



GROWING HEALTHY TREES

Introduction

Trees are generally thought of as beautiful, but powerful gifts of nature that provide food, construction material, shade, beauty and shelters for many varieties of wild life. There is seemingly an infinite variety of trees from the tiny bonsai to numerous fruit and nut varieties to great redwoods and palm trees. They have a majestic strength that almost appears invulnerable to the vagaries of life around them. Yet we know that even the mightiest of trees can be brought down by the ravages of tiny insects, beetles and various diseases.



Redwood Tree in front of Huntington Beach CA City Hall

The key to the health of trees is the environment in which they are grown. Each tree has a geographic area, weather condition and soil type that is optimal for its growth. The environment provides the hydration, draining and nutrient balance that can encourage or discourage the growth of a particular tree variety. Trees generally have a strong root system that can reach out and collect water and nutrients for a fair distance and depth around them, but they cannot manufacture the right conditions if they do not exist in the near vicinity.

As people have grown to enjoy the character and nature of particular varieties of trees, it is becoming less uncommon to see tree varieties planted in areas outside their normal optimal growth locations. Thus we see redwoods growing in tropical areas, nut trees in the desert and palm trees near the mountains. If the environmental conditions do not become excessive, and with watchful monitoring and care, trees will often show an amazing versatility to survive, even in very sub-optimal conditions. The key to keeping any tree healthy is to provide it with the soil conditions that maximizes its ability to take in the proper amounts and kinds of water and nutrients, before an insect, disease or environmental condition can take hold of it and destroy it.

Technology

GreenFlash Technologies (GFT) provides a unique product, **TreePrime-1023™** that provides both the proper nutrient balance for most trees and the proper stimulation of the biological characteristics of the soil to encourage tree growth under most all conditions. It is a powerful additive during transplanting to eliminate shock and will virtually guarantee the tree will survive the planting; and it is a potent tool for maintaining the health and vitality of most trees in most environments.

GFT agricultural technology is unique in the industry as it combines three biochemical groups into single products:

Phenolic (aromatic) compounds: Produced from highly oxidized organic carbon. It is processed into complex mineral, biological and organic compounds.

Bio-cultures: Secondary metabolites are processed from algae and naturally occurring bacteria.

Nutritional products: These include macronutrients, micronutrients, enzymes, hormones, vitamins, organic acids and polysaccharides.

GFT product formulations differ significantly from fertilizers and other products on the market. Many ingredients in GFT formulations are not present in most commercial fertilizers. These include micro-formulated nutrients, organic acids, growth regulators, enzymes, algae, carbohydrates, surfactants and polymers. Although not needed in as large quantities as the primary nutrients (N-P-K, Nitrogen, Phosphorus and Potassium), these additional ingredients help the plant improve its vital functions so it can produce better yields of higher quality with less energy, requiring lower maintenance and fewer chemical additives.

GFT products aim toward establishing a balanced soil environment for the trees regardless of the natural environment. Balanced soils have a structure of 25% water, 25% air, 45% minerals and 5% organic material or humus. If these elements get out of balance, major problems occur. For example, too much water leads to black layer; too little air causes compacted soils and poor water penetration. A lack of humus leads to leaching and loss of nutrients. GFT soil products, such as **TreePrime-1023™** help to create and maintain a well balanced soil structure.

One ounce of healthy, balanced soil contains up to 14 billion bacteria, 560 million actinomycetes, and 28 million fungi. Most soils are less than 15% of optimum microorganism levels. Some tilled soil is totally lacking in one or more of these organisms. When microorganism numbers near the optimum level (60 to 80%) of the organic matter, soil is converted into humus which is the slow release reservoir of plant nutrients. At low microorganism levels (less than 20% of the organic matter), soils are virtually unusable.

Humus is the organic portion of soil formed from the partial decomposition of vegetable or animal matter in or on the soil. Humus formation in soils is essential because it acts as a sponge in holding moisture and bonding minerals and nutrients in the root zones of the plant. Soils rich in humus and organic matter buffer the plant from harmful salts and toxins which tend to accumulate in the soil after years of chemical applications. The aerobic biological systems that live in the soil breakdown and assimilate organic nutrients and create humus.

When fed with nutrients and water and a good supply of oxygen, indigenous microbial populations in the soil perform multiple functions critical to growth and survival such as nitrogen fixation, soil aggregation, oxygen and carbon dioxide release, mineral conversion for plant use, buffering of toxic conditions in the soil environment, rhizosphere protection to the root system, translocation of nutrients in plant tissue, etc.

Healthy soil contains high populations of microbes and a substantial supply of humus. Selected GFT products, such as **TreePrime-1023™** provide rich liquid humus and energy stimulation for this microbial population. This provides properly balanced

nutritional requirements of the micro-biological systems in the soil and in healthy plant and tree tissue.

