Sound Energy Can Be Used to Kill Nematodes and Harmful Algae

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Star Trek fans are familiar with the term sonic shower that was introduced in Star Trek: The Motion Picture and later showed up in Star Trek: Deep Space Nine and Star Trek: Voyager. Although fans have debated whether a high-frequency, low-amplitude acoustic generator would be adequate as a shower, scientists in Iran and Quebec have used sound waves to kill nematodes and harmful algae. Star Trek’s B’Elanna Torres called the technology “radioseptics” in an episode titled “Remember” and real-world applications means a nascent industry already exists.

In 2005, Dr. Amir Hossein Mahvi and his colleagues at Tehran University of Medical Sciences, used sound energy to kill nematodes in 12 minutes using a sonication device that pulsed 42 Khz of sound energy into a tank of water. They used a Branson ultrasonic tabletop bath that has a 64 ounce tank that is filled with water. Samples of nematodes were sonicated in periods of 2, 4, 6, 8, 10 and 12 minutes to determine the exposure time required for complete destruction.

In their paper, the Iranian scientists state that there are more than 15,000 known species of roundworms. The total number of nematode species is estimated to be about one million. Edward O. Wilson, an American professor of biology at Harvard, explains that four out of five animals on Earth are nematodes. Adult nematode worms can lay eggs in as little as three and a half days, or 72 hours, and the eggs are microscopic. Eggs that hatch inside the human body become larvae that are also microscopic. Radioseptic technology could be used to pulse sound waves into food stores and warehouses at night.

Strangely, even though The Iranian Journal of Medical Sciences (IJMS) is in the PubMed database as a peer-reviewed scientific journal, Dr. Mahvi’s article has been removed. The article is available on the Web through the Science Alert Web site.

In 2007, a biophysicist and naturopath named Dr. Hulda Clark (1926-2009) reported similar sonication results using the small water-filled tank in a Conair jewelry cleaner that pulses 40 Khz of sound energy into the tank. Hulda found that the contents of the tank were parasite-free after 20 minutes of pulsed sound energy. Sonication devices have been used in laboratory sciences as well as cleaning applications to loosen particles that adhere to surfaces. The nematodes die because sound energy disrupts cell membranes.

A French Canadian company called Les Traitements Bio-Bac has introduced ultrasound transducer technology that uses audio output to kill harmful algal blooms through the disruption of cell membranes within 72 hours of contact. Gas vesicles become damaged, the algae sink below the surface of the water and then die due to lack of photosynthesis.

Toxic algal blooms have polluted both coasts of Florida since 2004 and the culprit is nitrogen in synthetic fertilizer that causes algae to thrive. Nearly all of the reports neglect to mention that the algal species are genetically engineered and the nitrous oxide given off by algae is a greenhouse gas that is 300 times more potent than carbon. Although sound energy devices that kill algae may reduce the blooms, the real solution would be to halt the use of synthetic fertilizer. The problem is hidden because synthetic fertilizer production has roots in the military industrial complex (guns, drugs and oil). Greenpeace has identified 84 groups that the Koch brothers have funded to be climate change deniers. Koch Industries, founded as Wood River Oil and Refining
Company in 1940, now owns the third largest synthetic fertilizer company. Curbing the world’s use of synthetic fertilizer will be particularly difficult in China that uses four times as much as the United States.

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