

Hydrosmart and Algae

The Problems:

Minerals create a growing base

Minerals in the water supply create scale, biofilm, and suspended solids etc. which are the necessary bases for algae to affix to and grow on.

Blocks equipment

Dams are particularly prone to algae growths, clogging up irrigation filters and drip lines.

Creates health issues

This algae not only blocks equipment but is in turn the perfect breeding ground for an assortment of fungi, moulds, bacteria and micro-organisms in general creating complex health issues.

The Solution

Removes the growing base

The Hydrosmart treatment breaks down and removes the scale and bio-film substrates and turns all the mineral deposits suspended in the water that are large enough for the algae to form on, into tiny sub 4 micron particles.

The algae die

The algae and fungi have no growing base and cease to form or survive.

Applications

Agriculture, Parks and Ponds

In mineralised, nutrient rich water that is stagnant and exposed to sunlight algae not only flourish but can also get out of control and algae blooms occur.

As they cover the surface of the water, light can no longer reach the lower layers, circulation ceases and a temperature inversion results commonly leading to toxic blue green algae blooms.

Even if the colonies do not get out of control, the algae cling to scale and large crystals and block drippers, sprays, filters and equipment.

The Hydrosmart treatment not only removes the growing bases thus controlling algae growth but will also remove existing algae from any surfaces in touch with the treated water and even entire dams as the resonance frequencies migrate throughout the ponds.



Before



After

Burra Creek

The township of Burra in South Australia installed 2 systems on their creek in the centre of the town to remove the unsightly and smelly algae. The water is now almost crystal clear and the algae has never returned.

Industry

Highly mineralised water from bores, run-off or remediated effluent, rich in nutrients, when exposed to sunlight becomes the perfect environment for algae formations. These algae combine with scale and large mineral crystals and go on to cause blockages in equipment and filters throughout the system.

Textile factory

Thailand's largest textile factory Nang Yang Knitting changed over from bore water to Tachin River water, which was polluted by upstream chicken farms and piggeries. They experienced a variety of problems in the factory from algae and bad odours in the water. A Hydrosmart system was installed in February 2006 after which The Institute of Scientific and Technological Research (TISTR) which was employed to study the algae, reported that more than 95% of algae had disappeared and the water quality had now become "very good" for the dyeing process, the boilers, and even for drinking purposes.

Coal processing plant

BHP's Peak Downs Coal Mine in Moranbah Queensland was having problems with algae and blue green algae in its processing plant dam. After installing Hydrosmart Lesley Chalkley the mines environmental scientist recorded, increases in dissolved oxygen, decreased turbidity and major decreases in the algae and blue green algae counts which went from above 300,000 algae /ml to below 2,000 algae / ml during a ten week exercise.



BHP, BMA coal processing plant supplied by the dam water and the Hydrosmart system installed next to the dam on its 200mm pipe work.

Zoo Pond

A trial conducted on the Sun bear canal at Bangkok's Dusit Zoo showed both visible and recorded drops in blue green algae and biofilm and increased water clarity with the Sun bear reported to be drinking the treated water.

Aquaculture

In fish farms, the prevention of biofilm and algae leads to reductions in filter maintenance, healthier fish and low or no water exchange from ponds or tanks.

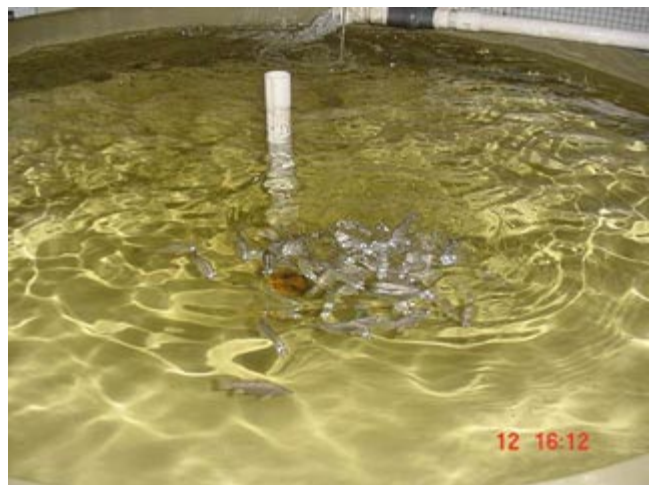
Urrbrae trials

Urrbrae Agricultural College ran trials on their Barramundi tanks with a variety of results occurring from the reduction in algae including clearer water, less build up on the filter materials and no algae growths on the inner walls of the tanks, all providing a better environment for the fish.

The effect was more active healthy fish with a mortality rate down from 10% to 1%



Untreated



Treated

Swim centres

The treatment, by removing scales, bio-films, scum lines etc also takes with it the algae, moulds, fungi and therefore the bacteria which in a swim centre not only improves the health of the environment and lowers cleaning and maintenance but also reduces the bad odours involved. The now softened water feels beautiful and is much clearer.

Next Generation health clubs

Next Generation Club Adelaide has been using Hydrosmart since 2001 on all its pools, saunas, spas and shower blocks with not only high clarity and water quality but they also require little or no tile cleaning or algae control in general. The centre now uses 15% lower chlorine dosing reducing the chlorine smell and adding to the overall health of the facility.

Cooling Towers

Hydrosmart is used as a chemical free means to de-scale cooling towers keeping the heat exchanging at optimum efficiency and reducing maintenance on all parts in the system. This process not only removes scale but also bio-films and other growing substrate thereby removing algae, moulds and fungi which causes a reduction of bacteria.

Grand Hyatt Bali

Jye West was the Engineering Director for the Grand Hyatt Nusa Dua, Bali and was responsible for all the Indonesian hotels in the Hyatt International Group. He applied Hydrosmart technology to the three main Grand Hyatt cooling towers and to two of their swimming pools.

The treatment removed 4.5 tons of scale from these 3 towers in 2002, returning them to maximum efficiency **without any algaecide**, biocide or de-scaling chemicals.

In the 2 swimming pools the chlorine dosing dropped from 8 kgs per day to 1.5 kgs per day (a 75% saving). The water is soft, the algae have gone, the tiles are easy to clean and there is no chlorine smell and less bather complaints.

Food Production

Scale, bio-film, algae, fungi etc are the breeding grounds for bacteria. Their removal results in exceptionally low bacterial counts at food production facilities thereby increasing shelf life of the food products.

Fish Factory

Hydrosmart's effect on Bacteriological problems has been observed in a Fijian fish factory treated with Hydrosmart where they had the lowest swab count of any factory that a team of German food inspectors visited. When the fish product got back to Germany the shelf life went from a maximum of 10 to a maximum of 17 days before bacterial spotting occurred again.

Dairy

A dairy in Western Australia which put a Hydrosmart unit on the water supply, reduced the bacterial count in the milk from 49 to below 17.

More recently, Craven Pastoral dairy saw a 50% drop in the bacteria count in his cows milk after treating his bore water with Hydrosmart.