



ecoAgra™ - Root Mass Enhancement

The size of a plant's root mass often determines the health and sustainability of the plant. Roots that penetrate deeper and wider into the ground have heightened access to nutrients and moisture contained in the soil. When ecoAgra™ is sprayed on a plant at the 3-5 leaf foliar stage, it increases the natural photosynthesis of the plant, thus shooting the roots deep and wide into the soil.



A larger root mass is one of the major benefits that **ecoAgra™** provides to plants.

The gladiola bulb on the left was sprayed once with **ecoAgra™**. Note the difference in root mass. This gives the plant better access to soil nutrients and protection in times of drought.

It begins with electro-magnetic action in the roots. When a seed germinates, it produces an embryonic root that grows into the soil. As the root grows, it produces hair and lateral roots. Within the root, the inner cells absorb water and nutrients from the root to the shoot and from the shoot to the root. This process is called "Cation Exchange."

ecoAgra™ excites and enlarges this "cation exchange capacity." Flow from the shoot to the root is achieved by loading sugars produced in the leaves into the phloem. The sugar-laden solution moves downward to the root.





Deeper Roots = Healthier Plants

The houseplant above was misted with **ecoAgra™** once a month from November 2010 to March 2011. The treatment provided increased size and color to the leaves, and dramatically impacted the root mass. When the plant treated with **ecoAgra™** was taken out of the pot (picture at right), the roots were wrapped around the bottom.

This increase in root mass provides plants with the ability to uptake more nutrients from the soil, and also puts them in longer contact with water as it drains through the soil. This can lower irrigation requirements, and help a plant in times of drought if it is not irrigated.



Increase Photosynthesis ... Naturally

Photosynthesis is the process by which plants utilize sunlight to produce sugar. Sugar forms the basis for starches, cellulose, waxes, carbohydrates, oils and protein that are the building blocks for plant growth. The leaf is crammed full of photosynthetic cells.

During photosynthesis, leaves use water and release oxygen. Plants and trees, after being sprayed with **ecoAgra™**, experience an accelerated level of photosynthesis. This is believed due to the tiny size of the particles, which allows them to penetrate the plant's leaves, improving photosynthesis. As a benefit, the plant grows more rapidly, is healthier, stronger, more productive and better able to resist disease. The leaf traps energy from sunlight and stores it as sugars and starch.



The plant on the right was sprayed once with **ecoAgra™**. As you can see, the plant itself has bigger roots.

A larger root mass offers multiple benefits, including increased access to nutrients in the soil. This helps the plant grow bigger and faster.

Increased size also keeps the root mass in contact with water as it is draining from the soil, which is very important if there is a drought or shortage of water.

To get these results it is important to treat the plant in the 3-5 leaf foliar stage so that it will get an early start. This should be the only treatment needed, unless the plant is showing signs of stress later in the year. **ecoAgra™** can be applied at any time during the growing season.

The pepper plant on the right was sprayed once with **ecoAgra™**. The size of the root mass in the treated plant is a good indication of the benefits of **ecoAgra™** as it relates to water conservation and the plant's ability to access nutrients from the soil.

