MAGNA CULTURE

FIELD CROPS

PLANTER BOXES

ANTENNÆ

FENCES

World Federation Of Science And Engineering
MAGNA CULTURE

This issue is dedicated to agriculture in hopes that the combined information will be of help to the farmers of the future, of which we feel will be everyone.

With the increase in our population throughout the world and a decrease in the farming, it will become necessary for approximately 40% of the people to grow their own vegetables, that is if they want to survive.

From the beginning of time on earth, man has had the privilege of working with plants and the description of the first so called garden that was placed here came with the instructions of how to keep it in good shape and let it produce 100% for the benefit of mankind.

Yes, we are talking about the GARDEN OF EDEN. All of the exposed surface of the earth was covered with plants and the Eden that it existed in was the atmosphere; the air, moisture, and frequency that these plants grew into and in the middle of all of this was a special kind of tree that was different than the rest of the plants, and it was called the TREE OF THE KNOWLEDGE OF LIFE. Why was it called this and why was it different?

We feel that it was a system that helped disperse the many thousands of micro frequencies that are in motion throughout the atmosphere, thus giving each plant a close relation with the count of frequency it needed. This is referred to as the R.F. count in most professions that are working along these lines today. It is a known fact today that each plant has its own R.F. factor, even though they might yield the same kind of fruit they have a different count. This we refer to as each plant with its own knowledge.

Let us review some of the facts that have been recorded for the past 70 or so years from the research in this direction.
One of the greatest boons to our society would be insect control by nonchemical or semichemical methods lacking polluting side effects. It is episodic pollution that captures public attention. The recent deaths of thousands of sheep in the vicinity of a military testing ground are an example. However, within the context of the problem, perhaps more important are long-range cumulative effects produced by chlorinated organic pesticides such as aldrin, DDT, dieldrin, methoxychlor, and others. The dangerous philosophy prevails that if one cannot see, feel, smell, or taste a pollutant, it does not exist. Nuclear hazards, for example, were frequently overlooked until obvious cases of radiation sickness were reported. Here it took inventors to provide advanced instrumentation that replaced the old spirometer in this critical field.

Fossil records indicate that insects are the oldest inhabitants on earth. Ninety percent of all animals are insects. Silk, cochineal, honey, and lac are insect products. A few hundred of the 500,000 species known are harmful. Selective insect control in agriculture and peripheral fields is important to effective plant growth and yield. Although the intrinsic nature of insects is not fully understood, it appears that electronics could emerge as a controlling agent.

Insects are susceptible to ultrasonic waves and electromagnetic fields. If dense energy trains are directed at a specimen, internal heating effects tend to occur, and the animal might boil and explode. However, if gains are evaluated against costs, the fact emerges that the use of electronic methods alone is too expensive for practical applications.

By contrast, chemicals are cheap. This invites us to consider combinations of low-cost electronics with inexpensive chemicals, possibly in a catalytic sense. Enzymes, for example, act as catalysts in water, since many life sustaining compounds react only in solutions. Thus, electronic pulse trains might be directed at insect populations that have eaten catalyst-type chemicals responsive to relatively weak electromagnetic stimulation. Here, the
catalyst would give rise to abnormal endergonic states resulting in death. A normal endergonic event is the combination of carbon dioxide and water to form sugar within a living system.

A basic approach is shown in Fig. 1-1. The endergonic-type organic catalyst is applied to crops in the form of a spray. Aften the catalyst is taken up by insects 12 or more hours later, radiofrequency energy triggers it into action inside the body of the insect. Lethality will result from metabolic anomalies in populations thus radiated. The ideal spray would function as a catalyst only in small animal life forms. It would have no effect on plants per se, nor would it be harmful if not irradiated by R.F.

The following references provide a basic introduction:

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Fig. 1-1.
Radio-frequency catalyst for insect suppression.
PLANT ELECTROCULTURE

In conjunction with environmental pollution attention is directed to the nitrate pollution of agricultural fertilizers. New methods, preferable electrical, are desired to stimulate plant growth and yield.

Historically, attempts to increase the growth of plants date back to the 18th century. Dr. Mambray of Edinburgh, Scotland, apparently was the first to conduct experiments in 1746. Major experiments were conducted by Dr. S. Lemstroem in Finland in 1903. Excellent results were obtained.

