Citrus Greening/Citrus Canker Disease



Citrus Greening

It's More Than Solving the Problem; It's Preventing it in the First Place

A Multi-Billion-Dollar Global Problem

Citrus greening disease is a destructive, bacterial infection that attacks the vascular system of citrus plants. Many Governments, Grower Associations, Universities & Others claim it is incurable and execute methods to curtail it.

It is Curable! Read How This Has Been Achieved!

A Solution to Citrus Greening, also referred to as Canker, has been available to citrus growers for 2 decades.

The following narrative describes in detail Proprietary Technology/Intellectual Property that has successfully applied, with proven results, its scientifically developed plant formulations that solve problems in the specialized branch of horticulture and agriculture called citriculture. The ingenuity and innovative components comprising this plant formulation was developed over four decades by Plant Scientist, William L. Ruth, CEO of Vita Products, Inc. holding BS & MS degrees in Agricultural Economics and Plant Science from Arizona State University.

From the National Academies of Science Journal (PNAS Proceedings of the National Academy of Sciences of the United States of America 2021 Vol.118 No.2 e2002547117): Some governments are taking action to seek out grass roots assistance on a number of issues similar to the one being addressed here. Where and to whom are they looking? ***Citizen Scientists***. William L. Ruth of Vita Products, Inc. and developer of Vita Agri/VPX Booster, the proven plant formulation that mitigates citrus greening disease, is one such Citizen Scientist.

Citrus Greening/Canker Issue Points That Lead to its Solution

- Attempting to solve citrus greening through trial after trial, year after year with extraordinary financial cost continues to prove unsuccessful;
- One does not go after the problem by slowing it down or stopping it; the first objective is to get the tree healthy first;
- Several current problem-solving methods may slow down the greening disease process. But invariably, the trees are still sick;
- Insects can play a vital role in any agricultural enterprise. In the application of Vita Agri/VPX Booster only the chewing insects die; this is not a pesticide;
- Once a tree is healthy, it takes care of its own problems (refer to next slide).
- **Only one product solves Citrus Greening Disease & Canker - Vita Agri VPX/Booster by discouraging any citrus symptoms and problems including the Asian Citrus Psyllid insect and the mottling/discoloring effects. What the Vita product does is make the tree healthy so its own immune system can fight this off these critical issues facing the citrus industry! Read the following:**

The **Vita Agri/VPX Booster** plant formulation was developed over several decades by Plant Scientist William L. Ruth and is based on the following premise:

focus on improving the health of a plant before any other strategy is executed.

How is this achieved?

Given a variety of environmental issues and conditions, trees in groves, orchards or elsewhere are unable to absorb their soil's nutrients. To solve this critical condition, plant formulation Vita Agri/VPX Booster is sprayed over the entire tree to the point of runoff. This strategic action process allows the nutrients in the soil to be completely absorbed by the tree, thereby giving health back to it so its natural ability to combat citrus greening/canker greening is restored as Mother Nature intended it.

Boldly stated, anchored in proven results, this method is the most cost-effective treatment of citrus greening/canker greening known to man.

Concerning Algae, Lethal Yellowing & Texas Phoenix Palm Decline (TPPD)

William L. Ruth is a Plant Scientist whose scientific research has yielded an innovative plant formulation that can mitigate Lethal Yellowing and Texas Phoenix Palm Decline (TPPD) that affect Palm Trees in addition to Citrus Greening Disease anywhere in the world.

Call him - 602-524-6008. He understands the negative impact citrus greening poses to orange groves and a nation's overall economy, thereby offering a solution to mitigate it.

Concerning Algae, Sargassum, Citrus Greening Disease, Lethal Yellowing & Texas Phoenix Palm Decline (TPPD)

These Innovative Plant Formulations:

- are biodegradable;
- are environmentally safe and harmless to the environment;
- are 99% naturally derived without copper;
- Copper sulfate is denser than ocean water; it settles on the ocean floor and dissolves without solving the issue;
- can eliminate both the growth and **resulting odor** from the dying sargassum and other algae in both fresh water and salt-water environments;

These Plant Formulations are USDA National Organic Compliant

- These formulations are not applied in a manner that inoculates a tree; a time-consuming and expensive application. Instead, they are simply sprayed onto each tree safely and harmlessly to keep each tree healthy resulting in its ability to withstand the infestation brought on by TPPD and Citrus Greening.
- No company, university or individual other than Plant Scientist, William L. Ruth through four decades of research and successful application, can produce what these formulations can do where other attempts have failed and will always fail. ***Just look at the US' deteriorating orange groves and the Great Atlantic Sargassum Belt!***

