fertility program. ■

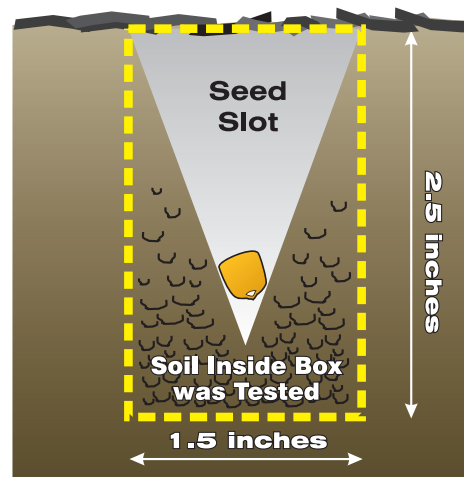


Figure 1. Cross section of the v-slot, seed and the area that was soil tested.

Table 1. Bray 1 (P1) Phosphorus Soil Test Results

0 gal/ac	4 gal/ac 6-24-6	8 gal/ac 6-24-6
133 ppm	172 ppm	219 ppm



Here’s a picture of Nutra-Flo’s first nurse truck delivering starter fertilizer to a grower at planting time. Notice the 50-gallon barrel saddle tanks on the tractor.

Nutra-Flo®  
**Pure Grade**™  
 Liquid Fertilizers

**100% Water Soluble**  
**Low Salt Index**  
**Chloride-Free**  
**Neutral pH**  
**Resists Corrosion**  
**Economical**  
**Low Rates Per Acre**

**Apply 2x2, In-Furrow or Foliar**

# Look at PureGrade® Benefits By Dennis Zabel

**P**ureGrade liquid fertilizers from Nutra-Flo offer more than just nutrients. They provide convenience to the grower.

One thing that experienced PureGrade users often take for granted is the lower viscosity of PureGrade starter fertilizers when applied in cold weather. A lower viscosity means the fertilizer flows more easily, thus requiring fewer rate adjustments as temperature changes throughout the day. In fact, those of us in the industry didn't think about it much, either, until recently, when growers began planting earlier in the spring when air temperatures are lower.

We usually associate the word 'viscosity' with lubricants. SAE 10 oil flows more easily than SAE 40 oil, for example. Viscosity, or resistance to flow, measurements can be used for any type of liquid. Even peanut butter has a certain viscosity to satisfy the most discriminating palate.

The unit of measurement for viscosity is centipoise (abbreviated cP or cps) and the measuring device is called a viscometer. Words like centipoise and viscometer are great conversation starters. Try it at the local coffee shop sometime.

I'm constantly reminded of fertilizer viscosity by new customers who are using PureGrade for the first time after having used other liquid fertilizers. They report on how much easier it is to maintain a constant rate of application when planting through temperature changes during the day.

Early planting is often associated with higher corn yields. Early planting demands starter fertilizers that flow easily through the lines. Fertilizer stored in a large tank doesn't change temperature much from one day to the next regardless of the air temperature changes

around it. It is when the fertilizer is squeezed through the small diameter lines to each row unit that we begin to see more resistance to flow under cold planting conditions. Fertilizer flowing through a microtube will rapidly match the outside air temperature, thus flow slower as air temperature drops. Pressure adjustments will be needed to keep the actual application



rate uniform. PureGrade fertilizers, with their resistance to viscosity changes, eliminate rate adjustments for all except the most extreme temperature change conditions.

I've concentrated on fertilizer viscosity in this article. I'd like to touch on a few other PureGrade benefits, as well.

**Virtually non-corrosive.** No matter how careful we are, there will always be opportunities for spillage on equipment. Usually it happens when a fertilizer line becomes pinched or entangled in the flexible parts of the row units. Little or no corrosion damage can be expected compared to generic fertilizers.

**Low salt index.** PureGrade products are made from raw materials that have low salt indexes. We manufacture the fertilizer from the ground up to be safe for seed placement and foliar application on many types of crops.

**Winter storage and shelf life.** While nothing lasts forever, PureGrade fertilizers have excellent storage characteristics. Cold temperatures in the winter are no problem.

**Higher yields.** And last, but not least, the reason a starter fertilizer is used in the first place; to supply available nutrients to the young crop. PureGrade fertilizer helps crops grow faster and more uniformly. Higher yields with a faster dry down are the results.

Make PureGrade liquid starter fertilizers part of your crop fertility program. Kits are available for any type of planter or drill for easy application. ■



**PureGrade fertilizers, with their resistance to viscosity changes, eliminate rate adjustments for all except the most extreme temperature change conditions.**

## Approximate Viscosity of Common Liquids

(in centipoise)

Water .....	1 cps
Anti-Freeze .....	15 cps
<b>GoldStart 9-18-9 .....</b>	<b>26 cps</b>
<b>10-34-0 .....</b>	<b>48 cps</b>
SAE 10 Motor Oil.....	50 cps
Corn Oil .....	65 cps
Maple Syrup.....	150 cps
Peanut Butter .....	250,000 cps

