Nutra-Flo® PureGrade™ Liquid Plant Food

Fertilizer Advizer

Maximizing return on you fertilizer dollar! ADVIZER NUMBER: THREE

Starter Fertilizer Essential for Best No-Till Crop Yields

By Dennis Zabel

No-till farming methods have spread rapidly in many areas of the country. In some areas no-till is the now the 'conventional' way to farm. It saves fuel, labor, soil, water and provides a friendly environment for earthworms and symbiotic mycorrhiza. In addition, no-till improves soil nutrient cycling and helps the soil become a carbon sink to reduce polluting greenhouse gas releases from the soil.

Maintaining high no-till crop yields demands making management changes when compared to tillage systems. Many experts recommend that starter fertilizer be part of the fertility program for best no-till results.

We mentioned some of the many advantages of no-till above, but there are disadvantages that directly impact fertility management that must be overcome. The two most important are:

- **Cooler soil temperatures** under the crop residue. No-till soils tend to be wetter in the spring, an advantage in dryland farming, but it slows soil warm up. Roots grow more slowly in cold soils and this reduces exploration for nutrients like phosphorus.
- **Proper positioning** of phosphorus and other nutrients for efficient crop use since we aren't using tillage to distribute fertilizer in the root zone.

Phosphorus doesn't move much from where it is placed. However, that can be an advantage when banding P in-furrow. Young roots will be growing into an area that has a high concentration of P. GoldStart 6-24-6 is made for banding into or close to the seed furrow.

Since P doesn't move, we like to see a portion (10-15 lbs P_2O_5) of the total application placed in-furrow where the first roots can gain access. Additional P needs can be applied in a deeper band or broadcasted. Banding is the preferred method of P application to reduce soil fixation and increase P concentration in the root area. Roots can take up surface applied broadcast P later in the growing season when the surface soil is moist.

University testing shows only a few pounds of phosphorus placed in the seed furrow can give excellent results.

Banding phosphorus in the seed furrow, or very near to it, is a better way for corn, grain sorghum, wheat and other crops to access nutrients in both no-till and tillage farming. In a no-till, fertilizer placement study at Kansas State University, the results were clear. Only a few pounds of phosphorus placed in the seed furrow gave excellent results.

The seed placed P was quickly absorbed into the root system because it was in the right place at the right time.

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GOLD Start®

9-18-9
6-24-6
5-15-15
3-18-18
10-10-10

Starter Fertilizer Essential for Best No-Till Crop Yields *(continued from page one)*

In the experiment in Table 1 only 8 pounds/acre of P_2O_5 was applied. This requires only 3 gallons per acre of GoldStart 6-24-6, for example, to be placed in-furrow. Most growers are applying 4-6 gallons per acre because soils vary across the field.

GoldStart 6-24-6 is easy to use and has a lower viscosity than many other liquid fertilizers. It pumps easily and accurately at lower temperatures during the spring planting rush.

TABLE 1: Phosphorus placement and yield.*

P Placement	Lbs/a P_2O_5	Yield bu/a
In seed furrow	8**	134
No P treatment	0	116

*Kansas State University.
**8 lbs/a of P_2O_5 requires only 3 gals/a of GoldStart 6-24-6

Available planter kits for application of liquid fertilizer make it easy to apply GoldStart 6-24-6 in-furrow.

GoldStart 6-24-6 and no-till farming make an excellent marriage. Each compliments the other. For quick uptake of nutrients as soon as the roots begin growing, band GoldStart 6-24-6 in or close to the seed furrow. ■

GoldStart fertilizers offer these advantages:

- **Crops grow faster.**
- **More uniform flowering.**
- **Earlier maturity.**
- **Virtually non-corrosive.**
- **Low viscosity to pump easier during cold temperatures.**
- **Easy to apply in-furrow.**
- **Excellent storability.**
- **Every drop has the same analysis for uniform plant response.**
- **Highe yields.**
- **More profit.**

GoldStart® vs. 10-34-0

Here are some advantages of using GoldStart Liquid Starter over 10-34-0

GoldStart Liquid Fertilizer

GoldStart is 80% orthophosphate, 20% polyphosphate. Orthophosphate is the form of phosphate that plants can absorb into the roots. Fertilizers with high amounts of orthophosphate are recommended when immediate availability to plants is desired such as for seed furrow placement and foliar application.

GoldStart fertilizer includes NP & K. The potassium used in GoldStart is low salt potassium hydroxide. It is becoming more widely accepted that starter and foliar fertilizers should contain potassium as well as N & P. Extremely dry or wet soils can cause a temporary potassium deficiency in young plants regardless of nutrient levels in the soil.

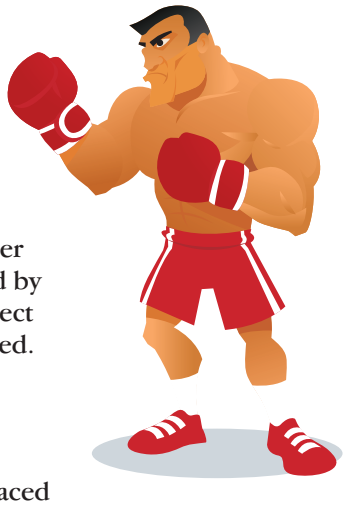
GoldStart fertilizers have lower salt indexes.
3-18-18 = 8.5 salt index (0.22)
6-24-6 = 11.5 (0.32)
9-18-9 = 16.7 (0.48)
(Number in parentheses is salt index per unit of plant nutrient.)

GoldStart is recommended for in-furrow placement. Because GoldStart has a lower salt index, it is recommended for seed-furrow placement on many crops for faster uptake of nutrients by the young root system. Crops get off to a faster start. Fertilizers with low salt indexes are safer for foliar application.

10-34-0

10-34-0 is 30% orthophosphate, 70% polyphosphate. The poly form of phosphate will convert to ortho with time and warm temperatures. Since time is needed for poly conversion these fertilizers are best used where immediate availability to the crop is not necessary.

10-34-0 does not contain potassium. While potassium can be added it requires extra labor and mixing equipment. The resulting mix may rapidly settle out and cause plugging problems if not immediately applied.



10-34-0 has a higher salt index of 20.0 (0.45). Sensitive crops have a higher potential of being damaged by 10-34-0 when placed in direct seed contact or foliar applied.

10-34-0 is usually not recommended for in-furrow placement. When starter fertilizer is placed further from the seed furrow higher amounts of fertilizer are needed because of lower efficiency.

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