Alternative gardening:

Sonic Bloom: Music to plants' stomata?

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Many years ago it was discovered that plants were affected by sound. Studies involving both organic and inorganic matter show the affects caused by sound that few people ever thought possible. Of the following authors and researchers in the field of sound and its affects on things living and non-living, I found most interesting the work of Mr. Masaru Emoto. In his book *Messages from Water,* he provides factual evidence that sound affects the molecular structure of water. Mr. Emoto has visually documented these molecular changes in water by means of his photographic techniques. He freezes droplets of water then examines them under a dark field microscope that has photographic capabilities. His work clearly demonstrates the diversity of the molecular structure of water as it is affected by its environment. To read about the affect sound has upon the structure of the water, go to www.adhikara.com to view slides. Jonathan Goldman in his book *Healing Sounds: The Power of Harmonics,* presented the fact that the molecular structure of the water can be affected by sound (as demonstrated by Mr. Emoto's research) is extremely important. Others who have come to similar conclusions: Joachim Ernst Berendt, *The World Is Sound;* Joscelyn Godwin, *The Mystery of the Seven Vowels;* Don G. Campbell, *The Roar of Silence.* If sound can have a profound effect on the "non-living" (water) how can anyone argue that it does not affect the living?

Dan Carlson in Indonesia in April 2002. Indonesia reported a 100% increase in the production of rice, tea, and cocoa, and a 300% increase in ginger using Sonic Bloom.

Enter Sonic Bloomo

Sonic Bloom consists of a sound generator or sound enhanced CD and a nutrient spray (Hence "sonic = sound, bloom = nutrients," according to Dan Carlson.) The sound generator produces tones in the four to six kilohertz range, the same range as many song birds. In order to explain this more fully I need to first introduce you to the inventor, Dan Carlson.

While serving our country in the Korean conflict, Dan witnessed starvation first hand. This had such a profound impact upon him, that when he left the service, he entered the University of Minnesota. There he studied plant breeding with his ultimate goal: the end of world hunger. To this goal he has devoted his life.

It was learned in the 1930s that plants would "breathe" better when exposed to certain sound frequencies. Dan thought that if a plant would "breathe" more, maybe it would aid in the absorption of nutrients. With the aid of a music teacher he developed a prototype sound generator that helped him grow purple passion plants (normally 18 inches) 600 feet long. He continued to develop the sound unit until it showed a positive result on all living plants at a cellular level. All plants contain stomata cells on the under side of the leaves. Each stoma is less than 1/1,000 of an inch across. It is through these cells that water, nutrients, oxygen, carbon dioxide, and other gases pass. In dry conditions they close to retain moisture. Using a Philips 505 scanning electron microscope, photomicrographs were taken to show plant stomata. Upon close inspection of these pictures you will notice that the treated stomata are more developed and better defined, and there are more of them on the leaves' surface. Finding the right frequency was only half the battle. Finding the proper nutrient spray took an additional 15 years. Both were accomplished by the use of radioactive

Too good to be true? We'll find out. The COUNTRYSIDE staff is going to try Sonic Bloom for ourselves and since it's still early May as we go to press, we'll document the results over the summer. Stay tuned! — *Anne-marie*

isotopes which allowed Dan to determine what frequencies provided for maximum absorption. This helped in determining what nutrients benefit plants most. After years of painstaking research, he determined that a nutrient spray containing a combination of 55 trace minerals, amino acids and seaweed worked best. With the use of radioactive isotopes, Dan was able to document an increase of over 700% in nutrient absorption.

This increase produces healthier plants and a large flavorful fruit, with an extended shelf life and increased food value. Another benefit is an increased concentration of complex sugar chains. Unlike simple sugar (table sugar, seven to 15 molecules per chain), it is believed that in humans complex sugar (300 to 5000 molecules per chain) acts as communicators for the body's defense systems. It is believed that these complex sugars not only increase flavor, nutritional value and shelf life, but also act as an insect control. This high concentration of complex sugars when ingested by an insect is converted to alcohol and they die from alcohol intoxication. Little, if any, pesticide is needed.

