



rexresearch.com

ElectroCulture Patents #3

See also: [CORSON & ZADEREJ : Electrogenics](#) ** [ElectroCulture](#) ** [ElectroCulture Patents](#) ** [ElectroCulture Patents #2](#) ** [MagnaCulture](#) ** [Electro-Culture #1 \(PDF \)](#) ** [Electro-Culture #2](#) ** [Electro-Culture #3](#) *

FR2798252

Device for germination and treatment of seeds, or plants and other vegetables by high frequency pulsed electromagnetic waves

2001-03-16

Inventor(s): NGUYEN JOCERAN

Abstract -- The device has an electronic circuit (2) which produces high frequency pulses. The circuit (2) is connected to an electro-magnetic field emitting aerial (3). the whole being connected to an electrical supply. The device can be fitted into a seed box, see Figs 1,2, for seed germination or attached to a row of vines where the support wires act as aerials.

MD3790

Process for treating corn seeds with reduced germination

Inventor: CORLATEANU LUDMILA [MD] ; MASLOBROD SERGHEI

2009-01-31

Abstract -- The invention refers to agriculture, particularly to a process for presowing treatment of corn seeds. The process for treating corn seeds with reduced germination includes their electromagnetic irradiation with millimetric waves having a length of 5,6 mm, at the power density of 6,6 mWt/cm² and the exposure of 2 min. The result of the invention consists in increasing the growth and germination energy of seeds.

RU2321981

METHOD FOR DESINSECTION AND DISINFECTION OF MATERIALS OF GRAIN ORIGIN

Inventor: LEONT EV IGOR ANATOL EVICH [RU] ; LYSOV GEORGIJ VASIL EVICH

2008-04-20

Abstract -- Method includes creation of re-circulating gas stream in discharge chamber, injection of UHF energy, creation of plasma in chamber volume and letting material being processed through the chamber in form of free-falling stream. The UHF energy for creation of plasma is injected in impulse or in continuous modes in form of three electromagnetic waves, two of which have orthogonal linear polarization, which is perpendicular to the discharge chamber axis, and third wave has axial component of electromagnetic field,

and the material is additionally affected by modulating at least one electromagnetic wave with impulses with frequency of repetition within ultrasonic spectrum. Duration of impulses equals 1-5 microseconds. Also, modulation frequency changes continuously in aforementioned ultrasonic spectrum with period of 0,01-0,02 seconds, and constant electric current is additionally let through plasma equipment. ^ EFFECT: prevented infection of grain by barn billbug, suppressed bactericide infectiousness and increased germination capacity of grain.

CN201018769

High voltage pulse constant magnetic field seed instrument

Inventor: JIANPING XIONG [CN] ; YUNLIANG FANG
2008-02-13

Abstract -- A seed instrument with high voltage pulse static magnetic field, the positive electrode and negative electrode output ends of the high voltage pulse signal power source device [1] are respectively connected with two Helmholtz coils [3] which are similar in structure, uniform in size by power source cord [5]. A pulsed magnetic field or a uniform magnetic field can be formed between the two Helmholtz coils. The two coils [3] are clipped by two circular insulating boards [2] which are fixed by a bolt [6]. The coil [3] comprises a silicon steel sheet core [4] which is a cylinder, enamel wire layers [7] and cyan-shell papers [8]. The enamel wire layers [7] are isolated by the cyan-shell papers [8] and wound on the exterior circle of the silicon steel core [4]. The utility model is simple in structure, feasible in maneuverability, lower in cost and can create a manually controlled electromagnetic environment for plant growing which can improve the germination effect of the seed, make the seeding emergence stronger, shorten the growth period, enhance the antiviral ability, make the branches more leafy and the fruit bigger, therefore attaining the purpose of promoting plants in high quality and yielding.

