

# PondZILLA<sup>pro</sup>

Boost Algaecide Performance, Degrade Dead Matter

**PondZilla Pro** is a natural catalyst that accelerates chemical treatments by improving penetration. When mixed with an algaecide or herbicide it speeds the breakdown of dead algae and aquatic plants while stimulating naturally occurring bacteria to fixate nutrients liberated during this process.

By accelerating chemical reactions, PondZilla Pro improves copper algaecide performance. This is especially critical in hard water applications when copper solubility and performance is reduced. PondZilla Pro alone will not kill aquatic plants and algae.

## PRODUCT HIGHLIGHTS

- Biocatalyst that improves the efficiency of chemical treatments
- Dissolves dead algae or aquatic plants on a cellular level
- Speeds chemical reactions and penetration of algaecides and herbicides
- Aids in hard water applications



*PondZilla Pro is available in multiple container sizes: 1, 2.5, 55, and 275 gallons.*

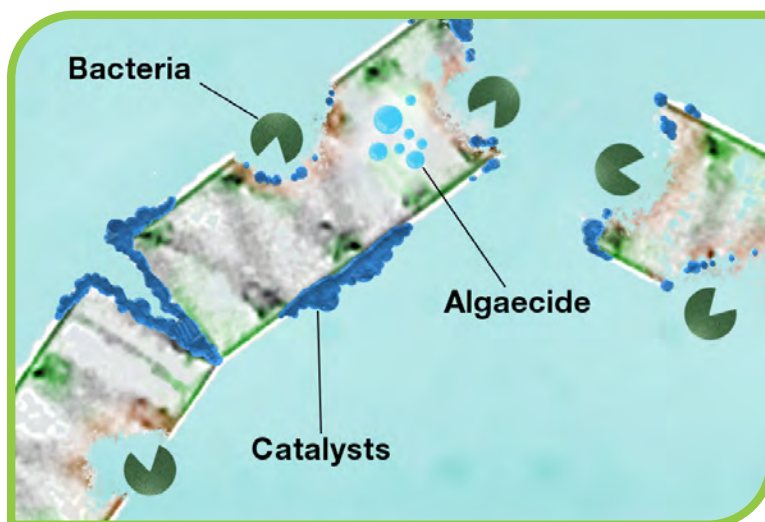


Diagram shows PondZilla Pro lysing and dissolving dead plant material quickly.

## APPLICATIONS

- Lakes and ponds
- Aquaculture
- Hatcheries

- Golf courses
- Retention ponds
- And more!

## BENEFITS

- Used as an adjuvant
- Speeds chemical reactions and penetration
- Reduces dead biomass
- Rainfast via improved absorption
- Less chemical use and safe for the environment

# PondZilla Pro and Algaecide Testing

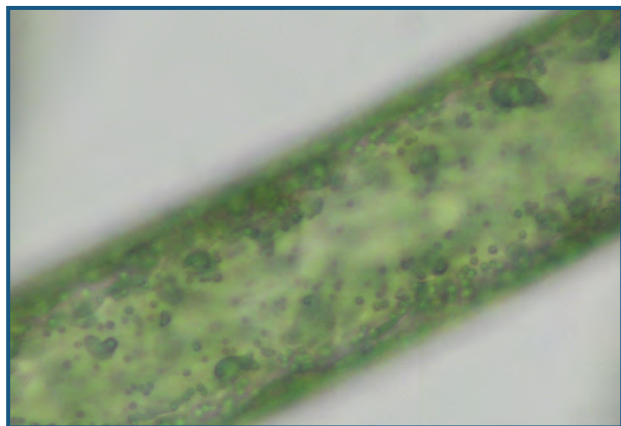
## Naturalake Biosciences Laboratories, 2020