Dr. Lemstroem, a professor of physics at Helsingfors, came to the belief that very rapid growth of vegetation in polar regions during the short arctic summer was to be ascribed to special electrical conditions of the atmosphere in these high latitudes. He duplicated these assumed conditions by increasing the atmospheric current, which normally passes from the air to the plant, by the use of antenna-type wires placed above the crop. An electrostatic Wimshurst machine was used for his purpose. Results were given in Dr. Lemstroem's book, Electricity and Agriculture and Horticulture, (London, 1904).

Lemstroem's work and results gave rise to experiments on an international scale, as is reflected in the following literature:


The various methods are known under the combining term "electroculture," Fig. 1-2 shows a typical electroculture system. The DC exciting voltages are determined by the height of the feeding antenna, but
usually are between 2000 and 70,000 volts. The following observations have been made:

1. The true percentage of yield increase for a good field is 45 percent maximum.
2. The better a field has been plowed, the greater is the yield obtained through electroculture. If the soil is too lean, no pronounced increase in yield can be observed.
3. Some plants do not respond to treatment unless watered. If they are watered, the yield can be extremely high. Peas, carrots, and cabbage are typical.
4. Electroculture treatment is detrimental to many, probably all, plants if conducted on warm, sunny days.
5. Overhead antenna wires should be arranged high enough to permit convenient plowing.

In the vicinity of the plant, current densities radiated by overhead discharge systems range approximately from 10-12 A/cm². Natural electrical current densities peak out between 10-16 to 10-15 A/cm². Although these current densities might appear to be extremely low, note that electroculture provides current that are about 1000 to 10,000 times higher than those given by nature. Electrometers may be used in the field to establish proper current levels. Higher drive voltages are needed to compensate for increased antenna height.

The domain of electroculture is wide open for new inventions because experiments are not complete. Specific needs for improvements reside in the area of in-field high-voltage generation and application.

It is of interest to realize that plant electroculture, in spite of its excellent promise, was relegated to dormancy by the advent of inexpensive nitrate fertilizers. Here we have a typical case in which a once-fabulous invention in chemistry commenced to dig its own grave (and perhaps ours, too!)
PSYCHOGALVANIC EFFECTS IN LIVING PLANTS

Although living plants normally are not regarded as more than edibles or raw material for construction purposes, new inventions and experiments are needed to determine their sentient properties.

Early in 1966, polygraph expert Cleve Backster of New York created the background for an entirely new science by accidental discovery. Employing the same kind of polygraph (lie detector) that is used to test emotional stimulation in human subjects, Backster found that plant specimens register fear, apprehension, pleasure, and relief. Further, by using simple electronic methods, it was found that plants react not only to overt threats to their state of well-being, but even more stunningly, to the intentions and feelings of other living creatures, animal as well as human, with which they are closely associated.

It could be shown, for example, that simple house plants, such as the Dracaena Massangeana or philodendron, register apprehension when a dog goes past them, react violently when live shrimp are dumped into boiling water and apparently receive signals from dying cells in the drying bolld of an accidentally cut finger. Plants even appear to respond to distress signals over a considerable distance.

The immense importance of what is now referred to as the "Backster effect" need not be underlined. The phenomenon offers entirely new possibilities to inventors and research scientists, typically in areas of communications heretofore closed to us.

The overall aspects of the "Backster effect" were profiled in the following publications:


The effect continues to be verified both here and abroad. Its action cannot be blocked by Faraday screens, screen cages, lead-lined containers, or other shielding structures positioned between the plant and external test objects. Therefore, the phenomenon cannot be added to the inventory of electromagnetic domains established by classical physics.

How does the effect come about? Unfortunately, there are no concise answers at this time. The field is too new. However, the effect has a psychogalvanic character and can be verified by instrumentation batteries. A typical test system is composed of a variable Wheatstone bridge, a dc amplifier, a Faraday cage for the plant specimen, and graphic recorder for collecting data in a permanent manner.