EP1676815

Electromagnetic treatment process for liquids

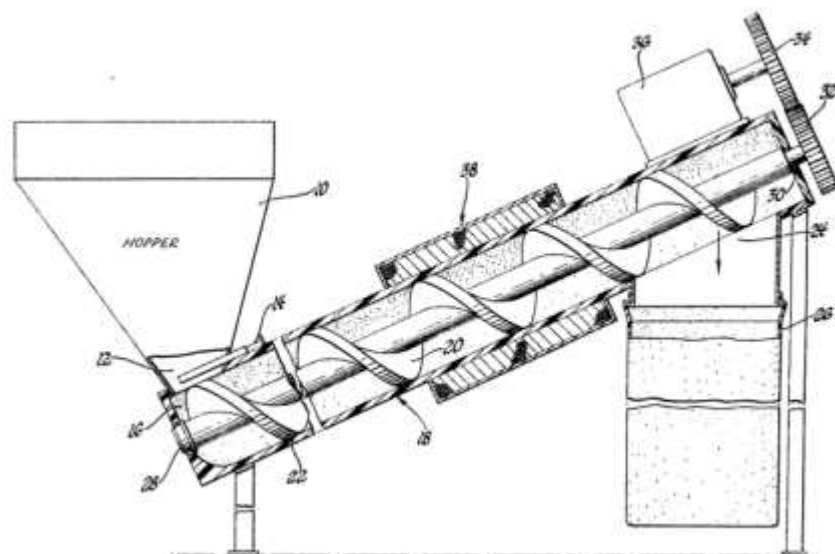
Inventor: THUT WALTER [CH] ; VALETTE ERIC
2006-07-05

Abstract - The electromagnetic fields emitted from reels and antennas placed center of a tank, basin or ground water level and show tension, current, pulsation, signal shape and resonance frequencies of chemicals. The characteristics of the liquid are used for acceleration of germination, plant growth, diseases resistance, eutrophication and oxygenation of water, inhibition of microorganisms, separation of solid/liquid, decantation, filtration, centrifugation and aggregation of colloids. The chemicals are oxidizing, coagulating and flocculating agents, nutrients and pesticides. An independent claim is also included for application of electromagnetic process.

GB1271545

APPARATUS FOR MAGNETICALLY TREATING SEEDS

Inventor: AMBURN RAYMOND DEVON
1972-04-19

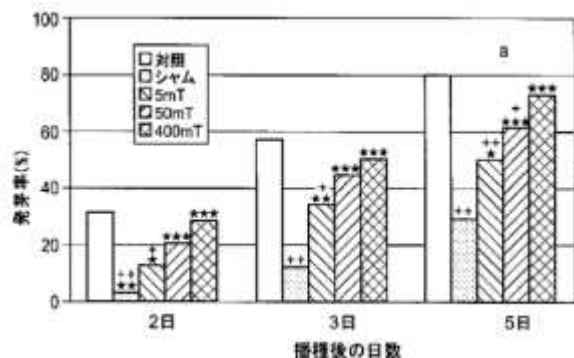


Abstract --Treating seeds to increase germination speed. The germination speed of seeds is increased by moving the seeds in a helical path through a magnetic field, or other field produced by a source of electric, magnetic or electromagnetic energy. As shown, a screw conveyer 20 conveys the seeds from an inlet chamber 16, which is supplied by a hopper 10 via a control slide 14, to an outlet chamber 24, the seeds being caused by the centrifugal force to move in a helical path along the inside wall of a plastic tube 22 past an electromagnet 38 surrounding the tube, so as to be subjected to a magnetic field while the seed is both moved in a helical path and is at the same time rolled to expose several surfaces of the seed to the field. The treated seeds are collected in a collector 26. The electromagnet 38 may be replaced by electric field generating means, or by X-ray, high frequency, microwave or other electromagnetic field generating means.

JP2004089207

METHOD FOR SUPPRESSING DECREASE OF GERMINATION RATE IN STORAGE TIME OF PLANT SEED

Inventor: MIYAKOSHI JUNJI ; TAKIMOTO KOICHI
2004-03-25



Abstract -- a method for suppressing decrease of germination rate in storage time of plant seed. ;
SOLUTION: The method comprises storing the plant seed under a condition of exposing the seed in an electromagnetic field of 50-60 Hz frequency so as to suppressing decrease of the plant seed germination rate under a storing condition of a high temperature and a high humidity.

