

Algal bloom: A Threat to the Environment – Control Strategies using a Non-oxidizing Chemical Agent

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PROJECT: ASU-01-2017 - STATUS: [New](#) [X Continuation](#)

Rationale

- Growth of algae in sources water has emerged as one of the most serious challenges for water utilities and other stakeholders. Oxidizing chemical agents have been traditionally used for controlling waterborne pathogens and invasive biological agents such as mussels/snails and algae. However, use of oxidizing chemical comes with their caveats such as disinfection by-products.

Objectives

- This study was focused on evaluating the efficacy and application spectrum of a non-oxidizing biocide (PHP37) for controlling algae.

Approach

- Bench scale experiment performed to test the efficacy of polyhexanide based polymer for controlling blue green algae and green algae. Experiments were planned by considering the following variables
 - Different concentrations of PHP37
 - Effectiveness after different exposure time
 - Residual efficacy

Key Deliverables

- Study has expanded our knowledge on the effectiveness and applicability of non-oxidizing biocides for controlling fresh water algae and many other applications.

Key Findings

- After 12 hour exposure to 0.05% PHP37, 95.6% of green algae and 48% of cyanobacteria were killed. Whereas after 48 hour exposure 99.4% green algae and 99.99% Cyanobacteria were killed.
- The biocidal effect is long lasting under the laboratory conditions.
- The PHGMH spiked at 0.05% concentration continued to fully inactivate new population of green algae entering the reactor for a minimum of 3 weeks.
- The product has the applicability for controlling algal growth.
- The product has shown potential as surface disinfectant, which need further investigation of its efficacy under different application scenarios.

Budget Requested

No additional funds requested.

Project Duration

January 2018 – December 2018