

Jumpstart, Soygreen, and Torque

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I had a customer specifically ask for a newsletter with information on a few products that are on the market. I thought that this information might be of interest to some of our other customers as well. The information in this article is designed to be agronomic in nature answering questions such as, "How or why does this product work?" or "What is the science behind this product?"

Jumpstart

Jumpstart is a product designed to infect crop roots with the naturally occurring soil fungus *Penicillium bilaii*. This fungus has a symbiotic relationship with the crop where this fungus lives off the organic secretions of the roots while helping the roots by producing organic acids. These acids make phosphate more available for plant uptake. Jumpstart is not a phosphate substitute, but it is supposed to make what phosphorus is in the soil (whether it is fertilizer or soil phosphate) more available.

Phosphate tends to be the most available for plant uptake in the pH range between 5.5 and 7.3 pH. Phosphate in our Red River Valley soils with pH's over 7.3 tend to have calcium react and bind with the phosphate which makes it unavailable for plant uptake. The organic acids that Jumpstart produces acidify the soil around the root thereby solubilizing the calcium and making the phosphorus more available. Here are some things to keep in mind when trying to maximize the return on investment when using Jumpstart:

- 1) If there are surplus levels of Phosphate already available in the soil (check soil test), Jumpstart will have a lesser impact
- 2) Soils with pH higher than 7 will have a greater opportunity for a response
- 3) Soils with 14% or higher Organic Matter will be less likely to respond to Jumpstart. This is because when Organic Matter breaks down in the soil it releases similar acids to Jumpstart which also solubilizes the phosphate.
- 4) The higher the soil calcium content, the more response there should be to Jumpstart
- 5) If you have applied manure to a field in the last 18months, there will be less of a response to Jumpstart. This is because of the Organic Matter that has been added to the soil.

Other Jumpstart information:

- 1) Jumpstart is registered for use on Corn, Soybeans, Dry Beans, Sugarbeets, Wheat, Sunflower. In our area, the interest has been mainly emphasized on corn.
- 2) Jumpstart is a wettable powder that should be applied as a seed treatment to corn. If you are interested in trying this product, Novozymes will be at our location for a "Treating Day" this spring. Please let us know so that we can line up the treatment of your seed prior to planting season.

Torque

Torque is a product that contains LCO (Lipo-chitoooligosaccharide) Promoter Technology for corn. LCO is a molecule that occurs naturally that allows bacteria in the soil to communicate with the plant. Torque places LCO with the seed, so the communication process can start immediately. This LCO Promoter Technology enhances root and shoot growth which boosts early season growth. This product is not a fertilizer or a fertilizer supplement but a growth

promoter. The application process with torque is easy. It is an in-furrow at planting application that can be tankmixed with most starter fertilizers and insecticides. Using Torque with starter fertilizer has shown significant yield enhancement, especially in cold wet soils and other stress conditions.

Soygreen

Soygreen is a 6% Iron ortho,ortho EDDHA chelate, which means it is a chelated iron. The difference between this and other iron chelates is Soygreen uses the highest percentage of ortho-ortho iron EDDHA available on the market today. Because of this, it is the most available form of iron for plants to take up.

Soygreen was originally developed to be an aid for soybeans that are being raised in situations where iron chlorosis could be a problem. The best results for combating iron chlorosis with Soygreen are when it has been used in-furrow at planting time. Foliar applications have also had some response if rainfall occurs right after the application. However, foliar applications are less consistent than the in-furrow applications.

In the last two years, growers and universities have been experimenting with Soygreen on other crops as well. Sugarbeets is a crop where there have been some positive responses noted. NDSU has been experimenting by applying Soygreen as an in-furrow application to sugarbeets and have been finding starter responses from this product. Consult your local agronomist and your local ACSC field man for information regarding this product.

Soygreen is a dry water soluble powder and the use rate is usually between 1-3 lbs per acre mixed with water. Please consult an agronomist before mixing Soygreen with anything other than water.

When experimenting with new products on your farm, don't forget to leave a check strip so you can see the yield response.