A Word About Patents v. Trade Secrets

With the understanding that a company's intellectual property is its number one asset, William L. Ruth of Vita Product's, Inc. decided at the outset of the creation of his plant and lotion formulations to treat them as trade secrets, thereby foregoing the process of having them patented. Mr. Ruth utilizes a non-disclosure agreement as an added measure to protect his company's trade secrets. The rationale behind this decision includes a number of factors:

- A trade secret enjoys protection under US law;
- The associated costs are significantly lower than that of securing a patent;
- Patents require companies to disclose inventive properties publicly. Their protection is also limited in time, usually lasting no more than 20 years, while trade secrets remain protected indefinitely. William L. Ruth has chosen to follow the path of Coco-Cola, which does not hold a patent on its secret cola-recipe. Consequently, Ruth has chosen to protect his secrets rather than disclose them in a patent application.
- Vita's formulations derive independent economic value by remaining unknown;
- Vita's trade secrets allow the benefit of an indefinite protection period, especially through its long-term interests;
- As long as these trade secrets are kept from public knowledge, Vita Products, Inc. continues to benefit from them without any reporting requirements, including any that require procedural compliance with a government agency;

While we can agree that trade secrets are unique and inventive enough to warrant patent protection, that would require disclosing the information publicly and spending considerable sums obtaining patent protection, i.e., filing and annuity fees, not to mention the time-consuming efforts involving searches and examination. William Ruth and his company Vita Products, Inc. chose the trade secret path as it offers a better return on investment and fits Vita's overall risk strategy.

Given William Ruth's position here as stated, we envision your organization to be in its own unique position to file a patent for these formulations providing extremely effective protection for the generally accepted 20-year period, thereby giving it the exclusive right to make, sell, and gain a monopoly on them independently. Your company can have exclusive use of these formulations and command the market for 20 years. It can build its own brand recognition and market leadership during that period to remain a top industry player even after the patent expires.

A Word About Clinical Trials

- As a research-based company, Vita Products, Inc.'s clinical trials designed expressly for development and evaluation of plant formulations applied to Floriculture, Horticulture, Christmas Trees & Wreaths, and Algae have been conducted with the public and commercial entities – randomly - whose results are evaluated and published on the Vita Products, Inc. website (www.vitaproducts.com), not with test tubes or control groups.
- It must be noted here that these trials have been conducted in a manner where their efficacy is born out through testimonies, photographs and videos – true to life applications in the field driven by William Ruth's research and scientific efforts in plant science.

Can there be any better proof of their worth and value to the individuals, companies and organizations using them? So, it stands with Vita Planta Pro™ and Vita Agri Plus™.

Trials/Testimonies in Other Industries Served by Vita Products:

Research (vitaproducts.com) Testimonies (vitaproducts.com)

CONSUMER USE (vitaproducts.com)

Vita Products, Inc - Floriculture, Florist, Gardener, Cut Flowers

Orange Grove Project
April – July 2006



A trial with
proven results
that cures.

Vita Products, Inc. was asked to conduct a proof of concept test application of Vita Pro Certified and Vita Booster to an affected Orange Grove in Fort Myers Citrus Area (Lakeland, FL)

The reason for the test was to determine if the proper application of the Vita product could prevent, delay or contain the effects of Canker,

Greening disease, limit the effect of bacteria spread by insect vectors and help limit the effects of physical trunk/limb damages.

The Fort Myers area Citrus Groves were extensively exposed to the effects of four hurricanes during the 2005 hurricane season. The results of those storms were a highly stressed Citrus trees that were very susceptible to various diseases in this weakened condition. The initial protocol was to address two prevalent issues. Canker, and Greening disease.

The agreed to proposal consisted of three sets of three test trees groups focused on one area of concern located at least 1,000 feet apart from each other. One test group was to concentrate on the Canker disease, one group for Greening disease, and one group of healthy non afflicted trees as a comparison standard.* The equipment for this test was also delineated.

This Citrus Grove has a typical soil composition of a highly alkaline sandy mix. Each tree received water via a Grove wide soaker system and nozzle assembly. The water source came from the high water table in the Florida soils.