JP2004135638

METHOD FOR SUPPRESSING GERMINATION OF GARLIC

Inventor: SUGIYAMA TAKEO ; SUGIYAMA KAZUO

2004-05-13

Abstract -- PROBLEM TO BE SOLVED: To solve the problem of the difficulty in year-round planned shipping of garlic caused by the sudden retire of a germination suppressing agent represented by 39% solution of maleic hydrazide for suppressing the germination of garlic. ; SOLUTION: The sprouting part and the root part of a garlic are subjected to predrying treatment at ≥ 30 [deg.]C for ≥ 3 days after harvest and irradiated with continuous or pulse electromagnetic radiation to suppress the germination of the garlic. The germination of garlic is suppressed relatively easily at a low cost simply by treating the sprouting part or the root part of garlic with electromagnetic wave harmless to food or with ethyl alcohol known as a safe additive. Furthermore, the germination suppressing treatment of garlic is carried out by specifically combining the hitherto separately performed dry-heat treating storage with the cold storage and finding the optimum storage condition. ; COPYRIGHT: (C)2004,JPO

CN1383710**Electromagnetic-field plasma seed processing machine**

Inventor: WU CE

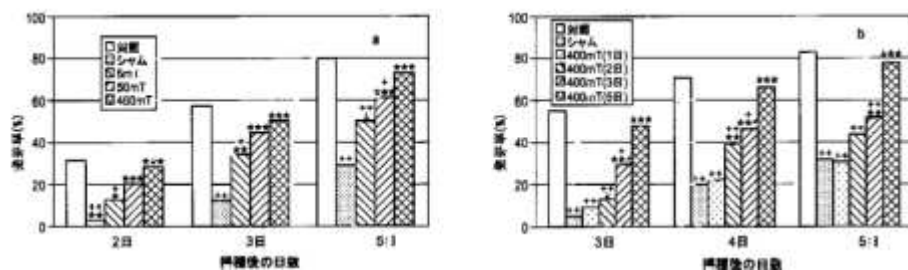
2002-12-11

Abstract -- In the electromagnetic field and plasma seed processing machine, the radiation chamber has inlet in the upper part, outlet in the lower part and plasma generator connected to electrical controller inside it. The plasma generator is a glass tube filled with mercury vapor and has wire connecting ends at two ends. The present invention has simple structure, is easy to operate, has powerful bacteria and virus killing effect and can activate the inner growth genery of seeds to result in raised germination potential and germination rate of seed and raised yield and nutritive components of crop.

JP2002191205**METHOD FOR SUPPRESSING DECLINE IN GERMINATION RATE OF PLANT SEED**

Inventor: MIYAKOSHI JUNJI ; TAKIMOTO KOICHI

2002-07-09

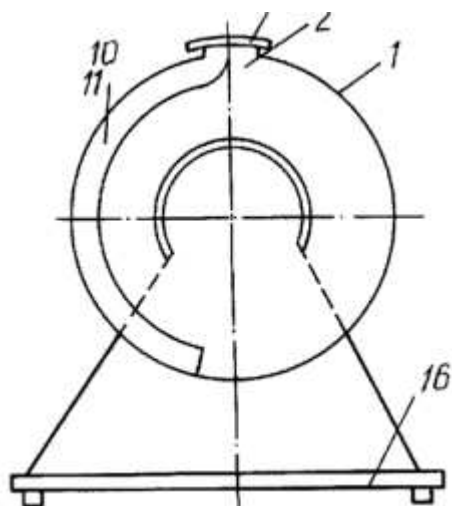


Abstract -- PROBLEM TO BE SOLVED: To provide a method for enabling plant seeds to be preserved under such a bad environment as high-temperature humid condition without causing their germination rate to decline. SOLUTION: This method for suppressing decline in the germination rate of plant seeds is characterized by comprising preserving the seeds under exposure to an electromagnetic field.