I watched a home video in which one garden was treated with Sonic Bloom and the other was not. Potato bugs were swarming over everything in the neighbor's garden, while only a few were on the leaves in the other. The next day only bare plant stems could be seen in the neighbor's garden—every leaf had been stripped off during the night. The other garden showed damage also—it looked like someone had poked holes in all the leaves, like that of a "BB." There were still bugs crawling on the "sticks" of the neighbor's "garden," but only a few here and there on the other. At closer inspection, as the video taper moved the leaves back to reveal the ground , it looked as if it were covered with small gravel. The "gravel" was dead bugs, almost an inch deep! Just eating a small hole in the leaves was enough to kill them because of the sugar content of the plant. Within days nothing at all was left next door and all the bugs were gone or dead.

This alfalfa field was treated with Sonic Bloom and produced nine-foot long plants.

The treated plants showed no ill-effect from the small holes that the bugs had caused. A healthy plant is better able to defend itself against disease, too. Also it is believed that the plants use these sugars as an antifreeze. Since alcohol is basically antifreeze, this may partly explain the ability of plants to withstand frosts. This could be the reason some treated Californian varieties of strawberries are surviving the harsh winters of Wisconsin, and baffling experts who said they would never grow in that climate.

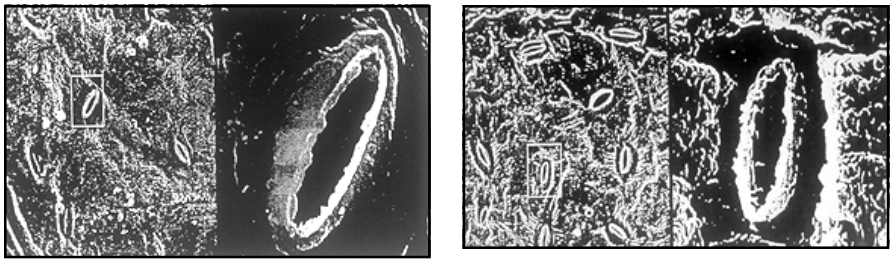
"I'm a multi-billion dollar nightmare for our government because we are paying farmers not to grow while I am doubling yields." — Dan Carlson

Although the sound/nutrient system is certified organic, it also possesses another feature which could have far-reaching implications for this planet. The concept has been nicknamed "Sonic Doom," or sound aiding in the absorption of herbicides. Tests have shown that by employing the sound 45 minutes prior to spraying, even hard-to-kill mature weeds can be sprayed with 50-80% less herbicide, resulting in faster, total kills. The sound is so effective at getting the herbicide into the plant that it doesn't matter if it rains an hour after application. While Dan does not advocate the use of herbicides, using 50% less will obviously result in less damage to the environment. (With just a 20% reduction in herbicide use, it will take five years to reach the toxicity level of a full-strenght application.)The "doom" concept may also make the less effective, but environmentally safe, weed killers more efficient.

Dan's stories have not fallen on deaf ears. He has lectured to Parliament and was the keynote speaker for the Bio-Research committee, which consists of 8,000 organic farmers in Japan. The day before he lectured, the farmers who had used Sonic Bloom told the great body of organic farmers and researchers their success stories. The Japanese were so impressed with Dan that he received an award from the Minister of Finance, as well as news coverage in 25 of Japan's leading newspapers. The Bio-Research committee declared that it was the best plant growth product they have found and will help distribute it across their country. In 1993, he was invited to speak to Chinese officials about developing their agriculture.

Unfortunately, Dan remains virtually ignored by the United States government as well as by the American mainstream research community.

"I'm a multi-billion dollar nightmare for our government because we are paying farmers not to grow while I am doubling yields," he says. Com-



Left: **An untreated plant stoma.** *Right:* **Notice the increase in numbr and size of treated stomata.**

mon sense also suggests that without using pesticides, herbicides, and other agri-business dependencies, Sonic Bloom will have the same "hard row to hoe" as solar energy and the light rail system. Nevertheless, Dan remains the eternal optimist.

