

Electromagnetic waves enhance water

Words by: Anne Hardie

An innovative West Coast engineer is using electromagnetic waves to clean up effluent ponds and improve the growth rate of pasture under irrigation.

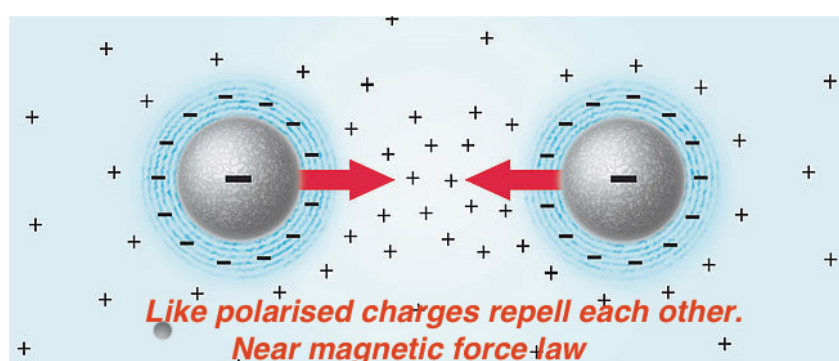
Bob Greer has a long career behind him as a radio engineer which saw him design and manufacture the infrastructure to create data for

animation of the 32nd America's Cup yacht race for worldwide viewing. He produced the radio infrastructure for the precision positioning of reclamation materials at Hong Kong's Chek Lap Kok Airport and he has recently designed a system for the Department of Conservation to collect data on helicopter flight paths to help mitigate noise pollution in the wilderness, with a similar system being developed for monitoring boats visiting wildlife.

It's all physics and he says it's not that hard to translate that knowledge to understanding water peculiarities, which led him to electromagnetic waves to enhance water.

Bob Greer says electromagnetic waves happen naturally in nature.

It happens naturally in nature, he explains. Life on earth likely began with a volcanic eruption that combined with water from rain, creating electrical charges that ignited life. He says life has been described as basically an electrical charge going around and around, with water forming the basis for life to exist. Including the human body which is made up of mostly water and manages to stand up by – no not just spine, muscle and all those predictable things, but rather electrical charges through



water in the body.

By creating electromagnetic waves in water, he can change the molecular structure of water to what is now known as the fourth phase beyond ice, liquid or gas, called liquid crystal, which is something that happens naturally in rain, cold tumbling rivers, or natural spas erupting from the ground. Rain has an electrical charge that dissipates into the humus in the soil which is why plants always respond to rain more than irrigation. Electrical storms enhance that effect and he says it's those electrical storms that boost the massive growth of plants in rainforests just as much as the rain.

Greer has produced a unit that creates the electromagnetic waves, in various models that can either sit in an effluent pond, be attached to an irrigation system or even water entering the home. So far just a small number of dairy farmers are using the technology which is being marketed as Aqua Genesis and John Askin is one of those, on family farms in the Top of the South's Rai Valley as well as Canterbury. He has also used it on a sizeable home pond that had degraded to a murky liquid with a nasty odour. Since the unit was added, the water has cleared and the smell disappeared.

As Greer explains, the electromagnetic waves (think of it as a frequency) disturbed the molecular structure of the water and encouraged it to a liquid crystal state and the bacteria that had created the smell could no longer live in that environment. It effectively turned the pond from



Abandoned North Canterbury effluent pond, day 1, installing Aqua Genesis water restoration device.



Effluent pond recovery trial, pond stirred and operational again by day 12.

anaerobic to aerobic, a process most often associated with oxygen, but it's the disturbance in the water introducing an electrical charge that actually does the trick.

On the Rai Valley farm, a unit was attached to the wash-down water which then flows into the above-ground effluent tank. Since installing the unit, the effluent has become just about odourless and Askin says the pasture it is sprayed on to has noticeably more growth now. Greer says that's due to the electrical charge stimulating microbial activity in the humus which converts the effluent to plant food.

When it rains, the microbial activity in the humus layer gets a good boost from those electrical charges. Rain water percolates through the particles and raises the charge, forcing the particles apart (like charges repel) and allowing more water to enter which becomes trapped between those particles. That has the effect of trapping nutrients for the plants and means less leaching because the water molecules and soil colloids are holding together by an electromagnetic force, he says. You can then translate that process to introduced electromagnetic waves in effluent or irrigation for the same effect.

"Effluent is toxic and microbes convert it to food, so if you're putting effluent on as a supplement to fertiliser in the absence of oxygen and microbial activity, that effluent will have a detrimental effect."

To show the effect of electromagnetic waves on plants, Greer says simple tests have been carried out both in New Zealand and overseas on wilted flowers. Flowers can recover in normal water, but adding those wave frequencies improves their recovery dramatically. He witnessed the same effect in his drought-affected vegetable garden when plants were suffering despite irrigation.

Attaching a unit to the tank of water to emit a frequency transformed the plants within a couple of hours, with once-droopy leaves standing erect.

The Rai Valley farm has also had a unit attached to the herd's drinking water which is sourced from a deep well and collected in a tank before being fed out to troughs. When the unit was first added, the cows began to shed worms in their dung, which a veterinarian attributed to detoxing.

The cows developed shinier coats, had less mastitis and lameness became a rarity.

All because of that electrical charge, Greer says.

"The biome (family of microbes) in the rumen has been altered and the worms obviously didn't like the aerobic environment created by the charge in the water and they exited."

On the Canterbury farm, the effluent pond used to be cleaned out every second year, but since adding a unit, the pond is bubbling with gas and has become odourless. That gas is the microbes doing their work and cleaning up the sludge, Greer says.

He has also used the technology on a dairy effluent pond that had degraded to the point it had a solid crust on the surface and was no longer used. Within days, he says the crust began breaking up, the water began to bubble and they were able to get a stirrer in and bring it back to a usable state.

Greer wanted to see the effect of the units on irrigation also, so installed units on the rotorainers of two Canterbury farms to measure the effect of electromagnetic waves on pasture growth. One farm had river silt soils and the other heavy loam.

The results showed the roots of plants grew between 40mm and 60mm more on the treated areas of both farms compared with untreated and about 36% more water was retained in the soil.

So far, the results of putting "energy into water" is based on experimental observations and theoretical science from abroad and he would like to see real empirical scientific studies carried out to see how it can be used more widely for NZ water quality, reduced leaching and pasture growth. But industry and research organisations have shown little interest to date.

He's not the first to work with electromagnetic waves and a few technologies are available worldwide being used for a wide variety of uses. He says its applications are huge, from agriculture and horticulture for plant growth, to environmental issues such as water quality and hygiene in the food industry.

