



# HORTICULTURE AND GREENHOUSE

## Application of CHLORITAB In Horticulture & Green House

Horticultural operations are facing increasing pressure to solve sanitation issues related to water treatment. Some of the pressure is external originating from government regulations and consumer preferences. Most of the pressure, however, is internal and includes better disease management, integrating capture of irrigation runoff with recycling opportunities, elimination of biofilm and algae control.

The list of available water treatment technologies is a short one. When the unusual demands of horticultural production and post-production practices are considered, the list of technologies that offers effective solutions becomes even shorter.

- Chlorination.
- Ultraviolet light.
- Oozone.
- Copper and peroxide.

This are the most common modes of treatments preferred by the nursery growers.

### Biofilm, Sanitation's Epicenter

Biofilm is a living complex of organic and inorganic components that becomes established on surfaces that are in regular contact with water. Such surfaces include pressurized irrigation lines, non-pressurized recirculation system return lines, holding tanks, mixing tanks, containment vessels and so on. Largely comprised of highly adaptive bacteria, biofilm layers attach themselves to hard surfaces and then grow, becoming thicker and quite established over time.



In horticultural operations such as greenhouses and nurseries, common fertilizer injection actually serves as an accelerant to biofilm growth. Most growers are quite familiar with the presence of biofilm in their fertilizer lines. The layer of slimy growth is seen whenever a line is cut into for repair. Biofilm growth is not restricted to fertilizer lines, however, and is also common in clear water lines, although usually by a slightly less dramatic presence.

An interesting relationship exists between the bacterial complexes making up biofilm and algae. The relationship is a synergistic one: what one needs the other provides. In fact, they work so well together that biofilm is able to provide algae with sufficient energy to substitute for algae's need for sunlight. Any grower who has after cutting into an underground pipe and found it lined with green, algae-laden biofilm in the absence of sunlight has personally experienced this phenomenon. Consider this a highly evolved organic system, one that has survived the test of time.

It's no wonder most water treatment technologies are not capable of breaking biofilm down.

### Chlorine dioxide :

Chlorine dioxide is widely viewed as one of, if not the most effective, sanitizing agents created by man. Chlorine dioxide. In horticulture it is injected via its liquid state into irrigation lines. ClO2 when injected into the injected into irrigation systems to a final, hose-end concentration below 1.0 ppm that results in excellent water sanitation.



Connected to this solubility characteristic is that as a gas dissolved in water, chlorine dioxide is free to diffuse or move within its solution. Due to this property, its molecules are free to move about within an irrigation line. They capitalize on this freedom of movement by penetrating biofilm layers and killing the complex right down to its attachment sites along the hard surface it has colonized. With the exception of ozone, no other sanitizing technology has the ability to diffuse this effectively.

### CHLORITAB - Chlorine dioxide without generator

ClO2 was available till now only in the form of gas which was produced on site by means of generator. The said was detrimental in utilizing the benefits of the product. With the help of CHLORITAB - ClO2 is available in an aqueous solution form, which can be dosed simply with the help of a dosing pump or can be added to the raw water storage tank.

### CHLORITAB finds following application

- For elimination of biofilm from irrigation lines and holding tanks
- For elimination of drip emitter clogging
- For treating irrigation water for diseases control.
- For treating evaporative coolers.
- For treatment of non potable water system.

### CHLORITAB finds following application in horticulture

#### Recommended Does Rate

- 1g CHLORITAB - For 100 Litre of water
- 5 g CHLORITAB - For 500 Litre of Water
- 10 g CHLORITAB - For 1000 Litre of water.
- For treating evaporative coolers.
- 20g CHLORITAB - For 2000 Litre of Water.



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