In operation, the cage-contained plant is connected by a simple, leaf-attached clamp electrode to the Wheatstone bridge, and the readout system is energized. Then, by mentally projecting physical harm against the plant, response curves may be elicited. However, if the treat is not followed up by physical action (like burning, for example), the plant tends to adjust to these "idle threats" and ceases to respond. Response profiles are not uniform, changing from one specimen to the next. No responses and/or delayed reactions occur in many cases, all of which are imperfectly understood.

As a guide to inventors, the following equipment systems, approaches, and scientific considerations are offered as practical aids:

1. To avoid industrial and domestic electrical interference, electronics-oriented experiments with plants should be conducted in shielded enclosures such as metallic greenhouses. If, however, such a structure is too costly, an inexpensive wooden design may be used. Here, interference can be attenuated by attaching metallic screen wire to the walls, bottom, and ceiling of the greenhouse. Note that light must be permi-
tted to enter, since it is vital to photosynthesis. If a given Faraday-type enclosure is totally opaque, artificial illumination must be provided. If lamps of the fluorescent type are employed, light must enter through a meshed metal screen securely grounded to a water pipe. For information on lamps designed explicitly for living plants, contact:

Commercial Engineering Department
Lighting Division
Sylvania Electric Products Inc.
Salem, Massachusetts
Request bulletins 0-262 ("Gro-Lux" fluorescent lamp), 0-285 and 0-286. The visible light spectrum required by plants for successful chlorophyll synthesis is between 4000 and 4800 angstroms, effective values peaking out at about 4500 angstroms.

2. For field operation involving testing of plants, psychogalvanic equipment must be housed in rugged, shielded containers. This requirement is especially stringent in those cases in which susceptibility tests are performed adjacent to power lines, populated areas, or automotive service stations generating voltage transients. Electrically, plants may be regarded as organic semiconductors and, regardless of size, have orthodox antenna functions.

3. For dependable experimental results, new virgin plants may be used. Fresh cultures may be started conveniently from packaged growth kits such as "Punch'n Grow" provided by Northrup, King & Co., Minneapolis, Minnesota. The kit contains seeds and soil material in a plastic container. Its cover may be punched with a blunt tool, and water may be added for seed activation.

4. In conjunction with item 3, seeds may be stimulated and raised into the seedling stage under the influence of weak radio-frequency fields. Apparatus for this purpose should operate below a wavelength of 10 meters. For information on RF stimulation of seeds, perusal of the following reports is suggested.

![Diagram](A) Basic method.

![Diagram](B) Yield patterns.

**Fig. 1-3.**
Stimulation of seeds by RF methods.

In the high-power stimulation phase, RF energy is applied for fractions of a second. According to the scheme shown in Fig. 1-3, seeds are contained in a plastic sack or bowl and placed between application plates connected to the RF generator tank circuit. This process is most critical and should not be attempted without background studies.
In the low-power stimulation phase, RF currents in the micro-ampere or milli-ampere range are applied to a planted seed specimen. Apparatus is shown in Fig. 1-4. The blower-cooled RF generator to the left feeds energy into an interval switch at the bottom of the quasi-Faraday cage. A nutrient feeder for seedlings, seen at the upper right of the illustration, furnishes weak auxin-type solutions or other growth hormones.

Because of its radio-frequency character, equipment of this type must always be operated within an electromagnetically shielded facility such as those outlined in item 1.

As an experimental adjunct to RF methods, seeds also can be stimulated successfully by ultrasonic processes. A research paper on the ultrasonic treatment of corn seeds is available from:

U. S. Department of Agriculture
Washington, D.C. 20250

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A piezoelectric-type ultrasonic generator is shown in Fig. 1-5. Operating at frequency of 165 kHz, the instrument requires no rectifier and drives the crystal at a power of 17 watts.

In the ultrasonic mode, seeds to be treated are placed in a sieve-type metal container and placed in a water bath agitated by ultrasonic waves. Frequencies up to 900 kHz have been used. According to reports, ultrasonics are yield-stimulating; i.e., seeds treated by this method germinate better than controls and render more produce. However, within the context of the current problem, the method is suggested primarily in order to grow virgin plants fast for experimental purposes. As in the case of RF methods, no information is available on the RF or ultrasonically stimulated plant properties differ in the expression of psychogalvanic phenomena in connection with the "Backster Effect."
5. To commercialize an invention in this area, given equipment should be small and functional. Being a "discovery tool" for others (including students, engineers, gardeners, hobbyists, etc.), new psychogalvanic circuitry should be developed to display plant reactions with the least possible expense.