April 24 2006

Spray was set-up for Monday the 24th of April. Conditions were dry, temperature low 80's. I arrived at 8:00am to meet with Lee Jones and staff. I introduced the Vita product and discussed how the spray was to be conducted. I was notified by Mr. Jones that the required equipment needs would not be satisfied. The only spray device available was a thirty gallon sprayer mounted on a Gator utility truck that sprayed fluid at a rate of 1.5 to 2.5 gallons per minute. The protocol would not be met since there would be no Greening disease trees available. Dedicated labor was not a priority.

Clearly this did not meet the agreed to protocol. The decision to continue the test was in balance because the protocol was compromised and set up for failure.

I proceeded with the test, with adjustments. The test was now adjusted to spray individual trees, two trees for Canker, one tree for Blight, one "Buckhorn" tree for growth rate, and one Hurricane damaged tree for re-growth. The randomness of tree selection was also out of my control; trees were selected by Mr. Jones. At this point the intent of the spray was to test the concept of the protocol and results. Information to be gained will serve as a foundation for future funded research. The first actual spray was to be conducted by Field Supervisor, Pancho and myself. The spray protocol called for one spray a week for eight weeks.

The spray was conducted using the 30 gallon spray tank for foliar and systemic applications. This equipment configuration resulted in a long slow application. Thirty gallons of Florida Booster on the canopy and thirty gallons of Pro Certified on the trunk out to the drip-line was the established protocol.

The Canker tree was selected and showed little to moderate effects of canker pitting on leaves. No fruit was visible on the selected trees at this time. The trunk of these trees were fully covered with green moss(?)



The Buckhorn stump was bare of leaves and branches and stood about two feet tall. Clean trunk.



The blight affected tree had sparse of leaf growth compared to unaffected trees.



The hurricane damaged tree was pushed over by the hurricane from the previous season. The tree endured some root damage and was secured to the vertical by three guide ropes. Some base feed roots were exposed to the surface.

All trees were watered daily with a drip system and a spray system located at the base of each tree.After four hours of spray application the first Vita application was complete. If proper equipment was used as requested, this spray could have been completed in one hour with full coverage.



May 01 2006

Phone call update from Poncho, on the status of the second spray and results indicated observed fuller greening of leaves on all trees in the test with foliage. No reported impressions about the Buckhorn tree.

May 08 2006

I conducted the third scheduled spray on the 8th of May. The temperature at the start of the spray (11 :00 am) was 78 degrees rising to 82 degrees by completion. Dry, clear, calm day.

Observations on proceeding slides:



The Canker tree has a nice full canopy with new growth of branches and leaves. Fruit blossoms at this point have all matured into actual fruit. Trunk is clean without any moss on sprayed side.

The Hurricane damaged tree showed extensive new growth. Fruit is ripe but hasn't been harvested from this tree yet.



Mr. Lee Jones was concerned about the amount of time used for this spray, due to the equipment dedicated to this test. A new pump was installed on this spray rig to improve spray volume.

May 15 2006

Poncho and Mr. Lee Jones of GFC gave no update this week. Four sprays applications have been scheduled by this time.



The Blight afflicted tree showed extensive new growth greater than non-sprayed blight tree in the same vicinity. This tree was showing the development of new fruit transitioning from blossoms to fruit.

May22 2006

GFC to conduct fifth spray by this time. I visited the grove on this date for an observation. Canker tree showing extensive healthy fruit development and new growth on the canopy. Trunk remains clean of green fungi.



Buckhorn leaves appear to have brown discolorization in the surface and cupping of leaves, minimal insect activity compared to other buckhorns that are totally covered with insect activity. The tree leaves appear to be a little inconsistent with previous healthy progress. One branch has turned brown. Blossoms continue to bud.



The Buckhorn stump has a large growth of leaves and blossoms. Thirty percent of leaves are five inches long, four inches wide. Numerous blossoms, no visible insects.



On the Left: Canker lesions on trunk of tree originally over entire trunk.



On the right: After spray application of **Vita Agri VPX/Booster** on right side of trunk, Canker lesions are dead.

Hurricane damaged tree has had the fruit removed and continue to display new growth.



Blight tree continue to show new growth with a small number of fruit but more that non-sprayed trees in the vicinity.







All three of the four test groups show continued expected results on track with previous improvement. Buckhorn tree results may indicate lack of spray protocol.



May 29 2006

Sixth spray application conducted by GFC. No communications with Lee Jones. Mr. Jones didn't return phone calls for status update of progress on the field test.