RU2185714**SEED TREATMENT METHOD AND APPARATUS**

Inventor: MOROZOV G A ; VEDERNIKOV N M

2002-07-27



Abstract -- Method involves exposing seeds to electromagnetic microwave field while subjecting seeds to turbulent mixing in cavity resonator with mechanical ventilation system; additionally exposing seeds to electromagnetic field of millimeter wave band. Exposure to said fields is performed in cyclic periods at suspended state of seeds. Apparatus has cavity resonator mounted on hollow axle shafts for rotation. Paired opposite ridges are arranged inside cavity resonator. Axle shafts are equipped with vent channel and microwave emitter connected to microwave generator. Apparatus is further equipped with millimeter band wave generator and related emitter, and with control unit connected to both generators, mechanical ventilation system and cavity resonator rotational drive. Method and apparatus are used in forestry and agricultural enterprises for presowing seed treatment. EFFECT: increased efficiency and improved lodging resistance of sprouts at early germination stages.

RU2179792

SEED TREATMENT METHOD

Inventor: BARYSHEV M G ; KAS JANOV G

Abstract -- Method involves prior to sowing, exposing seeds to electromagnetic field with phase-modulated vibrations of extremely low band for 40-60 min at field strength of 120-1,400 A/m. Method is used for presowing treatment of farm crops. EFFECT: increased seed germination and improved efficiency.

RU2175826

METHOD FOR TREATING SEEDS

Inventor: BARYSHEV M G

2001-11-20

Abstract -- Method involves treating seeds with electromagnetic frequency-modulated oscillations field in extremely low frequency bandwidth before seeding during 40-60 min under field intensity of 120- 1400 A/m. EFFECT: improved seed germination.

RU2134944

METHOD FOR TREATING AGRICULTURAL CROP SEEDS

Inventor: MAGEROVSKIJ V V ; KUTSENKO A N

1999-08-27

Abstract -- Method involves exposing seeds to low-frequency electromagnetic field with following treatment with red laser radiation. EFFECT: increased germination of crops by bioresonant presowing stimulation of seeds. 2 dwg

DE19605650**Treatment or stressing of biological substances with microwaves in presence of water vapour**

Inventor: LUECKE WOLFGANG PROF DR [DE] ; HOERSTEN DIETER VON
1997-06-26

Abstract -- A method extracts materials from biological substances and may be used to treat seeds and propagating materials to kill harmful micro-organisms. The treatment zone is irradiated by oscillatory electromagnetic energy at microwave frequencies, in the presence of steam or a mist of water vapour. The energy field is homogenised, and controlled to keep the material above a minimum specified temperature, and preferably evened-out closely above the incipient dew point. Also claimed is use of the method for controlled stress induction in seed and propagation material for limited, targeted reduction of germination potential and/or growth energy and vitality.

BG97028**METHOD FOR PRESOWING CULTIVATION OF TOMATO SEEDS**

Inventor: PARASKOVA PAVLINA G [BG] ; STOJANOV MILKO
1995-03-31

Abstract -- The invention is related to a method in which, by single effect on the seeds, their germination, and consonance and dynamics of springing up is increased. It includes the formation of a product layer of seeds up to 12 mm thick which is irradiated by electromagnetic (CB4) waves at 2450 MHz, 150 W at 15% and at exposure time from 210 to 820 sec. or power 300 W 10% at exposure time from 45 to 130 sec. The seeds can be packed or unpacked, with moisture content 7.5-8.5% and germination (estimated) over 85%.

