Starry Stonewort Algaecide Treatments on Medicine Lake

Case Study – Plymouth, MN

The Problem:

The invasive macroalga starry stonewort (*Nitellopsis obtusa*) was first discovered at the public boat launch on Medicine Lake (Plymouth, MN) in 2018. The infestation occupied approximately 15 acres and was impeding public access, suppressing beneficial native species, and impacting habitat for wildlife.

The local park district responded quickly in treating this invasive with copper-based algaecides to contain the invasion within the lake and reduce the risk of spread to nearby waterbodies.

Field Evaluation:

In 2023, the park district decided to trial a new treatment strategy and utilize the novel algaecide Komeen® Descend, which incorporates MicroCRYSTAL Treatment Technology™ to aid in control of the biomass. MicroCRYSTAL Treatment Technology™ allows improved delivery of the algaecide to the bottom where bulbils are present, versus controlling only the top of the macroalga where it quickly regrows.

The district wanted to compare previously used tools against the newer algaecide to evaluate improved operational efficiencies and enhanced efficacy. Side by side treatments looking at biomass reductions of a standard copper sulfate/Hydrothol® 191 treatment vs Komeen® Descend were completed the summer of 2023.

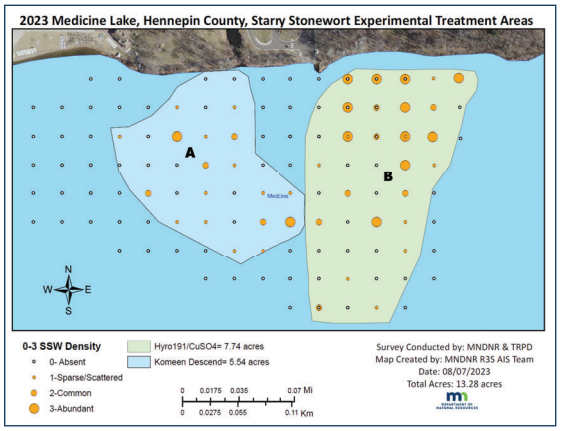

Figure 2. Experimental treatment areas on Medicine Lake. Treatment Area A: Komeen® Descend. Treament Area B: CuSo4/Hydrothol® 191

Project Overview:

Location: Medicine Lake, MN
Water Volume: 924 surface acres, 49 feet maximum depth
Project Objective: Evaluate SSW management program improvement with Komeen® Descend vs historic mix of copper sulfate/Hydrothol® 191
Solution: Komeen® Descend
Treatment Date: 08/11/2023

Medicine Lake is the first lake to be infested with SWS in the Twin Cities Metropolitan area and the 11th lake to be infested in Minnesota.

Figure 1. Biomass sampling on Medicine Lake by the MN DNR.

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Starry Stonewort Algaecide Trials on Medicine Lake

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The Results:

MN DNR staff along with Three Rivers Parks District completed plant surveys and biomass sampling before and after treatments.

Biomass sampling was evaluated as follows:
- 4 sampling stations targeted in most dense SSW locations
- Randomly tossed 0.5-meter quadrat at each station
- All vegetation was collected within quadrat
- Wet weight biomass of SSW was recorded

At 2 weeks after treatment (WAT), biomass reduction in the Komeen® Descend treatment area was much greater (~90% vs ~69%). At 6 WAT, the biomass continued to decrease to 98% in the Komeen® Descend treatment, whereas it only remained similar in the Hydrothol® treament area.

Biologists also observed visible impacts including more intense dark coloration of both the above ground SSW and the associated bulbils in the Komeen® Descend treatment areas.

The cooperator was pleased with the Komeen® Descend results and additional and expanded field treatments are planned.

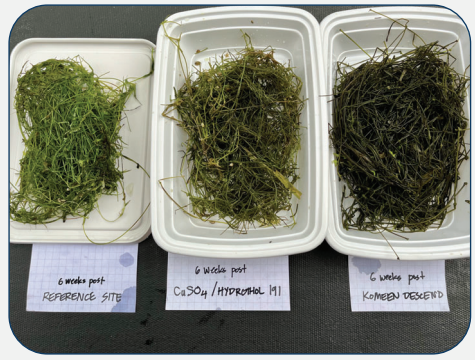
Sample ID	Chemical	Biomass (grams)			% Reduction 2 WAT	% Reduction 6 WAT
		8/7/23	8/24/23	9/21/23		
SSWBIO1	Komeen Descend	194.15	9.58	4.78	95.07	**97.54**
SSWBIO2	Komeen Descend	189.51	29.79	3.39	84.28	**98.21**
SSWBIO4	Hydrothol/ copper sulfate	374.31	77.79	63.12	79.22	**83.14**
SSWBIO6	Hydrothol/ copper sulfate	217.28	90.84	98.92	58.19	**54.47**

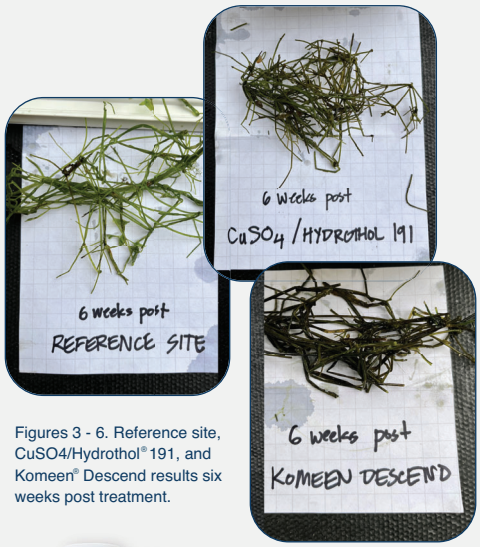
Table 1. Biomass sampling results.

Conclusion:

Komeen® Descend achieved rapid and increased control of Starry Stonewort 2 WAT compared with copper sulfate/Hydrothol® 191. Control increased through 6 WAT with no re-growth observed.

More trials are planned to further reinforce the benefits of this approach, including assessing potential for re-growth of biomass and the viability of bulbils.





Figures 3 - 6. Reference site, CuSO4/Hydrothol® 191, and Komeen® Descend results six weeks post treatment.

Komeen® Descend

Komeen® Descend features MicroCRYSTAL Treatment Technology™, the first of its kind in aquatics. It sprays like a liquid, but stays in place like a granule.

MicroCRYSTAL Treatment Technology™

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