



LIQUID FERTILIZER

AMENDMENTS

ACCELERATE™



FERTILIZER
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WHAT IS ACCELERATE

SAFETY & CROP RESPONSE

Crops often do not respond to micro-nutrients. The answer to consistent response is the use of Accelerate chelated formulations. The glucoheptonate and mannitol formulations make micro-nutrient application safer. Accelerate products are absorbed rapidly into the plant and responses are more consistent

CHELATION

The glucoheptonate chelates of Magnesium, Iron, Manganese and Mannitol Chelated Calcium have several advantages over other products. Sulfate and oxide micro-nutrients are not absorbed well into the plant. Micro-nutrient movement within the plant is limited. Glucoheptonate and mannitol chelates are protected from chemical reactions that tie up unchelated salts

Other chelates such as lignins are very large molecules. These are not absorbed into the plant and must give up their micro-nutrient to the leaf. The nutrient is subject to all the chemical reactions that limit unchelated salts

DIRECTED TRANSPORT

Much higher absorption efficiency is observed using leaf applied Accelerate glucoheptonate and mannitol chelates compared to soil application of any nutrient formulation. Applications of Accelerate chelates get large amounts of micro-nutrients into the crop

Accelerate glucoheptonate and mannitol chelates absorbed into the plant are rapidly translocated to areas of new leaf and root growth. Other formulations of micro-nutrients are not very mobile in plants. The use of Accelerate chelates results in effective supply of micro-nutrients to the most efficient growing areas of the plant. This directed transport results in very efficient use of glucoheptonate and mannitol chelated nutrients

BENEFITS AND APPLICATIONS

Accelerate chelated products are field proven under a diversity of crop growing conditions. They provide to the growers that use them the crop quality and improved yields needed to compete in today's marketplace

Consistent performance of Accelerate chelated products is a result of quality ingredients coupled with advanced formulation to make nutrients available to plants

The timing of nutrient applications and the formulation of the nutrients applied are important

Proper attention to these two factors, timing and formulation, make the difference between success and failure in producing quality plant material

Nutrient applications are most effective when made early in the growing season

NOTE: Metal Oxides are not water soluble and not plant available. Metal sulfates are subject to chemical reactions that change the metals to water insoluble salts that are not plant available. With Accelerate, chelates are chemically protected to remain plant available.

ACCELERATE CHELATES

ACCELERATE IRON

5% iron glucoheptonate

ACCELERATE MAGNESIUM

4% magnesium glucoheptonate

ACCELERATE MANGANESE

5% manganese glucoheptonate

ACCELERATE MANNITOL CHELATES

MANNITOL CALCIUM

10% calcium mannite

MANNITOL CAL/MAG

5.3% calcium & 2.6% magnesium

ACCELERATE ORNAMENTAL MIX PLUS*

Magnesium	2.00%
Manganese	1.00%
Zinc	0.50%
Iron	2.00%
Molybdenum	0.02%

*Glucoheptonates with plant hormones, amino acids & plant vitamins



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AVAILABILITY OF NUTRIENTS

If plants cannot get enough of a nutrient, it is because there is little nutrient there or the nutrient is not available to the plant

Common examples of poor availability are a result of poor sources of nutrients such as:

1. Poor supply of urea nitrogen because the organic matter in a medium breaks down too slowly to release enough soluble nitrogen for rapidly growing plants;
2. Poor supply of phosphorous in soils because most of the phosphorous is tied up (fixed) in various insoluble minerals and ties up other elements;
3. Poor availability of iron and other trace elements because of the extremely low solubility of many minerals or because of the removal from solution by organic compounds. Some examples of this are the removal of iron by phenols in barks and saw dust, and the removal of copper by some plants;
4. pH effects availability of nutrients. Availability can be improved by changing the pH of the growing medium. Otherwise, nutrient element in short supply must be supplied in a more soluble and available form.

Accelerate uses the most readily available chelating molecule to carry important micro-nutrients to the plant cells

NUTRIENTS

Plants cannot hunt for nutrients

They can only use those in the air, around their leaves or in the growing medium around their roots

It is important that growers know how to supply enough of the right kinds of nutrients and how to put them where plants can use them; use the correct amounts of nutrients in a readily available form

ANTAGONISMS

Having insufficient quantities of a nutrient in the soil can create deficiencies in the soil, however, having excesses of certain nutrients can also induce deficiencies of others within the plant as the chart below indicates

COMMON ANTAGONISMS IN CROPS

NUTRIENT IN EXCESS	INDUCED DEFICIENCY
N	K
K	N, Ca, Mg
Na	K, Ca, Mg
Ca	Mg
Mg	Ca
Ca	B
Fe	Mn
Mn	Fe

(High root media levels of nutrients in the left column may bring about deficiencies of the nutrients listed in the right column)

BEST MANAGEMENT PRACTICES

STARTER DRENCHES

Accelerate Jump-Start or Plant Marvel 12-45-10 encourages plant establishment and root system development

STEM STRENGTH / LEAF COLOR

Florikan Accelerate Cal-Mag improves stem strength and leaf color

FEED THE PLANT THE NUTRIENT IT NEEDS

Florikan Accelerate Single Element Chelates provide a readily available form of nutrients to correct deficiencies. A leaf analysis will help determine plant requirement

ACCELERATE CHELATES (SINGLE ELEMENTS)

- Accelerate 10% Calcium
- Accelerate 4% Magnesium
- Accelerate 5% Iron
- Accelerate 5% Manganese

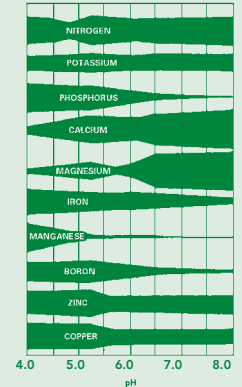
PREVENTATIVE FOLIAR SPRAY

Accelerate Ornamental Mix Plus, Florikan's preventative foliar spray is a crop safe supplement for growers and can be used every two to three weeks to help maintain foliage quality and color

pH AND AVAILABILITY OF PLANT NUTRIENTS

These charts show the relative availabilities of most plant nutrients at various pH's. The width of each horizontal bar indicates maximum availability at the widest point and diminishing availability as the bar narrows. Applying nutrients in the proper balance is essential for proper plant nutrition, but maintaining the pH of the soil mix so that these nutrients are available for uptake is just as crucial. From these charts it can be seen that an optimum pH in soil mixes is around 6.5 whereas the optimum for soilless mixes falls in the 5.0 to 5.5 range

AVAILABILITY IN SOILLESS MIXTURES



AVAILABILITY IN MINERAL SOILS

