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The Next Bigly Thing: Electroculture

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Electroculture is much under-reported but extremely important area of technology that could transform the planet's agricultural productivity quickly and at low cost.

Publisher's Note: We and others have been researching the effects of magnetic fields and electrons on seeds and plants for some time. It is certainly true that plants can be made more heat, cold and drought resistant and germination rates, growth rates and crop yields can be dramatically increased by the application of certain types of natural electromagnetic energy while other, un-natural types, such as microwaves, can harm plants. This is an immensely important and neglected field of study. Following is some of what the agro-chemical industry doesn't want you to know.

By Robert A. Nelson

Plant growth can be accelerated by hundreds of percent by the smart application of energy in the forms of static electricity, DC/AC radio frequencies, magnetism, and monochrome and intermittent lighting, and sound. Crop yields and quality are improved to the same degree. The energies are applied to the seeds, plants, soil or the water and nutrients. And thus tons of food can be cultivated in a quarter acre or less, in gardens, on balconies, rooftops, in flowerpots or hydroponics or permaculture.

That translates into vastly increased profits for a wide range of agricultural products. Hydroponic systems are ideally suited for electroculture.

And there's more -- much, much more, as the Russian researchers B.R. Lazarenko and I.B. Gorbatovoskaya reported:

> "Reports that the characteristics acquired by the plants in electrically treated soils are transmitted by inheritance to the third generation are particularly interesting.

> “Under the influence of the electrical current, the numerical proportions between hemp plants of different sexes was changed by comparison with the control to give an increased number of female plants by 20-25%, in connection with a reduction in the intensity of the oxidative processes in the plant tissues.” (J. Applied Electrical Phenomena #6, March-April 1966)

It is very easy to try your thumb at electroculture. The innovative Ion-A-Gro Solar Plant Ionizer can increase plant growth by more than 30%! Just hang the widget above the lucky vegetable and watch closely...

Zenion Industries, the manufacturer of Ion-A-Gro, claims:

> “Technology helps plants grow faster, stronger... Dramatically boosts fruit and vegetable yield... Increases the number of growing cycles in a season... Helps to mitigate infestation by unwanted herbivores such as aphids and spider mite...”

Agrovolt

Inventor Jim Lee explains it geekly in his US Patent Application US2015070812:

> “Negatively charged carbon dioxide molecules are more readily absorbed by plants during photosynthesis thus increasing the photoinduced charge separation process which shuttles electrons through an electron transport chain within the organism. The result is faster growth, more abundant flora or fruit, and a healthier plant... Atmospheric ions are then available to compliment the photosynthesis process as well as plant respiration and absorption of water and minerals in the soil... The high voltage ion source also helps to mitigate infestation by unwanted herbivores.”

Master cultivator Asa Shaeffer (https://www.youtube.com/watch?v=y76rDFQlfl0), Emerald Cup winner and CEO of Sonoma County Collective, states enthusiastically:

> “This is the easiest thing you will ever do for your grow room! You will not be disappointed!”

Mike Nelson (Senior Vice President, PalliaTech, Inc.) also attests to the effectiveness of Ion-A-Gro:

> “While testing the Ion-A-Gro units for several cycles our yields have been significantly increased. As well, we have noticed that while mites existed in our facility, they appeared to be significantly reduced in the grow rooms that were utilizing Ion-A-Gro units. So far there is reason to believe that the units are of profound interest to any grower, hobbyist or commercial enterprise.”

Another equally easy, simple, inexpensive way to titillate plants with electricity is to poke an AgroVolt unit into the soil near the roots. Agrovolt uses a few millivolts of electricity generated by a solar cell to increase the absorption of nutrients into the root system. It is assured to produce from 60% up to 150% increases in weight, in half the usual time, while reducing or eliminating infestations.