Fig. 1-6 shows one approach. A current-controlled oscillator (Fig. 1-6A) forces a weak excitation current through a plant leaf via a clamp electrode (Fig. 1-6B). Variations in the conductance properties of the plant, which may be regarded as an organic semiconductor, will "steer" current-sensitive oscillator stage Q1. Thus, overall action is similar to that of Fig. 1-6C a Wheatstone-type detector principle.
Arranged on a tripod, the plant response detector might feature an elevated clamp electrode mounted on an extension inserted into the instrument proper. Thus, plant structures can be reached and observed as desired. During operation it is imperative that the electrode fixture does not move. Movements or bending of leaves inserted into the clamp electrode produce undesirable strain-gauge effects and impair the quality of psychogalvanic data.

In conjunction with this and related equipment, the inventor should realize that plant reactions, if any, cannot be predicted in advance. Fire (injury by acts of burning) is the most powerful stimulant a plant can experience. It was the mental projection of this very threat that led Mr. Backster to the discovery of the effect named after him. By contrast, the act of cutting can bring somewhat delayed reactions. Electrical plant behavior triggered by direct application of force produces well-known responses, typically as investigated in a specimen like the Mimosa Pudica. Data and directions for experiments may be found in the following reference:


The function of organic semiconductors, if considered alone, is discussed in good depth in:


The behavior of living systems exposed to stimulus and excitation is given in the book:

G. Ungar, Excitation (Springfield, Ill.: Charles C. Thomas, Publisher, 1963).

An excellent description of electron transport systems in plants has been given by Walter D. Donner, Jr. of the University of Pennsylvania. His contribution may be found in:

W. A. Jensen and L. G. Kavaljian (ed), Plant Biology Today: Advances and Chal-
All things considered, the psychogalvanic effect in plants is one of the very best vehicles for dramatic new discoveries and instumants available to inventors today. The effects of these phenomena on science and industry no doubt will be considerable and of immense value to society at large. To that end, it is hoped that definitions of the various aspects involved point ways from which to start.
GROW IT YOURSELF

The enthusiasm for home gardening that sprang up in America three or four years ago amid fast-rising food prices has taken firm root.

For the first time since World War II, more than half of all U.S. households, 51 percent, plan to have a vegetable garden in 1976. That's the finding of the Gallup Poll.

Again this spring, business is booming in seeds and fertilizer, with supplies of both reported plentiful. Tools, such as mechanical soil tilers, are readily available, sometimes at bargain prices.

All signs indicate, too, that there will be plenty of lids for canning jars this season. A survey by the Department of Agriculture finds that the industry expect to double its production in 1976.

FAVORITE VEGETABLES

In many parts of the country, tomatoes appear to be the most popular vegetable, followed by leaf lettuce and squash of all varieties.

William Foos, president of Ferry-Morse Seed Company in Mountain View, Calif., reports that early shipments of all kinds of seeds are up "a little over last year, when we had record sales."

At the Northrup King Company, in Minneapolis, Vice President Howard Schuler says inquiries about gardening are running 5 percent higher than last year. He estimated that home gardening will expand by about 2 percent this year.

A shift from days gone by is noted by Mr. Schuler, who says that those gardening now are not primarily the impoverished people trying to save money, but middle class suburbanites who want a hobby.

W. Stanley Stuart, Jr., vice president of Ball Corporation, at Muncie, Ind., estimates that there will be about 35 million home vegetable gardens during 1976, up from 32.5 million last year.
Moreover, Mr. Stuart says, about 41 percent of all American households will do some home canning in 1976, up from 37 percent a year ago.

To meet this expected increase, Ball officials have geared manufacturing operation to produce 65 percent more replacement caps and licks than were shipped out last year. The company's plants will continue to operate three shifts a day, seven days a week, as they have since January, 1975.

Supplies of gardening equipment are reported plentiful, with some at lower prices this year.

