



ULTRASONIC SOUND WAVES KILL ALGAE

GROWERS in south-east Queensland have been under pressure to cut overall water usage on farms so as to reduce the demand on our dwindling water supplies.

Due to the efficient manner in which most flowers growers irrigate (such as using pressure compensated drip irrigation in substrates with climate controlled structures), growers have had to look at re-using or recycling drain water from their growing areas as well as capturing rain water in order to make substantial savings in water consumption.

Although this seems like an obvious solution to reducing overall on farm water use, this practice is not without its challenges. Prior to being reused, the water needs to be filtered and sterilised and there is also the issue of where and how to store this water. South-east Queensland gerbera grower Steve Randall decided to build a lined dam to facilitate the capture of both rain water and drainage water from his growing areas. The lined pond was a more economical choice compared with tanks, however, being exposed to light, and with high nutrients in his water, algae growing in his dam was the result. (see before pictures).

This algae meant his filtration system and his water disinfection system had to work very hard to treat the water sufficiently to be re-used. By recycling drain water, a grower can reduce his fertilizer usage, however the algae in the pond is actually consuming nutrients in order to grow.

To solve the problem, Steve purchased an Ultrasonic Algae removal system that is manufactured in Holland. The system uses ultrasonic sound waves to kill algae, leaving algae-free nutrient water in his lined pond. Without using the system, the algae would consume much of the nutrient in the water, which would eliminate some of the benefits of re-using drainage water.

Water industry development officer for the Flower Association of Queensland Inc, Sam Plant visited the farm before Steve had installed the device to observe the colour of the water in Steve's pond. (See pictures 1&2)

"Within 48 hours of installing the device, Steve called to ask me to come and observe the difference in his water quality. The change in water colour was impressive, with noticeably less algae in the pond within such a short period of time," Mr Plant said. (see After pictures 3&4)

The way it works

Depending on the model, the transmitter (transducer) is built together with a float. The transmitter with float can be put into the water. During the operation the transmitter sends an ultrasonic sound into the water. Inside the algae there is a little airbag, called vacuole. The ultrasound brings this airbag in resonance and it will tear. This is the end of the algae.

"There are some 20,000 types of algae, and these will react differently to this technology," Mr Plant said.

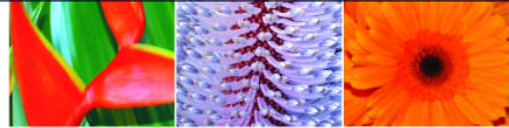


Algae growing in the dam before treatment



"Some will fall out of the water very quickly, others will float to the top and can either be scooped off or will fall after a while or after rain, some will die and remain in the water for some weeks then sink to the bottom of the water storage."

The units will work in tanks, dams and ponds.



Flower Association of Queensland Inc.
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The dam after treatment



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