CN2122006**DIELECTRIC SEEDS GRADER**

Inventor: SHUANGSHAN ZHU [CN] ; XIN QI
1992-11-18

Abstract -- The utility model relates to a dielectric seeds grader through which the seeds can be graded and separated according to the activity of the seeds. The utility model is characterized in that the seeds are scattered on a dielectric roller whose surface is wound with a conducting wire through an electromagnetic vibrator and a seed guiding sliding plate; the conducting wire is connected with an alternate current voltage regulator through an electric brush, and is supplied with the alternate current which is from 1000V to 5000V. The surface of the roller grades the seeds having different activities according to the dielectric property of the seeds. The seeds grader using the dielectric roller as a grading component has the advantages of high grading purity and low energy consumption; the seeds can not be damaged; the seed germination rate can be improved during grading.

JP2046202**TREATMENT IMPROVING GERMINATION PERCENTAGE OF PLANT SEED**

Inventor: HAYASHI HIDEAKI ; YATO MINORU
1990-02-15

Abstract -- PURPOSE: To activate inner texture of seed in dormancy and improve germination percentage of plant seed by irradiating electromagnetic wave to seed and making variation of intermolecular polarity of high frequency to the seed. CONSTITUTION: Seed to be subject as a dielectric body are irradiated with electromagnetic wave in a season approaching to sow the seed and many times of variation of intermolecular polarity are given to seed coat, embryo and endosperm of the seed. As a result of the

repeating stimulations, permeability of the seed coat is increased and growing action of embryo and endosperm thought as in dormancy is awoken. Thus, whole seed is activated and a seed having stable germination percentage is obtained.

FR2580897

Method and device for a biophysical treatment unit with resonance reagents intended to optimise and accelerate the processes of plant germination and growth

Inventor: TESSIER MICHEL

1986-10-31

Abstract -- The reagent in the device is a colloidal fluid with ferromagnetic properties, receiving high energy plasmas by means of a pulsed wave generator, in a magnetic field, together with highly dilute solutions of essential oils incorporated in the treatment water, this water passing into a full-wave AC and DC electromagnetic field, then being treated using an electrode connected to a multi-oscillatory high frequency generator with an electromagnetic field being superimposed on the AC electric field, equipped with a flexible plate multiple capacitor containing a biological dielectric, also connected to a pick-up antenna comprising a so-called exterior antenna with 12 horizontal elements terminating in dishes and fixed onto a support insulating them from each other and a so-called interior antenna made of vanadium,; connected separately by means of a 15-core shielded cable (each core being about 1.5 cm<2>), to the flexible plate multiple capacitor and to the pick-up electrodes, one of which is also in the capacitive return circuit loading the water treatment reservoir, as well as transmitters of high energy fields comprising a double spiral antenna efficiently transmitting a very high level of energy per square centimetre connected to an electronic oscillator. Designed particularly for the faster production of commercial plant products in agriculture.

