



SAVE YOUR PALMS *from* LETHAL BRONZING

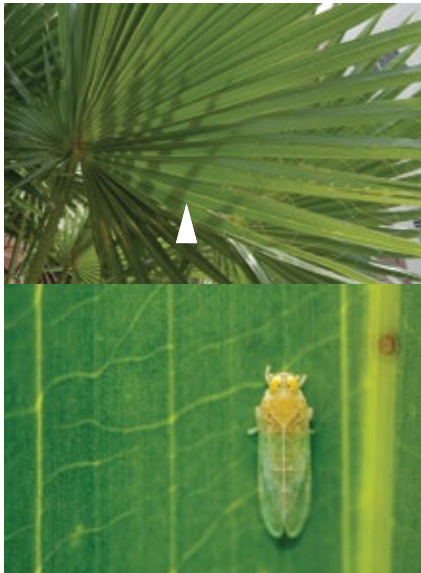
Lethal Bronzing is caused by a phytoplasma, which is a bacteria without a cell wall. Phytoplasmas are plant-infecting bacterial pathogens that lack a cell wall and remain confined to the phloem tissues. It is an untreatable and fatal disease; once a palm is infected, there is no cure.

The LBD phytoplasma has been found in 20 different species of palm, and since the introduction of LBD to the state of Florida, it has been isolated from palms in 36 counties.



PALMS SUBJECT TO LBD		
Buccaneer Palm	Coconut Palm	Pindo Palm
Cabbage Palm	Coyal Palm	Pygmy Date Palm
Canary Island Date Palm	Dwarf Sugar Palm	Queen Palm
Carpentaria Palm	Edible Date Palm	San Jose Hesper Palm
Chinese Fan Palm	Fiji Fan Palm	Sylvester Palm
Chinese Windmill Palm	Mexican Palmetto	Yagua Palm
Christmas Palm	Needle Palm	

Dr. Brian Bahder, lead researcher for Lethal Bronzing Disease at UF Institute of Food and Agricultural Sciences, stated, “We have come a long way in understanding the epidemiology of this disease, and now that we know what insect is responsible for spreading it, we can start to control it. The current management of the disease relies on tree removal and antibiotics, neither of which is sustainable.” Studies are now being done managing the insect to control the disease.



THE AMERICAN PALM CIXIID *HAPLAXIUS CRUDUS*

Lethal bronzing is spread solely by The American palm cixiid, *Haplaxius crudus*, a common insect widespread in Florida, acting as vectors, transmitting the causative agent to other palms. They inject a bacteria into the phloem, the vascular tissue that moves carbohydrates from the leaves to the plant's roots, creating a deadly effect like the clogging of arteries in a human.

This species is of great economic concern due to its ability to transmit the lethal yellowing phytoplasma (LYD) and is also the vector of lethal bronzing phytoplasma (LBD), both of which are fatal diseases of palms.

PALM INJECTIONS POWERFUL & EFFECTIVE

LMP offers a comprehensive injection program to provide your palms with the antibiotics, nutrients, insect, and fungus control all at once. This is an all purpose approach designed to help protect palms from the most common insect, disease, and nutrient deficiencies.



FUNGICIDE NUTRITION INSECTICIDE ANTIBIOTIC

Arbor-OTC

A water soluble systemic antibiotic for the treatment of bacterial infections of palms. Effective for: Ash Yellows, Bacterial Leaf Scorch, Fire Blight, Leaf Spot, Lethal Yellows, Phytoplasma Disease, and Lethal Bronzing.

IMA-jet

IMIDACLOPRID | GROUP 4A INSECTICIDE

Systemic Insecticide for Micro-Infusion. Pests controlled aphids, whiteflies, soft scales, adelgids, gall forming wasps, leafhoppers, lace bugs, mealy bugs, psyllids, serpentine leafminers, sawflies, thrips, and

PALM-jet

Formulated to alleviate iron and manganese deficiencies in palms. The liquid formulation is specifically designed for rapid distribution through the vascular system of palms and trees. NPK Grade 1-0-3

Propizol®

Control Systemic Injectable Fungicide. Effective for: Oak Wilt, Rust, Sycamore, Anthracnose, Conifer Blights, and Powdery Mildew.



Trunk injection involves using a special injection tool which places and seals the insect control directly into the trunk where it is quickly taken up by the vascular system and distributed throughout the tree. The Arborjet trunk injection system uses the Arborplug, a one way port with a self sealing, surgical septum that prevents product from leaking back out of the injection site.