Inventor Scott Friedman’s Indiegogo project says:

> “There’s no need for fertilizer or pesticides with the Agrovolt. Root systems grow larger, seeds produce greater amounts of female plants in half the time, fruits, vegetables and herbs grow more robust in flavor and leaves grow thicker and greener. It’s truly amazing. This truly is the most affordable technology on the market. Between not having to buy fertilizer and pesticides to plants that double in size, it’s just an unsurpassed tool for making a garden even more gorgeous and fruitful.
>
> “We are currently working on a version that incorporates Bluetooth technology which will be capable of presenting real time data to a smartphone or computer on the health and efficiency of the plants being grown. We’re very excited to roll that product out as well.”

Justin Christofleau

The benefits of electroculture can be gained by completely natural means, simply by erecting antennas to collect atmospheric electricity.

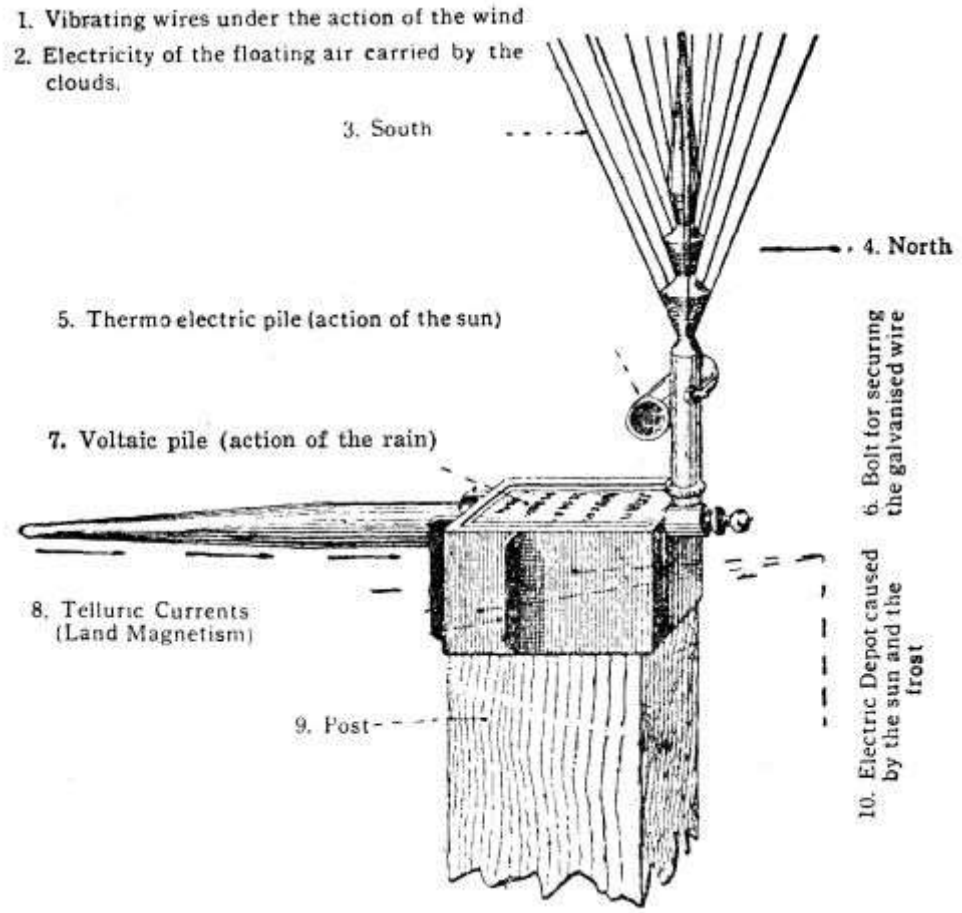
The French scientist Justin Christofleau attracted considerable attention thereby in 1925, when he grew crops of enormous vegetables. Clover, trefoil, and oats treated by his method grew to 7 feet. Potato plant grew as high, and produced up to 3 dozen tubers of exceptional quality, weighing up to 2 pounds. Vineyards that were attacked by Phyloxera were cured and rejuvenated. Carrots and beets grew to 19 inches length, and other vegetables gave similar yields, as illustrated:

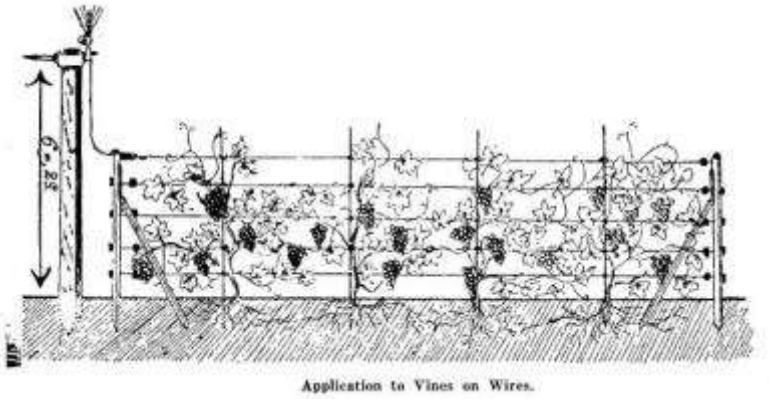
Field of Potatoes grown by the Electroculture process. Height, 6ft. 3in. Number of Tubers to each plant 30 to 35. Weight of each Tuber from 1lb. 1oz. to 2lb. 2oz.

Christofleau presented the results in a book titled “ElectroCulture (http://www.trillions.buzz/files/Electroculture_1927_Christofleau.pdf)”, which he introduced thus:

> “Appeal to Agriculturists, Viticulturists and Horticulturists of the World: Laborious phalanx, to whom I have the honour to belong by my birth, I come now towards you to raise my voice in favour of a great invention which will be, if you understand me, one of the great factors in the resurrection and prosperity of the whole world, as it means the intensifying of the production of the earth, the increasing of crops in considerable proportions, and minimizing as much as possible the manual labour appertaining to culture and the economizing of the immense sums of money which are being spent annually for fertilizers and replacing them by this new apparatus wherein are condensed all the forces of nature. That is to say: The land magnetism, telluric currents, the electricity of the floating air and that carried by the clouds, the sun, the wind, the rain, and even by the frost, forces which are

captured and transformed into energetic electricity by this apparatus which carries them to the soil in a FEEBLE AND CONTINUOUS MANNER, and which renders it free from the microbes which attack the Seeds and Plants..."





Application to Vines on Wires.

M. Christofleau also noted the results obtained by earlier experimenters, e.g.:

"A Russian scientist, Spechnoff, perfected the Electro-vegetometre, invented by Abbe Bertholon [1783], and noted an over-production of 62% for oats, 56% for wheat, 34% for linseed. M. Spechnoff, furthermore, has found that the composition of the soil is modified by the action of the currents..."

Christofleau's apparatus consisted of a 25-ft wooden pole capped with a metal pointer aligned north-south, and an antenna. Copper and zinc strips were soldered together to generate electricity. Several of the poles were set about 10 ft apart, and the wires leading from them extended about 1000 yards at a depth of about a foot.

CABBAGE.

Measuring 11 feet in circumference.

Pioneers of ElectroCulture

Experimental study of the effects of electricity on plant growth began in 1746, when Dr. Maimbray of Edinburg treated myrtle plants with the output of an electrostatic generator, thereby enhancing their growth and flowering. Two years later, the French abbot Jean Nolet found that plants respond with accelerated rates of germination and overall growth when cultivated under charged electrodes.

Beginning in 1885, the Finnish scientist Selim Laemstrom experimented with an aerial system powered by a Wimshurst generator and Leyden jars. He found that the electrical discharge from wire points stimulated the growth of crops such as potatoes, carrots, and celery for an average increase of about 40% (up to 70%) within 8 weeks. Greenhouse-grown strawberry plants produced ripe fruit in half the usual time. The yield of raspberries was increased by 95%, and the yield of carrots was increased by 125%. Crops of cabbage, turnips, and flax, however, grew better without electrification than with it. The Laemstrom system comprised a horizontal antenna suspended high enough to permit plowing, weeding and irrigation. The voltage applied to the antenna varies from 2 to 70 KV, depending on the height of the antenna. The current was about 11 amps.