In New Mexico, they're making world record claims for amaranth. The treated amaranth matured 56 days earlier, on poor, adobe, sandy soil with a pH ranging from 7.7 to 7.9, with heads the biggest ever encountered. In the first year, the amaranth grew 450 gram heads. The next year, the seeds taken from those heads weighed more than a kilo. Treated plants produce seeds which grow as well as their parents without further treatment. It appears they have improved genetic qualities. However, those seeds when further treated, grow to become even better than their parents. Carlson calls this "Genetic elasticity—the latent ability of plants to exhibit characteristics hidden in their gene pools, pulling out advantageous genes that may have been hidden for hundreds of years."

In the desert soils of Israel, Dan became part of a project involving the growing of 450 rare and endangered plants. Some seeds which can take 100 years before they germinate, did so only in the presence of Sonic Bloom. Alan Kapuler, of Peace Seeds Oregon, reported the effects on the germination of 89 kinds of flowering plants. Apart from dramatically stimulating the germination of several other plant types including squash, sweet corn, peppers, paulownia, and three species of rare solanums, four of the plants germinated only in the presence of Sonic Bloom. Free seeds have been sent to many nations with the help of The Seed Corps backed by actor Eddie Albert and Ian Allison (who paid for 1-1/2 million dollars worth of seed that was sent to Indonesia and will create 33 million kilo's worth of food).

We are developing techniques to carry this anywhere in the world, such as Sprouts Extraordinaire in Longmont, Colorado. We have found that alfalfa sprouts in particular, increase in weight by 1,200% in 72 hours. We take a seed, soak it in the solution, play the sound, and 72 hours later we have an edible sprout with a shelf life of nearly 30 days.

Dan's ideas don't end here—he understands that sprouts aren't the most nutritionally valuable crop available. He also acknowledges that sprouts would not be culturally acceptable in all parts of the world. His idea also includes the use of other staple crops such as mung beans. Once he is able to bring a reliable source of food to people and show them how to produce the food themselves, his plan could mushroom into a bright new future for millions of people. (Experiments done with Seeds of Change and Sonic Bloom in Sudan, Kenya, Ethiopia, and Zimbabwe showed survival in 130-140 F temperatures and 2-1/2 inches of rain.)

When people are able to feed themselves with nutritious food from their own land, not only will those societies live, but they will flourish.

With the continued decline in wild song birds and depletion of our soils, this may be our last hope to save a starving world. His invention has increased agricultural production around the world (he is being credited with rebounding the economy of Indonesia), and he has been nominated for a Nobel Prize. Currently, Dan is working on his 140-acre farm near River Falls, Wisconsin, grafting and developing 128 varieties of nut trees.

I've enjoyed visiting with Dan at his Hazel Hill Nut farm. Once while there, a member of the royal family of Thailand phoned him to personally thank him for this great blessing he has given to mankind. My only hope is that more will catch the vision and end hunger and disease one garden at a time.

El Niño returns

The last time El Niño came around, it wreaked havoc on U.S. weather patterns. Some areas of the country saw extreme drought, others saw above normal rainfall. And then there were the temperatures – above normal in the north, below normal in the south. Agriculture Meteorologist Tom Priddy said El Niño is brewing again in the Pacific.

"Current weather models indicate the atmosphere-ocean teleconnection, called El Niño, along the Pacific equator, is starting to boil into a stew again," he said. "This is similar to 1983, 1987, and 1997/98."

El Niño occurs every four or five years and always begins with the warming of Pacific waters near the equator, which then affects weather in other parts of the world. Warmer-than-normal sea surface and subsurface temperatures occurred in the equatorial Pacific during February and March 2002.

Priddy does admit that several atmospheric indices indicate El Niño has not yet developed to a point that guarantees sustained growth of the event, however those indices often are inconsistent in the early stages of El Niño.

Enhanced rainfall has already been observed over the tropical west-central Pacific from Papua, New Guinea, eastward to the date line (180 W) since the beginning of 2002, and also over the warmer-than-normal waters between the west coast of South America and the Galapagos Islands.

The latest statistical and coupled model predictions show a spread from slightly cooler-than-normal conditions to moderate warm-episode conditions during the remainder of 2002.

Other techniques indicate that conditions will remain near normal or even return to slightly colder than normal for the remainder of 2002.