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### Study Highlights

- *Pithophora* samples were treated, comparing performance of chelated copper products alone with chelated copper product + PondZilla Pro
- All chelated copper alone and chelated copper + PondZilla Pro treatments resulted in reduced biomass after 10 days
- The addition of PondZilla Pro improved biomass reduction vs chelated copper formulations alone
- At 7 DAT, all chelated copper + PondZilla Pro treatments showed visible improvements in control vs chelated copper treatments alone
- At 10 DAT, only treatments with chelated copper + PondZilla Pro showed no signs of regrowth

### Healthy *Pithophora*, Before Treatment



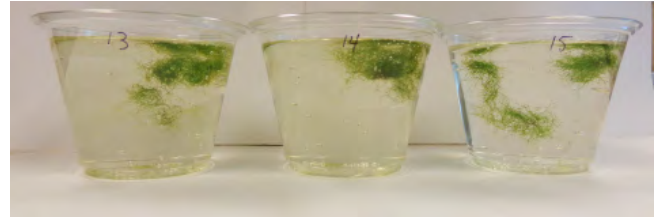
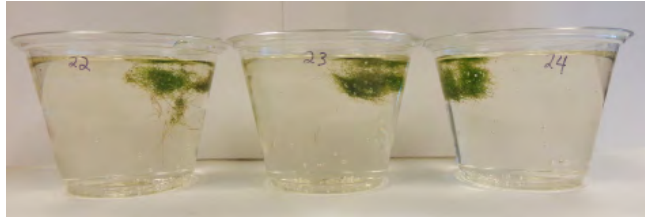
### Dead *Pithophora*, After Treatment



## Untreated Control

## Argos + PondZilla Pro

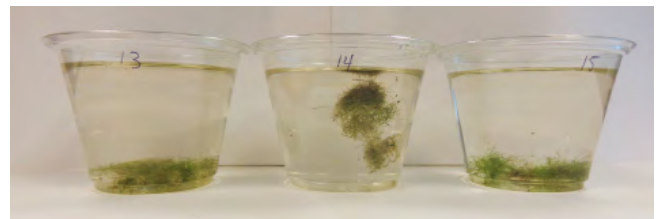
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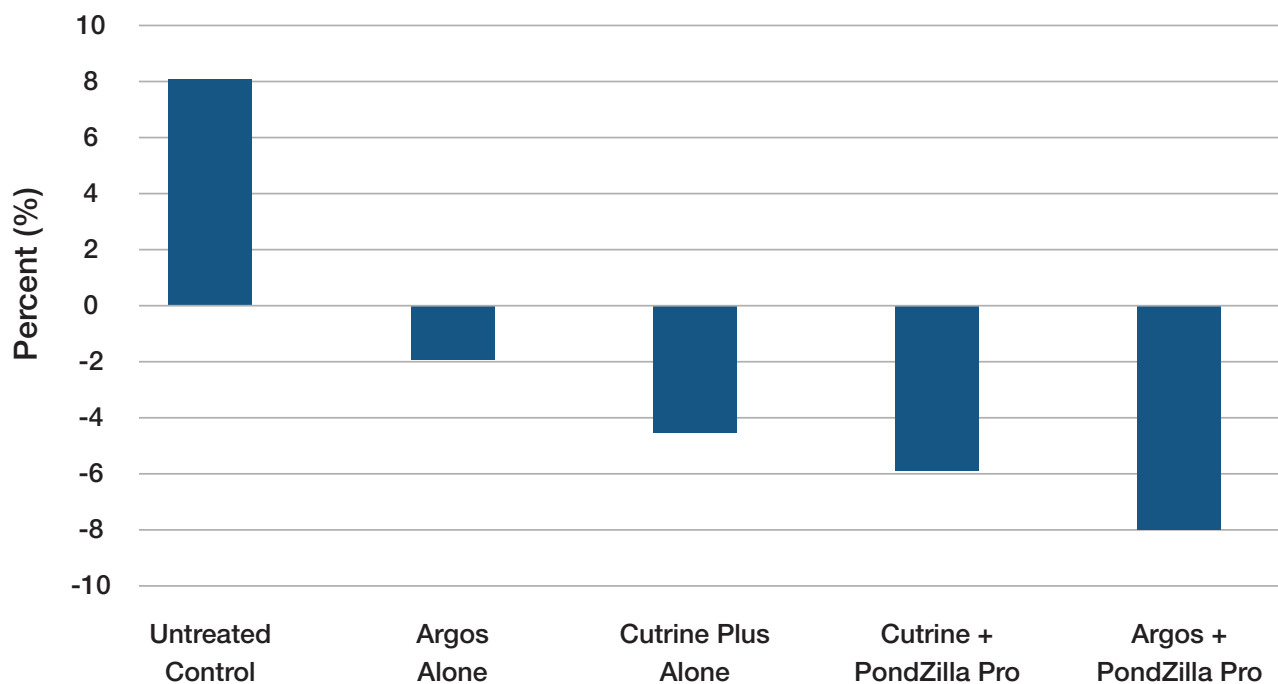
7 DAT



