French Physicist Creates New Melodies - Plant Songs

Author/Source Unknown

Remember those song birds we used to hear in the fields? The sounds of animals in nature singing a symphony of soft and subtle sounds as all things flow together to create a living and vibrant concerto? Science is now showing that these sounds actually do influence the growth of plants. Researchers have demonstrated that plants respond to sounds in pro-found ways which not only influence their overall health but also increase the speed of growth and the size of the plant.

Many people remember hearing in the late 1960's and 1970's about the idea that plants respond to music. There were lots of projects in high schools and colleges which successfully tested the effects of sound on plant growth. It was determined through repetitive testing that plants did respond to music and sound. The first book which brought this idea to most of us was: The Secret Life of Plants, by Peter Tompkins and Christopher Bird (Harper & Row 1973). In this best selling book a number of astounding revelations about plant growth were revealed. The idea that plants were influenced by sound in both positive and negative ways was demonstrated by several world class scientists at that time.

When we think of plants being affected by sunlight we are really looking at the effect of a portion of the electromagnetic spectrum on plants that portion which includes visible light. It should not surprise us that sound also impacts plant growth because it is, in essence, an extension to other parts of the electromagnetic spectrum.

The science was first disclosed in an article by Andy Coghlan which appeared in New Scientist (May 28, 1994, p.10). The article confirmed old ideas by placing them in a scientific context. It tells an excellent story about the impact of sound on plant growth, bringing to light what was before considered esoteric or mysterious science. After reading this short article and those which follow in this issue of the Flashpoints a good deal more will be thought of "singing gardeners" and "plant communicators."

Many people remember reading accounts of plant growth being stimulated by sound waves. At that time, "talking" to plants and playing plants different types of music was used to influence growth. A number of people were using these techniques without being able to completely explain the phenomena. This article is part of that story a story which could have a profound impact on the way we grow and produce our food.

Eccentrics who sing to their plants? People playing melodies to organic matter with the expectation that it will help stimulate growth? These ideas were the thoughts of some "non-scientists" until French physicist and musician, Joel Sternheimer, discovered the mechanism for how plants respond to the stimulation of sound waves. Sternheimer com-

poses musical note sequences which help plants grow and has applied for an international patent1 covering the concept.

The sound sequences are not random but are carefully constructed melodies. Each note is chosen to correspond to an amino acid in a protein with the full tune corresponding to the entire protein. What this means is that the sounds sequenced in just the right order results in a tune which is unique and harmonizes with the internal structure of a specific plant type. Each plant type has a different sequence of notes to stimulate its growth. According to New Scientist, "Sternheimer claims that when plants "hear" the appropriate tune, they produce more of that protein. He also writes tunes that inhibit the synthesis of proteins." In other words, desirable plants could be stimulated to grow while undesirable plants (weeds for instance) could be inhibited. This is done with electromagnetic energy, in this case sound waves, pulsed to the right set of frequencies thus effecting the plant at an energetic and submolecular level.

Sternheimer translates into audible vibrations of music the quantum vibrations that occur at the molecular level as a protein is being assembled from its constituent amino acids. By using simple physics he is able to compose music which achieves this correlation. Sternheimer indicated to New Scientist that each musical note which he composes for the plant is a multiple of original frequencies that occur when amino acids join the protein chain. He says that playing the right notes stimulates the plant and increases growth. This idea is particularly interesting because it may lead to the eventual obsolescence of fertilizers used to stimulate plant growth. This new method would be cheap and relatively easily provided throughout the world, thereby avoiding many of the problems associated with the extraction, shipping, environmental and economic costs of chemical fertilizers.

Playing the right tune stimulates the formation of a plant's protein. "The length of a note corresponds to the real time it takes for each amino acid to come after the next," according to Sternheimer, who studied quantum physics and mathematics at Princeton University in New Jersey.

In experiments by Sternheimer, he claims that tomatoes exposed to his melodies grew two-and-a-half times as large as those which were untreated. Some of the treated plants were sweeter in addition to being significantly larger. The musical sequences stimulated three tomato growth promoters, cytochrome C, and thaumatin (a flavoring compound). According to Sternheimer in the New Scientist, "Six molecules were being played to the tomatoes for a total of three minutes a day."

Sternheimer also claims to have stopped the mosaic virus by playing note sequences that inhibited enzymes required by the virus. This virus would have harmed the tomato plants.

The note sequences used by the inventor are very short and need only be played one time. For example, the sequence for for cytochrome C lasts just 29 seconds. According to Sternheimer, "on average, you get four amino acids played per second" in this series.

The inventor also issued a warning for those repeating his experiments. He warns to be careful with the sound sequences because they can affect people. "Don't ask a musician to play them," he says. Sternheimer indicated that one of his musicians had difficulty breathing after playing the tune for cytochrome C.

Plant stimulation by sound may have profound implications. The idea that a cheap source of "electromagnetic fertilizer" has been developed should be exciting for many third world countries. At a time when human progress can be made through simple solutions in agriculture, resources are being wasted in the extraction of mineral and oil compounds for fertilizers. If this method of fertilization were followed the human intellect would prove superior to physical capital in terms of distribution and production of this new technology.

The idea that sound can have a healing effect on humans is being explored by a number of independent scientists around the world. The know-ledge of the "sound effect on proteins" offers insights to health practitioners of the benefits to humans. In addition to the favorable economic factors, the increased vitality of the plant substances can positively impact the health of all humans that consume them.

The patent includes melodies for cytochrome oxidase and cytochrome C which are two proteins involved in respiration. It also includes sound sequences for troponin C which regulates calcium uptake in muscles. Further, a tune was developed for inhibiting chalcone synthase which is an enzyme involved in making plant pigments.