

AGMIN NEWSLETTER No. 220

Bioassays with Cupricide 110[®] and Kupramine[®] against *Anabaena circinalis*

This project involved a series of range finding toxicity tests, or bioassays, with Cupricide 110[®] and Kupramine[®]. The purpose of the testing was to establish the effective dose rate for a problem cyanobacterium (blue-green alga)–*Anabaena circinalis*, for the two copper chelate algicides in a natural water sample that represents a challenge with respect to pH, alkalinity (TA) and DOC in natural waters.

The test determined the toxicity of the two algicides over 48 hours in natural water that had the following characteristics: pH – 7.45, Dissolved Organic Carbon – 5.4 mg/L, Alkalinity (as CaCO₃) – 84 mg/L.

The tests showed that the following dose rates (as mg Cu/L) were 100% effective against *A. circinalis*:

	24 Hours	48 Hours
CUPRICIDE 110[®]	<0.1	<0.05
KUPRAMINE[®]	<0.5	<0.2

The key findings from the study were:

- Cupricide 110[®] was the more effective of the two algicides against *A. circinalis*, with an MLD₁₀₀ of 0.1 mg Cu/L after 24 hours and 0.05 mg Cu/L after 48 hours
- Kupramine[®] had an MLD₁₀₀ of 0.5 mg Cu/L after 24 hours and 0.2 mg Cu/L after 48 hours
- However, under test conditions both CUPRICIDE 110[®] and Kupramine[®] performed well, and in accordance with dilutions stipulated in the directions for use
- The effective or minimum doses are slightly lower than those given in the above table indicating that Cupricide 110[®] in particular has more effective algicidal action than indicated on the current label
- Cupricide 110[®] performed exceptionally well in water that represents a challenge to the toxicity of copper algicides.

These tests indicated that Cupricide 110[®] may be effective at 1/10 the current dose rates for copper sulphate when used to control *Anabaena* in natural water with similar adverse chemistry.



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