

Nutrisorb FL, SL, SC, GR Summary

Nutrisorb is a technology derived from specific Poly-Hydroxy-Carboxylic-Acids (PHCA) (Carboxy Technology). These naturally occurring plant acids are extracted from three primary ingredients, Rice Hulls, Wheat, and Oats, through a distillation process.

This extraction process results in the base chemistry T.O.G.

T.O.G. can be best described as a plant extract containing a large variety of plant acids such as carboxylic acids, glutaric acids, amino acids, lactic acids etc... as well as many impurities.

The further refining and concentrating of T.O.G. results in two basic compounds.

1. Carboxylic Acid, Aliphatic Chain Type

2. Carboxylic Acid, Aromatic Type

The Poly-Hydroxy-Carboxylic-Acids (PHCA) are then extracted through further distillation from these two Carboxylic Acids

One of the major benefits is that PHCA is derived from naturally occurring plant compounds, when applied the plant recognizes these natural acids and readily draws them in.

1. Carboxylic Acid, Aliphatic Chain Type (Nutrisorb FL)

Nutrisorb (Foliar liquid) FL is the perfect additive to reinforce foliar applied fertilizers. Nutrisorb FL will create a complexed or chelated foliar applied nutrient and allow them to better penetrate the leaf or fruit surface. There are many benefits to using Nutrisorb FL over common chelating agents such as edta or citric acid and they are as follows: Nutrisorb FL is capable of complexing or chelating difficult nutrients like calcium, potash, magnesium and iron. Nutrisorb FL forms a much smaller molecule than traditional chelating agents which allows them to be more readily absorbed by the leaf or fruit surface. Also traditional

chelating agents attach to the nutrient molecules in three or more spots whereas Nutrisorb FL only attaches in two. Once inside the plant this allows the Nutrisorb FL to release the nutrient molecules much easier. Another benefit is that Nutrisorb FL, because it is a natural compound and because of its molecular structure, allows the plant to produce more pectin. When combined with calcium, this pectin forms calcium pectate, which develops stronger plant and fruit tissue. Lastly because it is derived from naturally occurring plant tissue, unlike synthetic chelating agents, it is allowed to move freely within the plant which gives it its systemic qualities. In summary it fortifies foliar applied nutrients and allows them to penetrate much faster, move freely within the plant and be released quickly where needed, inside the tissue.

Nutrisorb FL is also compatible with all fertilizer and most pesticides

2. Carboxylic Acid, Aromatic Type (Nutrisorb SL, Nutrisorb SC, Nutrisorb GR)

Nutrisorb (Soil Liquid) SL or (Soluble Crystal) SC or (Granular) GR are the perfect additive to soil applied liquid fertilizer, granular fertilizer and soluble fertilizer. The Nutrisorb SL and the Nutrisorb SC are both readily available products while the Nutrisorb GR works the same way only with a slower release.

All 3 forms of Nutrisorb will not lose any efficacy if applied on leaves and then washes off onto the ground by rain or irrigation. They can also be surface applied, incorporated onto the seed, soil applied next to it, or on transplant root systems as well.

This soil applied Nutrisorb (SL, SC, & GR) improves the plants capacity to absorb nutrients. It will improve absorption of Nitrogen, Phosphorous, and the most difficult to absorb cations such as potash, calcium, magnesium, iron, zinc, and copper. The soil applied Nutrisorb will help the plant better utilize the nutrients in 2 different ways. When applied the plant recognizes these natural acids and draws them in. Once inside they stimulate and fuel the Krebs Cycle which in turn stimulates new root growth and causes excretion of more root exudates which then in turn solubilizes and releases more nutrients for uptake into the plant. Also, because soil applied Nutrisorb is derived from naturally occurring plant tissue; it is allowed to move freely within the plant which gives the complexed or chelated nutrients systemic qualities.

In general, starter fertilizer blended with Nutrisorb will be better at producing more roots, faster. Maintenance fertilizer with Nutrisorb applied will create faster response, better color, and overall increased quality due to greater root activity than normal.

Micro nutrients blended with Nutrisorb will also generate more response, faster than regular micros.

High calcium and high potash fertilizer aimed at increasing plant and fruit quality will generate higher than expected results due to much higher levels of the nutrients in the plant and fruit tissue.

Benefits:

- **PHCA Carboxy Technology, being derived from naturally occurring carboxylic plant acids, significantly increases root exudates there for enhancing and increasing the plants ability to solubilize, absorb, and translocate both soil stored and applied nutrients which allows you to achieve Heather more responsive turf while applying less nutrients.**
- **PHCA Carboxy Technology increases root mass and plant vigor resulting in higher stand densities, healthier more aggressive turf and less weed pressures. This result is very apparent when applied to seedling turf**
- **PHCA Carboxy Technology is compatible with all fertilizers and most pesticides.**
- **Research has shown an increase in greens speed as a result of PHCA applications to mature bentgrass**
- **Research has shown Calcium to be more readily solubilized by the plant resulting in enhanced soil pH correction**
- **PHCA works as a complexing agent more so than just a chelating agent. Chelating agents wrap around and protect nutrients for more efficient uptake. Complexing agents also do this but because PHCA is derived from plant tissue the complexed nutrients are taken in and translocated through the plant.**
- **The granular forms of PHCA will increase root exudate, increase nutrient absorption and translocation. It is also a strong root stimulant.**
- **The liquid forms of PHCA increase the response by the plant to foliar applied nutrients**