June 7th 2006

In conversation with Poncho, we decided to continue the spray protocol for two more applications because we had plenty of Vita spray remaining. Seventh spray today.

June 12th 2006

Eighth and final spray.

June 19th through June 30th 2006

Mr. Jones says that there was no appreciable change to the spray trees and disclosed that the trees would be cut down to the buckhorn height as a part of the Canker response program.

July 3rd 2006

I flew down to the test grove to look at the test trees and document the results. The Canker test tree showed extensive new growth and a healthy crop of grapefruit that didn't show the signs of Canker on the fruit. Trees all around this test tree had extensive canker outbreak on fruit and leaves. The trunk remained clear of mold and fungus, the leaves appeared fully green and without the distortion of Canker markings, the fruit appeared to be free of canker spotting.







Photos continued on next slide



Unsprayed tree showing greening disease



Sprayed tree with Vita AgriVPX Booster on the same day







It is very unfortunate that Mr. Jones continued with his clear cut protocol and cut our test tree down to the trunk.

Review:

This was a test to see what sort of results that can be gained by the application of the Vita products in a set spray protocol. The initially planned protocol was not followed so we continued with the spray to determine a proof of concept.

In conclusion:

The Vita sprayed trees all displayed increased new growth of the branch and leave canopies. The Buckhorn tree example showed a quicker initial growth then by week four tended to lag behind the three other buckhorns in the observed area. By the eighth week, this test Buckhorn showed that it had caught up with the other Buckhorns in the photos and had a full healthy canopy structure without the insect infestation that was present on the other Buckhorns.

The Canker tree produced a full new growth canopy that was spot free of Canker spotting with fruit to match. I must emphasize that the test tree displayed this trend on all NEW GROWTH. Any existing leaves with spotting prior to the initial spray application remained unchanged. The advantage of the timing of this spray was that new fruit growth (blossoms) were just beginning, so the fruit that was growing on the tree had a chance to be influenced by the Vita treatment. The results of this treatment were Canker spot free fruit skin surfaces.

It is very unfortunate that the Field Manager did not recognize these results and continued with cutting the test tree down to the trunk as part of there old protocol.

Mr. Ruth is retiring and has publicly announced that his plant formulations IP is available for exclusive purchase by an individual, corporate, or governmental entity, foreign or domestic.

The purchaser will acquire:

- The technology associated with each plant formulation specific to each industry;
- The services of the Contract Packager;
- Vita Products logos, labeling and package designs;
- Vita's trade secrets;
- Demonstratable profit margins ranging from 80%-98%;
- Formulation ownership to market it worldwide*;
- Inputs that do not change;
- Vita's Christmas Tree & Wreath preservatives and Cut Flowers formulation that are the only organic formulations in the world that are **USDA Organic Program Compliant.**

*Formulation Ownership to Market Worldwide

- Spray the tree with Vita Agri VPX/Booster; foliar feed is the most efficient method to employ treatment as opposed to injection;
- One gallon of Vita Agri VPX/Booster concentrate makes 2000 gallons of usable product;
- Vita Agri VPX/Booster is a concentrate;
- One gallon of Vita Agri VPX/Booster produces 2000 useable gallons from which to apply a spray application;
- Charge $1 per useable gallon to the market;
- The purchaser/user purchases one gallon of Vita Agri VPX/Booster for $2000 to acquire 2000 useable gallons;
- Spraying each tree using 15 gallons per tree amounts to only the cost-effective $15 per tree for total coverage;
- Vita Agri VPX/Booster is **USDA National Organic Program Compliant;**
- This proven method will help eliminate the future potential of GMO citrus trees;
- The importance of securing the services of a **Certified Sprayer** protects the integrity of this product;
- Potentially, whomever owns this citrus formulation that is proven to mitigate citrus greening/canker greening will dominate the citrus industry and its growers globally as they will have to use it to survive.

Go to the Vita Landscape System document to read how Vita Agri VPX/Booster has been applied as a comprehensive method that maximizes plant health in an historic project.
The link to the document is here:
5a9a27_9dd0de0777904965af704bbd4adfa343.pdf

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WILLIAM L. RUTH – President and CEO

The Developer of Vita Products, Inc. was raised in Yuma, AZ and has an extensive background in the processing of fresh produce. He received his Bachelor of Science Degree in Agricultural Economics and Plant Science from Arizona State University in 1971 and his Masters of Science Degree in Agricultural Economics and Plant Science in 1973 (With Highest Distinction). His Master's Thesis was written on the science of Hydroponics.