GB417501

Process for altering the energy content of dipolar substances

Inventor: James Y. Johnson

Applicant: TERNION AG

1934-09-28

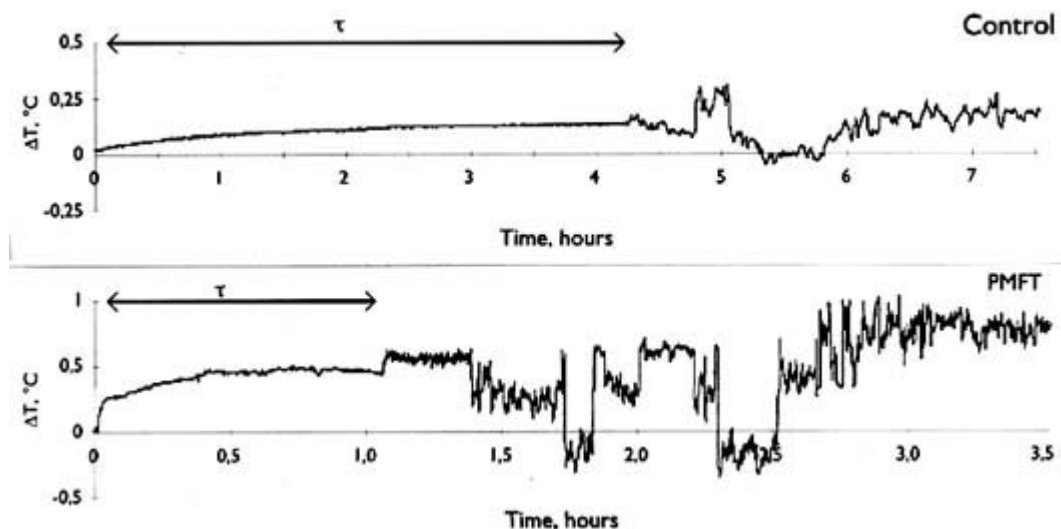
Abstract -- Changes in the energy content of dipolar substances are produced by exposure to a concentrated electromagnetic field having one or more frequencies corresponding to wavelengths between 3 mm. and 6 metres approximately and equal to characteristic periods of the substances treated. The process applies to naturally dipolar substances and to those in which dipoles can be induced by a field. The characteristic periods of the substances are of three kinds depending respectively on (1) the relaxation time of the dipoles when orientated by the field, (2) the natural oscillation-period of the dipoles, (3) the term-difference frequencies of the atoms. They are associated with anomalous variations in the optical and dielectric properties and can be found by examining those properties in a field of varying frequency. They can be varied within limits by changing the temperature, pressure, concentration, &c., and may thus be adjusted to correspond exactly with a field of approximately correct frequency. The fields may be standing ones produced between conductors such as concentric tubes or the plate resonators described in Specification 417,564, or radiated fields concentrated by reflectors. They may comprise several different frequencies and constant electrostatic fields may be superimposed on them. The exposure may be continuous or intermittent and different frequencies may be applied in succession. The invention is not concerned with the production of merely transitory effects and temperature changes, but with more permanent physical and chemical effects of which the following are examples:-- Colloidal dispersions and emulsions are stabilised or further dispersed by short exposure but prolonged treatment produces coagulation. An agar-agar gel exposed to a field of 116 cm. wavelength increases in mobility after 10 minutes and becomes more viscous after several hours. Crystallization is stimulated by the use of a varying field. Preservation of organic materials is effected preferably by intermittent exposure, e.g. veal after 3 minutes treatment with a field comprising four selected frequencies remains fresh for 2 weeks, or

