

Aquarius Drilling Services

Water Bore Construction - Pump Installation - Irrigation - Water Treatment

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ACD Treatment

FOR PREVENTION OF ALGAE AND EVAPORATION LOSSES IN DAMS, LAKES, ETC.

This is perhaps one of the simplest and safest methods to achieve the following

- ❖ Algae free water - all types of algae
- ❖ Colour problems such as clay to drop out
- ❖ Cut evaporation losses by up to 80 plus percent

In any body of water that needs to be protected!

So what is ACD?

The abbreviation stands for Algae Control Dye. It is a specific blend of food grade dye colours to either totally or by degree, as required, prevent or limit the amount of sunlight that enters the surface of any body of water that you wish to keep algae free, or prevent evaporation. Developed by the CSIRO many years ago and Aquascope owns the patent and rights to this product mix which is totally safe and non toxic.

The dye is simply mixed into the top surface of the water to be treated and it is then spread about the top surface and will hang, being a colour in the top surface of the body of water down to about a metre depth depending on how much you apply.

Evaporation and algae

When a body of water whether in a dam, lake, pool, spa, open topped storage is left open to the effects of sunlight, then the sun's rays will enter that water surface and warm the top layers of the water. Evaporation starts!

If this occurs when it is warm and the temperature increases, then the photo synthesis reaction of sunlight passing into that water supply will trigger algae development and increase evaporation.

Algae, being a single cell life form will develop and split very quickly and this is called mitosis. Cell division will continue as long as there is sunlight. The hotter the weather the faster the growth.

Deep water will discourage the growth as the plant prefers warm conditions. In a pond, the algae can be stopped or controlled by planting plants that supply a good coverage of surface leaf structure, usually water lilies. Some other aquatic plants are also very good such as Rainbow Nardoo.

An abundance of subsurface plants such as vallisneria or elodia and such other submersible green leafed plants will compete against the simple life form and keep it at bay. Planting can be costly and tedious but the effect is also very attractive and why ponds are so popular.

This is very often not a realistic proposition and if the pond is shallow, the plants will simply not be effective.

The advantages of ACD.

The ACD is very attractive as the water colour treatment creates a beautiful blue finish.

- ✓ **It is relatively low cost**
- ✓ **Immediately effective**
- ✓ **Easy to apply**
- ✓ **Lasts for up to three years**

Another high performance water treatment product from the house of the Water Doctor designed to quickly solve problems and save you money.

ACD

Algal Control Dye

This product was originally designed to control Blue Green Algae outbreaks in dams and reservoirs. It is a specific blend of food grade colour dyes to completely stop the specific light spectrum from entering the body of water to be protected.

The concentrate must be applied to reach a colour intensity of up to 4ppm.

Extensive use of the product has confirmed its ability to

- **Stop evaporation**
- **Cause clay particles to drop to the bottom by colour displacement**
- **Stop any form of algae**
- **Prevent suction pipes from blocking with algae development.**

The evaporation prevention is achieved by its ability to block warmth.

The displacement is achieved due to the fact that it is a very fine colour.

Algae prevention is as expected by the very specific design blend and thus the final item of keep suction line clean follows.



The product

Growth of algae in water can present a problem to ornamental ponds, golf courses, lakes and water features, wastewater settling ponds, aquaculture ponds, dams and reservoirs.

ACD is a very environmentally safe remedy to control algal blooms. Other methods often use chemical algaecides that contain copper sulphate and chromium.

These compounds can have side effects and may be harmful to aquatic animals and plants. Humans also often need to avoid contact with the water treated with these chemicals. ACD offers no risk at all.

ACD is a vegetable based product that is safe to handle. It is water-soluble and there is no withholding period. As a natural vegetable product it is safe for fish, livestock, plants and humans. ACD is used with success on golf courses, recreational parks, aquaculture ponds and farm dams.

Loss rate

The product does fade off after about three years or is pumped out if the suction line is too low.

Application

For large systems many choose a motorised boat and apply to the propellor for mixing.

For smaller systems a fire pump is effective and or a high performance pump of any type that can spray the water across.



Quantities

Generally the dye is available in 20L drums of concentrate

Dosage rates

Small ponds – mix 500 ml of ACD into 20 litres of water and spray over the surface of the pond.

Lakes & Dams

Mix up at the rate of 5 litres of dye into 50 litres of water and keep well mixed by circulation whilst applying. Spray this diluted mixture over the surface of the water body using a conventional spray unit. Or the dye can be mixed at the rate of 5 litres per 20 litres and then poured into the propeller wake of a speedboat. Thorough mixing can be completed by repeated passes of the boat over the area. Manual application and mixing with ski boats has also proved very effective.

Check colour intensity a few days later and top up dye as required. Where no significant volumes of new water are added after treatment the dye will maintain correct intensity for up to 12 months.

Where heavy algal scum is present on the water surface

ALL SURFACE AREAS MUST BE THOROUGHLY COVERED IN DYE.

Where water movement turns over scum and exposes unsprayed algae a

REPEAT APPLICATION MUST BE DONE IMMEDIATELY.

Every effort must be made to exclude all sunlight from the algae for a minimum of ten days.

Calculating Pond/Dam capacity

Pace out length and breadth of the water body (square off circles and irregular shapes) and estimate the average depth in metres and assume one pace is one metre.

Multiply length by breadth by depth in metres and this will give you cubic metres. Multiply cubic metres by 1,000 to give the water body capacity in litres. (1 million litres = 1 Megalitre (ML)

Water less than 1 metre deep

4 – 5 mls per 1,000 litres (one cubic metre)

Water deeper than 1 metre

2 – 3 mls per 1,000 litres (one cubic metre)

Pond bottom at the edge must not be visible

Where blue green algae or amabeena algae exists, the source of feed for this should also be dealt with or determined. Amabeema is a very toxic algae and feeds off phosphate and when this is depleted will feed off nitrogen. This algae actually matures at the pond bottom and usually in the edge of ponds, lakes, dams where it is much warmer.

The sunlight over several very warm days will create columns of very warm water and the algae will mature in these warm conditions and actually blooms and then rises to the surface with what looks like blue paint. This bloom is at this point quite toxic and needs to be destroyed. Chemicals are sometimes needed to remove the toxin, typically copper sulphate.

ACD can be applied to the water body at a concentration that will allow the blocking of the specific wavelength of light that the algae needs in order to photosynthesise. At the correct concentration the dye absorbs the algae's photosynthetic wavelengths and this weakens the algae and eventually the algae dies. It effectively smothers it to death and prevents its return.