

NEWS RELEASE • AGRICULTURE

Mineral Oxychloride to Rescue the Florida Citrus Market

Since 2019, huanglongbing (“citrus greening”) has destroyed more than 75% of Florida’s citrus crop. A new mineral oxychloride treatment is bringing infected groves back to marketable fruit.



Since 2019, more than 75% of Florida’s citrus crop (oranges 75%, grapefruit 85%) has been lost to an infectious bacterium called huanglongbing (HLB), commonly known as “citrus greening.” Leaves of newly affected trees develop a blotchy mottle and the fruit loses value. Until now, there has been no commercially available solution beyond removing trees and re-planting seasons later.

From 2015 to today, a Florida field program has tested a treatment for citrus greening — recently registered with the EPA (2020) and USDA Organic-certified (2021). The program began in central Florida by treating a single tree with a new oxidant developed from a mineral oxychloride formulation: spraying the leaves and watering the roots with a solution generating an ORP greater than +700 mV, and removing all infected leaves.

2 acres

NOW UNDER TRIAL (4TH YEAR)

+700 mV

TREATMENT SOLUTION ORP

99.99%

BACTERIA & VIRUSES AFFECTED

After a week, growers observed a new “flush” on the infected tree. The test expanded to 20 trees; after 60 days of irrigating and spraying with a +700 mV mineral oxychloride solution, all of the trees began to develop marketable fruit. The trial is now in its fourth year and has expanded to two acres — one acre control, one acre treated.

Mineral oxychloride technology is a source of oxygen energy effective against 99.99% of bacteria and viruses. Its oxidative energy — related to reactive oxygen species (ROS) — can be measured in millivolts with an ORP meter. The chemistry generates a high concentration of hydroxyl radical ions and other oxygen species that kill microorganisms in less than 10 seconds. A study by a university post-harvest research program concurred that raising ORP to +700 mV inactivated *E. coli*, *Salmonella*, and *Listeria* in under 10 seconds.

Study after study agrees that a low-cost method of raising the oxidative energy of water lowers the impact of microorganisms in agriculture. Raising the ORP level inactivates microorganisms (measured as colony-forming units, CFU). Just as important, mineral oxychloride offers a measurable residual — trackable by ORP — that can be used as a method to ensure proper control.

OXIDATION POTENTIAL OF COMMON OXIDANTS		
REAGENT	FORMULA	VOLTS
Fluorine	F ₂	3.06
Mineral Oxychloride	M _x O _y Cl _t	2.8–2.9
Hydroxyl Radical	OH•	2.80
Oxygen Ion	O ⁻	2.42
Ozone	O ₃	2.07
Hydrogen Peroxide	H ₂ O ₂	1.78
Perhydroxyl Radical	HO ₂	1.70
Chlorine Dioxide	ClO ₂	1.57
Hypochlorous Acid	HOCl	1.49
Chlorine Gas	Cl ₂	1.36
Oxygen (Molecule)	O ₂	1.23
Hypochlorite Ion	OCl ⁻	0.94
Sodium Hypochlorite	NaOCl	0.94
Hydroperoxide Anion	HO ₂ ⁻	-0.88
Superoxide Radical	O ₂ ⁻	-2.40

THE TAKEAWAY

A commercially available, EPA-registered and USDA Organic-certified treatment that restores citrus-grove productivity — with a measurable ORP residual for quality control.

For more about studies using mineral oxychloride technology, contact deepak@dz-worldwide.com or visit www.dz-worldwide.com.