In 1909, the Swiss priest J.J. Gasner obtained similar results with his replication of Laemstrom's work. Also that year, Prof. G. Stone showed that a few sparks of static electricity discharged into the soil each day increased soil bacteria up to 600%.

In the 1920s, V.H. Blackman reported his experiments with an aerial system similar to that of Laemstrom. He applied 60 volts DC/1 milliamp through 3 steel wires each 32 ft long and suspended 6 ft apart and 7 ft high on poles. The arrangement increased yields about 50% for several plant types. (6)

Wet soil improves current flow. Electrocultured plants require about 10% more water than control plants because the charged water is perspired more rapidly than under normal conditions.

A lengthy article by Dr. Charles Mercier appeared in Scientific American magazine in February 1919, presenting "The Electrification of Seeds -- A Revolution in Agriculture":

> "[T]o produce a large increase in the yield of corn and other crops, and at the same time a material improvement in quality, and to do this without any increase in the farmer's expense, without requiring any additional implement on the farm, or any newacquirement of skill, or any additional expenditure of time, on the part of the farmer -- this is nothing short of a revolution in agriculture..."

Dr Mercier neatly summarized the pros and cons of other methods of electroculture:

> "Electricity has long been applied to growing crops, and has had a decided effect upon them in producing more rapid and luxuriant growth; but to subject a plant to electricity, either continuously or at intervals during the whole period of its growth, requires a considerable supply of electricity and more or less continuous attention; to apply it over large areas of many acres must necessarily be costly, and to apply it over hundreds and thousands of acres is scarcely practicable, especially as the installation of wires, etc., must necessarily interfere with the operations of agriculture. For horticulture

> it is no doubt practicable, and may be found useful and even profitable, but the difficulty of applying it on a large scale to agriculture is evidently considerable... The electrification of seed... is open to none of these drawbacks."

At the time of writing in 1919, there were 2000 acres planted with electrified seeds. The cooperative of 150 farmers gained up to 30% increase in yield of oats and barley, and several pounds of increased weight per bushel. Electrified seed also throws up more straw, as Dr. Mercier pointed out:

> "Besides the increase in the bulk of the yield and the increase in the weight per bushel, there is an increase in the straw that may be very important. In the first place, the electrified seed throws up more straws from each seed than the unelectrified. In one field of oats the increase was characterized as "astounding" for whereas the bulk of the unelectrified seed had thrown up only two straws per seed, the electrified seed had thrown up five. In the second place, the straw growing from the electrified is longer than that which grows from the unelectrified. The straw is in some cases only one or two inches, in other cases as much as eight inches, longer; but in every case the length is increased... In the third place, and this is most important, the stoutness and the strength of the straw are increased. From this it results that the crop is less liable to be laid by storms... The process is protective against smut, bunt, rust, and other fungus diseases."

The grain is steeped in a solution of minerals and subjected to a weak current. The elemental ions and water are transported deep into the seeds, which are then dried. The selection of mineral salts is determined by the type of seed, their nutrient requirements, and the type of soil in which they are to be grown. The length of treatment, voltage and amperage are unique in each case. Barley, for example, takes twice as long as wheat or oats to absorb the optimal amount of minerals. Finally, the percentage of drying must be controlled, as every farmer knows.

The process is simple, easy to perform, cannot harm the seeds, and its drawbacks are not serious, though the results may be disappointing if the treatment is not performed properly, and the effect lasts only about a month. Therefore they must be sown promptly. Dr Mercier also noted:

> "The advantage accruing from the process is not uniform. The process always results in an increase in the yield of the seed; but whether the increase will be mainly in the grain or mainly in the straw, and what percentage of increase it will effect, are unpredictable..."