Applications

TreePrime-1023™ has been used effectively in a number of applications, ranging from walnut trees in Northern California to redwoods, palm trees and others in Southern California to an apple tree in Colorado. In the case of the walnut trees, the last grove of walnut trees in Walnut Creek, California is located at the Boundary Oaks Golf Course. These 150 trees were in their final stages of life and were declared as dying (or effectively dead) and eventually needing total replacement by a local arborist hired by the city. With only one treatment (in 2003) of 'Tree-Saver' (an earlier version of **TreePrime-1023™**), the trees not only reversed their death spiral, but started producing walnuts at a level never previously achieved, and have continued to this date. The figure shows one of the trees following its "re-birth".



The redwood tree pictured on the first page is located in front of the city hall in Huntington Beach, California (a decidedly tropical area). In spring of 2006, the tree was covered with cankers over most of its bark areas, the leaves were mostly all brown, and the tree was considered to be in a stage of dying. Because of the prominent location of the tree and its having been gifted to the city 30 years earlier, its impending demise was causing severe consternation among the city parks and trees community. An arborist assigned to it had tried many products, and had even attached water lines to the trunk and branches, but without success. GFT was asked if we could help to save the tree. **TreePrime-1023™** was applied every three weeks for three treatments. Within two months of the first treatment, the canker was completely gone, and the tree was covered with new tree cones and new green, springy leaf growth. It continues to be strong and healthy today. We are now treating a collection of redwoods for the city of Huntington Beach that had been in varying stages of poor health. All of them are now also displaying the same characteristics of health and vitality as the one at city hall.



Similar results were obtained by treatment of a series of sickly palm trees and Kauris along the coast in Huntington Beach. The palm tree shown at the left was considered dead and was scheduled for removal. About three weeks after treatment the shoot shown at the top emerged, and the tree starting showing renewed signs of vitality.

A homeowner in Colorado Springs had an apple tree that had never borne any fruit during the five years of its life, even though the owner had tried several different plant & tree products. He then made a single application of **TreePrime-1023™** in the early fall of 2006. The first difference he observed was that the tree did not lose its leaves and go dormant at the first freeze as did all the others, but stayed green until early December. Then in the spring of 2007, he made a second TreePrime application. When the fruit appeared (Figure) in the summer, the tree quickly became covered with fruit and had to be thinned to avoid breaking of some of the lighter branches.





GreenFlash Technologies
Solutions Driven by Nature™

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TreePrime-1023™ 5.6-2-0.5



DESCRIPTION

TreePrime-1023™ is a nutrient-based fertilizer and soil conditioner designed for both newly-planted and established trees, shrubs and large plants.

GUARANTEED ANALYSIS

Total Nitrogen (N)	5.6%
• Ammoniacal Nitrogen	1.2%
• Urea Nitrogen	3.4%
• Nitrate Nitrogen	1.0%
Available Phosphate (P ₂ O ₅)	2.0%
Soluble Potash (K ₂ O)	0.5%

Derived from Urea, Ammonium Nitrate, Ammonium Sulfate, Phosphoric Acid, Potassium Carbonate
Information regarding the contents of metals in this product can be obtained by calling 866-GFT-1101.
The concentrations of arsenic, cadmium and lead do not exceed required California standards.

APPLICATION

SHAKE WELL BEFORE USING.

Trees, Shrubs and Plants: Apply 3 gallons mixed with 50 gallons of water evenly over each acre. Repeat in 21 days, and then apply every 3 – 4 months, or as required.

Individual Trees: See table below. Mix with 1 to 5 gallons of water per tree.

Trees	Branch or Root Diameter	Ounces per Tree	Initial Applications	Follow-up Apps (as required)
Very small	< 4 ft	1	Repeat in 21 days	Every 2 to 3 mo
Small	4 to 9 ft	2	Repeat in 21 days	Every 2 to 3 mo
Medium	10 – 15 ft	3	Repeat in 21 days	Every 2 to 3 mo
Large	15 -24 ft	4	Repeat in 21 days	Every 2 to 3 mo
Very Large	>24 ft	5	Repeat in 21 days	Every 2 to 3 mo
Special (e.g. very large redwood trees, etc.)		8 - 12	Repeat in 21 days	Every 2 to 3 mo

For trees showing signs of sickness or distress, double initial applications.

Long-term Maintenance: Apply 1.5 - 2 gallons per acre mixed with 50 gallons of water or 1 - 2 ounces per tree mixed with 1 – 5 gallons of water. Repeat 3 – 4 times per year, or as required.

As with all GFT products, please consult your GFT Representative for individualized treatments.

CAUTIONS

Keep out of reach of children.

Harmful if swallowed.

STORAGE & DISPOSAL

- * Keep product in original container.
- * Triple rinse when empty for recycling.

- * Do not transfer into food or drink containers.
- * Always dispose of container in accordance with local, state and/or federal regulations.

CONDITIONS OF SALE

The information contained in this document is believed to be accurate and reliable. Buyer and user acknowledge and assume all liability resulting from the use of this material. Follow directions carefully. Timing, conditions of storage, method of application, weather, crop condition and other factors are beyond the control of the seller. GreenFlash Technologies liability shall in all circumstances be limited to replacement of the product or a refund of the purchase price thereof.