A. A. Malizia, president of McDonough Power Equipment, Inc. at McDonough, Ga. explains:

"There are plenty of soil tillers. The industry overproduced by 30 to 35 percent last year, so there are a good many carry-overs on the market. You can make some good buys.

FRESH DIRECTIONS

Among the latest trends in back-yard gardening cropping up this spring:

Built-up gardens are gaining advocates. Railroad ties or bricks are often used as a low wall to raise the soil level by a foot or two. Advantage: It's easier to work, the drainage is usually improved, and it easier to build the soil to the desired richness in such a confined area.

Drip irrigation, in which moisture is slowly metered out to plants by means of a drip hose system, is becoming more popular.

Soil testing is becoming a standard procedure for most new home gardens, often through county or State agricultural offices for a small fee of $3 or so. However, says Huey Whitehurst of Texas A & M's Dallas experimental station: "These are not really necessary, particularly after a couple of years, when you've gotten your soil built up with organic matter and fertilizer."
Moisture meters, used initially for indoor plants, are being installed in some outdoor gardens to measure the amount of moisture in the ground and indicate when watering is needed.

Container gardening is catching on with apartment dwellers. Instead of flowers, these gardeners are raising vegetables in hanging baskets, in containers on stairways, on trellises and in window boxes.

Gardening in a bucket is among the more original concepts. Milton Smith Burgess, Sr., a retired meat packer in Little Rock, Ark., last year planted 22 different vegetables in 90 containers, ranging from 5-gallon paint buckets to big garbage cans.

Mr. Burgess's technique is simple. He filled the buckets with leaves, threw in some lime and fertilizer, and topped it all off with about two inches of peat moss. "It's really easy," he explains. "All you have to do is add about a quart of water each evening and then just sit back and watch things grow. With peat moss, there are no weeds. Also, I don't have to spray for insects."

From 12 buckets of plants, he produced about 1,600 tomatoes last year. Another 16 buckets with five stalks of corn in each yielded enough to last all summer. His wife canned 50 quarts of cucumber pickles. This spring he is increasing his garden to 110 buckets.
The WORLD FEDERATION OF SCIENCE & ENGINEERING has, as one of its major projects for the past two years, been doing quite an extensive bit of experimenting with what we have named MAGNA CULTURE.

The head of the project is Dr. Norman Kellogg and due to his dedication to the project we have had some very outstanding results from the various arrangements for plant environment, and we have proven to ourselves and to a few other interested parties, that each plant is a living creature with its own type of intelligence and that the greatest restriction to life is its inability to move around and seek out the type of surroundings that would help it have a better environment to exist in.

There are three things that are very important to all types of plants: First is nutrition, make sure the soil has all the normal nutrients that are needed. Second is moisture, now when you are watering your plants make sure that you do not over do it, or that you do not under do it, make frequent checks to see if the moisture is up to about an inch from the top of the seed bed, if it is dry deeper than one inch it should be watered.

The third is frequency, if a plant does not receive enough R.F. count from the ground and the atmosphere, (and it takes both), then it will not mature properly it will only yield around 30% of its potential. That is why most farmers only expect about 30% to 40% of the potential of each plant, quite a waste, don't you agree.

Our research has proven that by putting Antennae up at certain locations, we can enhance the environment enough to allow the plant maximum R.F. count to draw from thus giving us close to 100% yield from all types of bearing plants.

Have you ever wondered why plants grow larger and faster along a wire fence. The fence is acting as an antenna. The fence will enhance the frequency up to four or five feet on each side of it and if you dig down below the surface of the soil on each side of the fence you will also find that the moisture count in the soil is greater for about the same distance. Yet about 15 or 20 feet from the fence
you will have to go down five or six times as deep to find the same kind of moisture.

Another observation that gives you some idea of what higher concentration of frequency can have on the hydro count is to set a car next to the metal poles that hold the high tension wires that run across country, and park another car about two blocks away. When you come back in the morning the car under the high tension wires next to the pole will have moisture on the windows, which the one two blocks away will not.

This should give you some idea of what frequencies can do. The atmosphere is loaded with millions of frequencies and they are being used daily. The funny thing is, that we are totally unaware of how much traffic is going on all around us. Another thing that is amazing, is that we are only using about 2% of this traffic.