In the 1970s, Andrew Zaderej and Claude Corson received formed Intertec, Inc., to develop and market their "Electrogenic Seed Treatment" (US Patent US4302670). The Intertec system simulates a variety of atmospheric conditions are known to benefit plant development. The seeds are conditioned and

rejuvenated, resulting in more rapid germination and increased yields.

Seeds such as corn, soy, or rice are sprayed with a solution of minerals and enzymes that is implanted into the seed coat by electrophoresis. This accelerates chromosomic activity. A second exposure to high voltage negative ions increases the implantation. Then the seeds are exposed to infrared radiation in order to reduce the hard-seed dormancy and increase the metabolism of ATP.

The next stage uses an electrostatic charge to give cathodic protection. This reduces the mortality rate of seeds by providing a source of electrons to buffer the reaction with free-radical nutrient ions. Seeds must be moist when treated with cathodic protection. Dry seeds may be damaged by this treatment, but damaged seeds can be repaired somewhat if they are moistened.

Cathodic protection increases viability and germination up to 200%. The final stage of the electrogenic process treats seeds with select radio frequencies that stress the memory of DNA, charges the mitochondria, and intensifies other metabolic processes. This treatment increases the degree of water absorption, electrical conductivity, and oxygen uptake. The frequencies range from 800 KHz to 1.5 MHz with a field intensity of 3.2 W/sq cm.

The seeds need to be treated at or near where they are to be sown; for some unknown reason, the effects of electrogenic treatment apparently do not travel well.

V. H. Blackman (http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=4480384&fileId=S0021859600003440) conducted four years of field experiments on the high voltage effects on crops of oats, barley, winter wheat, and clover in the 1920s, and reported:

> “The discharge was usually given at the rate of 0·5 to 1·0 milliamp per acre from thin insulated wires stretched above the crop at a height of about 7 ft. and charged to a voltage of 40,000 to 80,000 (crest value). The discharge was usually given for 6 hours a day in two periods, 3 hours in the morning and 3 hours in the afternoon. The effect of electrification in increasing the yield of spring-grown oats and barley has thus been demonstrated. The mean increase in yield for such crops was 22 per cent.”

Post-harvest electrical treatment also can improve the quality of crops. Dennis Dannehl, et al (http://www.sciencedirect.com/science/article/pii/S0308814610013579)., for example, reported on the impressive effects of direct electrical current on secondary compounds and antioxidant activity in tomatoes:

> “Different intensities of DC (100–500 mA) with varied application times (15–60 min) were applied during postharvest. Almost all DC treatments significantly affected the secondary metabolism, resulting in an accumulation of carotenoids, phenolic compounds, and antioxidant activity in tomatoes... Optimal DC treatments were found: after an adaptation time (AT) of 2 h, the maximum contents of lycopene (122.4%), ß-carotene (140.4%), total phenol (120.0%), and antioxidant activity (126.5%) were attained with a DC treatment of 500 mA for 15 minutes. Therefore, the application of DC in harvested tomato fruits may be appropriate to improve the health-promoting properties of tomatoes.”

Electrolyzed Water

The benefits of EEC can be obtained simply by electrolyzing water and applying it in the usual manner. EW units are small, inexpensive, and easy to operate. They have much to recommend them. Electrolyzed Water (EW) is a safe and very inexpensive way to prevent fungal infection, reducing or eliminating the need for expensive, toxic chemicals. EW has been certified for organic production. Hiromu Kohno, an organic farmer who developed the use Electrolyzed Water (FEW), found that it increased milk production up to 20% and improved the healing of wounds without side effects, such as can occur with antibiotics. Horses, hogs, and poultry, etc., also benefit. Members of the Tasmanian Farmers and Graziers Association (TFGA) and the Tasmanian Institute of Agriculture have investigated the use of EW in the vegetable industry, and have found that it reduces white rot in onion crops by 95%, and eliminates potato blight and rice fungus.

