

# AGMIN NEWSLETTER No. 232

## Application Techniques of Cupricide<sup>®</sup> for Large Water Storage Reservoirs

Cupricide<sup>®</sup> is a liquid algicide approved by the NRA for use as an Algicide in contained water bodies. Cupricide<sup>®</sup> is completely and readily miscible in water and can be applied neat (undiluted) to large water bodies by spraying on the water surface using boat-mounted boom spray or aerial spray.

### Boat-mounted Boom Spray Application

An outboard powered boat is required with capacity to carry two persons and a holding tank to carry 200 – 400 litres of Cupricide<sup>®</sup>. The Cupricide<sup>®</sup> will be transferred from the holding tank via a small self-priming, centrifugal pump powered by a gasoline engine.

A suitable specification for the pump is:

Maximum delivery volume:	120 Lt/min
Suction Head:	8 metres
Axle Seal (mechanical):	Ceramic-carbon
Engine (gasoline):	Robin air-cooled, 2-stroke
Net weight:	6 Kg

A typical unit meeting these specifications is a Robin Pump Model PTG109  
(For further information on pump availability, please contact Agmin Chelates).

To apply Cupricide<sup>®</sup> uniformly over the water surface it is desirable to make traverses at 25 metres width along the length of the reservoir. For each traverse of 25 metres, the water volume to be treated, the pumping rate and the boat speed can be calculated as follows:

1. Water volume to be treated:  $\frac{L \times D}{40}$  ML where; L = length (m)  
D = depth (m)
2. Volume of Cupricide<sup>®</sup> required:  $\frac{A \times L \times D}{40}$  Litres  
where application rate; A = 2, 5 or 10 L/ML
3. Dispensing Rate of Pump: R Litres/min
4. Time to Dispense Cupricide<sup>®</sup>:  $\frac{A \times L \times D}{R \times 40}$  mins
5. Boat Speed required:  $\frac{R \times 40}{A \times D}$  metres/min

For a typical application, of a traverse of 25 metres width, 500 metres length (L), 2 metres depth (D), application rate (A) of 2 litres CUPRICIDE<sup>®</sup> per ML will require:

Volume of Cupricide <sup>®</sup> :	50 Litres (Equation 2)
Dispensing Rate of Pump:	20 Litres/min (R)
Time to Dispense Cupricide <sup>®</sup> :	2.5 mins (Equation 4)
Boat Speed Required:	200 metres/min = 12 km/hr (Equation 5)

This traverse will be repeated over the entire width of the reservoir, e.g., if the total width is 250 metres, then ten (10) traverses of the above application will be required at 25 metre intervals. The applied Cupricide® will dissolve and disperse uniformly within 30 minutes, due to physical mixing by the propellers of the boat and by convection diffusion.

## Aerial Spray Application

Cupricide® can be applied by conventional aerial spray equipment, similar to that used for herbicides, utilising light planes or helicopters. Cupricide® can be loaded neat into the holding tank on-board the aircraft, with a carrying capacity of 500 – 1000 litres liquid (650 – 1,300 Kg).

Application rates for Cupricide® will be 20 litres – 50 litres per hectare, for a calculated dose rate of 0.2 – 0.5 mg/L as copper. This quantity of Cupricide® will be sufficient to treat the water body to a depth of 1.0 metre. If the algae are present at greater depths, then the above quantities will need to be increased by a factor equal to the water depth in metres, e.g., to treat water to a total depth of 5 metres the application rate will be 100 – 250 litres of Cupricide® per hectare.

The added Cupricide® will readily dissolve and disperse in the water column by wind and wave action, as well as by convection and diffusion.



Boat-mounted Boom Spray application



Aerial Spray application



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