10 DAT



## Percent Biomass Growth



## Conclusion

This study suggests Naturalake Biosciences' PondZilla Pro may be used to improve control of *Pithophora* over chelated copper products alone.

Treatments receiving PondZilla Pro achieved greater damage to algal cells in a shorter period of time in this study. Further testing is underway to expand upon these conclusions and test PondZilla Pro as an adjuvant in more applications.

## PondZilla Pro Dosage - When mixed with algaecide or herbicide

Surface Acres	Filamentous Algae	Planktonic Algae	Aquatic Plants
1/4	16 - 96 ounces	16 - 31 ounces	16 - 64 ounces
1/2	.25 - 15 gallons	32 - 64 ounces	.25 - 1 gallon
1	.5 - 3 gallons	.5 - 1 gallon	.5 - 2 gallons
5	2.5 - 15 gallons	2.5 - 5 gallons	2.5 - 10 gallons
10	5 - 30 gallons	5 - 10 gallons	5 - 20 gallons
100	50 - 300 gallons	20 - 100 gallons	50 - 200 gallons

- Best when mixed with AquaSticker for planktonic algae and aquatic plants

## COMMONLY TREATED ALGAE AND PLANTS

### FILAMENTOUS ALGAE

- *Pithophora*
- *Cladophora*
- *Spirogyra*
- *Hydrodictyon*

### PLANKTONIC ALGAE

- *Aphanizomenon*
- *Chlamydomonas*

### AQUATIC PLANTS

- *Hydrilla*
- *Elodea*
- Parrot feather
- Pond weed
- Coontail
- *Chara*
- Other plants

## THE SCIENCE BEHIND IT

### CONTACT ALGAECIDES

Contact algaecides (copper products, peroxides, and diquat) must contact the cell wall and enter the cell to be effective. [PondZilla Pro degrades dead plant cell walls and weakens cellular integrity](#) when used with an algaecide formulation. Killing all susceptible cells reduces the risk of algae developing any resistance to chemical treatments.

Some filamentous algae, *Pithophora* for example, use akinetes ("survival cells") to store vital growth components and protect themselves from distress. These cells are characterized by thick cell walls. This helps the cells resist chemical attack and allows for regrowth when conditions become more favorable. PondZilla Pro dissolves the walls of dead cells and akinetes and breaks down stored carbohydrates when combined with contact algaecides.

### SYSTEMIC HERBICIDES

Systemic herbicides (i.e. glyphosate, imazapyr, or triclopyr) travel through the cell disrupting processes such as amino acid synthesis, cell division, and photosynthesis. Systemic herbicides tend to work slower, but they do translocate into multiple parts of the plant. For this reason, [we focus on a complete degradation of the dead plant structure](#) and aquatic herbicide dispersion to all susceptible cells.

When combined with systemic herbicides, [PondZilla Pro speeds movement into the cells](#) by breaking down the cellular framework of dead cells, promoting rapid nutrient recovery, and decomposing dead plant material from the inside out. PondZilla Pro works synergistically with systemic herbicides and ensures thorough and complete degradation of dead aquatic plants.