Deng Lixin, et al (http://en.cnki.com.cn/Article_en/CJFDTOTAL-NJYJ201002043.htm)., have reported that EW improves the germination of Chinese cabbage seeds:

> “The acidic electrolyzed water of pH 3.30 could accelerate seeds germinating and raise fresh weight of shoots significantly; strong acidic electrolyzed water and alkaline electrolyzed water would slow down the speed of seeds germination and inhibit both germination rate and fresh weight of shoots; besides, neutral electrolyzed water have no clear effect on germination potential, germination rate and fresh weight of shoots... the results also showed that 2 hr of soaking time was appropriate; when soaking time was too short, the electrolyzed water could not have any effect, and soaking too long would have a negative effect on the seeds germination.”

According to Gao Xinhao, et al., “The optimum acidic electrolyzed water characteristics for cucumber seed soaking should be about: pH 2.40, ORP 1150mv, concentration of available chlorine 25 mg/L.”

Magnetoculture

“Magnetoculture”, as the name implies, employs magnetic fields from mineral magnetite (Fe3O4), permanent magnets, or electromagnets to affect plant metabolism. Spread magnetite in a ring around the roots, or in a north-south line. The amorphous magnetic field will enhance the germination and subsequent development to various degrees depending on the plant, growing conditions, and the type, polarity, and strength of the magnetic field.

Agronomist Yannick van Doorne (https://www.youtube.com/watch?v=S9Go7-Zd1y0) has developed a “magnetic antenna”, a cylinder filled with beeswax and magnets, wrapped with a coil, and electrostatically charged. The widgets are placed at the ends of rows plowed north and south, and connected with galvanized steel wire. The resultant crops are nutritious, and delicious, and three to five times bigger than usual since the last ten years in the same fields.”

The method invented by Pearl Eitan (Patent IL31428) calls for the application of 100 lb of magnetite/acre with an electrostatic charge. The result is “resistivity to subfreezing temperatures & insects, increased fruit size, yield, growth rates, and increased number of crops/year.”

Pest Control

Insect pest can be eradicated without the use of chemicals when they are zapped with high voltage and frequencies. The idea was tested early in the 20th century and was patented in various forms, few of which were commercialized. The “Electrovator” devised by Gilbert Baker, for example, was featured in Popular Science magazine in 1946, charged a copper rake with 12 KV of low amperage current to burn weeds down to their roots. The machines were distributed by the Avco Corporation (L.A., CA). Similar methods apply, e.g., 100-300 kV/m/10-100 microseconds (US Patent US623727).

ElectroCulture obviously holds great promise for the improvement of agriculture in all its forms, from flower pot to field. Some forms of electricity – alternating current in particular -- produce erratic effects, however, and have little to recommend them for most potential applications.

Some other forms of electromagnetism are particularly damaging, as was shown by five girls in a 9th grade class at Hjallerup School (http://mieuxprevenir.blogspot.co.uk/2013/05/denmark-9th-grade-class-experiments.html) (North Jutland, Denmark); they conducted an experiment with cress seeds exposed to two wifi routers. After 12 days, the seeds sprouted beside routers were stunted, mutated, or dead. The control seeds, shielded and in a separate room, sprouted normally.

Several videos on YouTube, produced by Environmental Radiation LLC (https://www.youtube.com/watch?v=3s_CbggV2WQ), also show the dramatic negative effects of exposure to microwave towers, “smart” meters, and other devices and types of nonionizing radiation upon plants.

The variety of methods presented here are but a few of many proven to improve crop yields and quality at little expense and without toxic chemicals. The technology has vast potential that could revolutionize agriculture and related industries, with the blessings of good nutrition for all (and more cannabis hemp).

Oats cropped in 1922 in a field without fertilisers and without irrigation, but influenced by the Electroculture apparatus.

Further Reading: A comprehensive collection of these techniques and related technologies can be found in the Rex Research Civilization Kit (http://www.rexresearch.com/1index.htm).

About the Author: Robert A. Nelson is a 10th grade dropout with no credentials. He established Rex Research in 1982 to archive information about suppressed, dormant, and emerging technologies. He persists...