He served as a Graduate Assistant at A.S.U. in the following courses: Range Management, Plant Genetics, Weeds & Weed Control, Soil Conservation and Lawns & Greens.

As a four-time recipient of the Western Growers Association Academic Scholarship, Mr. Ruth
was elected to the Fraternity of Alpha Zeta, a National Honorary Agricultural Academic Fraternity in April 1972.

Mr. Ruth's experience in academic teaching, research and scholarship includes employment in Arizona State University's Experimental Farm from 1965 to 1969 in the Plant Science Department and lead instructor of Hydroponics at Phoenix College.

William L. Ruth Bio cont'd:

He was Manager of ABI Hydroponics in Scottsdale, Arizona and was subsequently employed by Hydroculture, Inc. in 1971 as a Researcher in the Research & Development Department.

His expertise includes plant tissue culture, water, and fruit analysis where his primary responsibility was Problem Solving for Hydroponic Growers. He assisted in the development of a hydroponic growing unit and researched poultry cannibalism, i.e., chuckers, pheasants, and chickens, adding certain proteins to their diet to research their cause and effect. Additional research included Hydroponic Shrimp and Insect Control in Hydroponic Greenhouses using various varieties of birds. In March 1974, he published an article on Hydroponics in the American Vegetable Grower Magazine.

As an educator in the public-school system for thirteen years, Mr. Ruth taught Science, Mathematics, and Economics. In 1987, he established a retail Plant Nursery and Floral Shop and was a Landscape and Irrigation Contractor for five years, landscaping Indian Gardens in the Grand Canyon in 1989. The development of his Vita Planta, Vita Christmas Tree & Wreath Preservative, and Vita Flora Cut Flower Preservative formulations began in 1988 with extensive research and trials on flowers, plant nursery stock and landscaping.

Vita Products, Inc. in Industry Publications

"Nursery News Magazine" published an article on the Vita Planta formulation in1995 comparing stressed plants before and after the use of Vita Planta.

"The American Christmas Tree Journal", April, 1999, pg. 48 displayed a picture of a Christmas Tree cut the last week of November, 1998 that was hydrated with Vita Christmas Tree & Wreath Preservative. The tree would not combust on February 6, 1999 in Chandler, AZ.

His "Vita Flora Cut Flower Preservative" has been written about in two books: Fresh Flowers: Identifying, Selecting and Arranging by Charles Marden Fitch, Abbeville Press,1st edition, pgs. 33 & 34, and Flowers Are Almost Forever; The Care and Handling of Cut Flowers by Libbey Oliver, Brandylane Publishing. The former describes how Mr. Ruth's Vita Flora extended the life of Gerbera cut flowers seven days longer than three competitive products; the latter explains the advantages of using his Vita Flora Cut Flower Preservative on cut flowers. (As a footnote in her book, Ms. Oliver describes how effective Mr. Ruth's Vita Derma Lotion is in protecting hands from irritants and contact dermatitis).

Industry Publications cont'd:

The August, 2001, Vol. 16 No 8, issue of "Nursery News Magazine" features a front-page article written by Vahan Dinihanian, President of Dinihanian Floral Products, Beaverton, OR entitled, "Make Holiday Feelings Last; Preserve Your Christmas Greens". In this article, Mr. Dinihanian writes, ***"William Ruth is the only known scientist*** to develop a preservative that will allow the exchange of oxygen and liquids between the plant material it is applied to and the ambient air. The formulation through contact systemic action actually feeds the still living cut material with minerals and plant extracts that the plant material needs to continue living after it is cut. Plant material treated with Vita Christmas Tree & Wreath Preservative has been known to remain alive and green for up to seven months. These tests have extended through ten years of trials with the same consistent results." (***He is the only known scientist*** to develop plant formulations that solve existing problems in farming, horticulture, and algae. Learn more: VITA PRODUCTS, INC)

The preceding article was also published in the Greens Issue of "Flower News" on October 13, 2001. Dr. Fran Gare, Nutrition Consultant for CBS, was to publish her latest book on healthy anti-aging nutrition that would have included growing food with Vita Planta. Sadly, her assistant passed away and she was unable to finish the book.

This Proprietary Technology Behind These Formulations Will Be Sold Only Once. The Purchaser will own this Intellectual Property Exclusively.

But, while profit potential is evident, the intent of this presentation is to present the case for its contribution to solving these persistent diseases and environmental nuisances globally.