With MAGNA CULTURE, we can use a small amount of these frequencies, we do not need them all, as long as we can attract some of them it will give the plants a much stronger flow to draw from and since each plant is a knowledge in its own, it will only use what it needs.

Some of the drawings and pictures on the next few pages will give you some idea as to how you can get better results from your plants, of course, it does not mean that this is the total answer. If you can experiment with your own arrangements and get better results, please do so and let us know what your results are.
The MAGNA CULTURE antennae recharge the minerals in the soil used by the plants or trees, using the frequency of the EARTH'S ETHER FIELD.

PLANTS AND VEGETABLES

GROUND LEVEL

Prepare ground as for normal planting, fertilizing evenly.
Regular metal coat hangers may be used or any other type of metal wire. All paint or coating should be removed.

Reshape coat hangers for antennae, as above.

Insecticides should not be needed as much, as destructive insects do not like the frequency put out by the coils. Constructive insects, such as Bees and Earth Worms are not bothered. In fact, Earth Worms thrive under MAGNA CULTURE conditions, as our experiments have proven.
FRUIT TREES

When also fill pipe with water.

Always be careful not to allow the antenna wires to touch the leaves of the plants or burning could result.

FENCES BECOME ANTENNA
Planter box may be any size convienent for area available. Trellises can be attached for climbing plants – Peas, beans, tomatoes, etc. They may also be used indoors with Grow Lights.

Coils should be cleaned twice yearly. To do this imerse in a pail of hot water in which $\frac{1}{2}$ box of soda has been dissolved.

North of the Equator the coils should be COUNTER CLOCKWISE.
South of the Equator CLOCKWISE.
We do not recommend that you use commercial fertilizers, they are loaded with artificial junk. Plants are living cells of their own and it is not natural from a common sense direction for us to feed our plants something that we know is unhealthy.

If you will look at the labels on any of your commercial artificial plant fertilizers you will see that they give you a danger precaution that it is dangerous to your health, but we don't seem to realize that even after we feed it to our plants and then we eat the fruit of that plant, that it may still be dangerous to our health.

Take these three items and run them through your mind. NITROGEN, PHOSPHORUS, and POTASSIUM. That is the main ingredients of artificial fertilizers, would you sit down to a table with a plate full of these so called life giving items?

For the past 30 to 40 years, our agriculture systems have grown to depend on the commercial fertilizers to the point that 98% of our farming is artificial. Now let us take some figures from another direction and see if we can still add 2 + 2 and come up with 4.

During this same period of time we find that there has been a tremendous increase in three of the most disabling diseases that are known to man. Number one is Heart Conditions, number two is Arthritis Conditions, and the third is the most baffling of all - CANCER. I am not a medical doctor, but I do feel that once medical research finds a way to counteract the effects of what the chemical reactions of these artificial poisons are to the human body, they just might come up with an antidote.

Through our research we have proven to our own satisfaction that by getting back to basics and using natural organic fertilizers we have much healthier plants and feel healthier ourselves.

There is more waste that comes out of the kitchens of most homes than it would take to farm half the land the country has. To name some of the items that could be reused: old breas, coffee or tea, vegetable waste, citrus peels, old shopping bags or newspapers, yes old newspapers, just shred it up and mix it into the soil with all the rest of the left overs.
With a good system of recycling your normal organic waste and using the MAGNA CULTURE system of enhancing the frequency count around your garden, you can get back on the right track to good health.

One of our Service Members just brought us a book that is an outstanding piece of research. We recommend you read it, not only is it a good book on plant life but it is very good on basically what life is all about. Read it:

Title: "THE SECRET LIFE of PLANTS".
By: Peter Tompkins & Christopher Bird.
Pub.: AVON.

Found in most Bookstores.

We also recommend, "ORGANIC GARDENING & FARMING", a monthly magazine found usually at the local Newsstands or Drugstores.

We have talked quite a bit about what the frequencies that we exist in can do for plants. So be prepared, because in our next issue we will cover what frequencies can do for the human body.

The next issue will be in September 1976. If this is the first issue of the NEW AGE SCIENCE JOURNAL that you have read, then you may be interested in the first, it was published in March '76.

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