longer if further exposure to a weaker field is given for 5 minutes in each hour. Milk and apple juice may be similarly treated. Medical diagnosis and treatment. Cell-division may be stimulated and other beneficial effects produced in living bodies. The method of determining the characteristic frequencies of the constituents of a living body provides a means of diagnosis. Fermentation processes and other processes involving bacteria may be modified by influencing the bacteria or their nutrient medium. **Germination of seeds may be accelerated. Bean seeds previously swollen and exposed for 30 sec. to suitable fields germinate twice as fast as untreated seeds.** Electrets may be produced by subjecting a fluid dielectric to a field and then solidifying it by freezing, evaporation, or coagulation. Medicines for internal and external use may have electrets incorporated in them, the electrical energy being released upon their application. A plaster comprising euphorbium powder, fine resin, yellow wax, and turpentine may be exposed at 85 DEG C. to a field of 235 cm. wavelength and then cooled to 15 DEG C. Disinfecting pastilles comprising beeswax and gums and the usual drugs may be similarly treated. Photographic plates may be rendered more sensitive especially in the red and infra-red by exposure to the fields. Chemical reactions may be promoted and facilitated. Examples are: (1) the conversion of acetylene, steam, and ozone into acetic acid and acetaldehyde without a catalyst; (2) the drying of lacquers and varnishes; (3) the consolidation of styrol; (4) the hardening of Bakelite; (5) the polymerization of isoprene; (6) the vulcanization of rubber. Artificial silk may be stabilized by treatment as it leaves the spinning nozzle. ALSO: Chemical reactions are promoted or accelerated by exposure of dipolar substances to a concentrated electromagnetic field having one or more frequencies corresponding to wave lengths between 3 mm. and 6 metres approximately and equal to characteristic periods of the substances treated. The process applies to naturally dipolar substances and to those in which dipoles can be induced by a field. The characteristic periods of the substances are of three kinds depending respectively on (1) the relaxation time of the dipoles when orientated by the field; (2) the natural oscillation-period of the dipoles; (3) the term-difference frequencies of the atoms. They are associated with anomalous variations in the optical and dielectric properties and can be found by examining these properties in a field of varying frequency. The fields may be standing ones produced between conductors such as concentric tubes or the plate resonators described in Specification 417,564, [Group XL], or radiated fields concentrated by reflectors. Several different frequencies may be applied simultaneously or in succession and either constantly or intermittently, and constant electrostatic fields may be superimposed on them. The following examples of reactions are mentioned, viz.:-- Synthetic rubber is produced by polymerization of isoprene. Phenol-aldehyde condensation products, styrol, &c. are hardened. The drying of lacquers, varnishes &c. is accelerated. Acetaldehyde and acetic acid are obtained by the reaction of acetylene, steam, and ozone without a catalyst. Artificial silk is hardened by treatment of the material as it leaves the spinning nozzles. The product shows increased resistance to wear. **ALSO: The germination of seeds is accelerated by exposure to a concentrated electromagnetic field having one or more frequencies corresponding to wave lengths between 3 mm. and 6 meters approximately and equal to characteristic periods of the substances treated.** The characteristic periods of the substances are associated with anomalous variations in the optical and dielectric properties and can be found by examining these properties in a field of varying frequency. The fields may be standing one produced between conductors such as concentric tubes or the plate resonators described in Specification 417,564, [Group XL], or radiated fields concentrated by reflectors. Several different frequencies may be applied simultaneously or in succession and either constantly or intermittently and constant electrostatic fields may be superimposed on them. **According to an example, bean seeds previously swollen are treated for 30 seconds at 35 DEG C. with a field comprising wave lengths of 28 cm. and 87 cm. In four weeks they grow twice as much as untreated seeds.** ALSO: Changes in the energy content of dipolar substances are produced by exposure to a concentrated electromagnetic field having one or more frequencies corresponding to wavelengths between 3 mm. and 6 metres approximately and equal to characteristic periods of the substances treated. The process applies to naturally dipolar substances and to those in which dipoles can be induced by a field. The characteristic periods of the substances are of three kinds depending respectively on (1) the relaxation time of the dipoles when orientated by the field; (2) the natural oscillation-period of the dipoles; (3) the term-difference frequencies of the atoms. They are associated with anomalous variations in the optical and dielectric properties and can be found by examining these properties in a field of varying frequency. The fields may be standing ones produced between conductors such as concentric tubes or the plate resonators described in Specification 417,564, or radiated fields concentrated by reflectors. Several different

frequencies may be applied simultaneously or in succession and either constantly or intermittently and constant electrostatic fields may be superimposed on them. Medical diagnosis and treatment. Cell-division may be stimulated and other beneficial effects produced in living bodies by exposure to the fields. The method of determining the characteristic periods of the constituents of a living body provides a means of diagnosis. Medicines for internal and external use may comprise electrets made by subjecting a fluid dielectric to a field and then solidifying it by freezing, evaporation, or coagulation. Their electrical energy is released upon their application. A plaster comprising euphorbium powder, pine resin, yellow wax, and turpentine may be exposed at 85 DEG C. to a field of 235 cm. wavelength and then cooled to 15 DEG C. Disinfecting pastilles comprising beeswax and gums and the usual drugs may be similarly treated. Fermentation processes and the like may be modified by influencing the bacteria or their nutrient medium.

SciTecLibrary - Technology Database -- <http://10.184.80.155/www.sciteclibrary.ru>

Presowing Treatment Of Seeds By A Pulsed Magnetic Field: A New Technique In Crop Production



The new technique of presowing treatment of seeds is based on their irradiation by a pulsed magnetic field. It speeds seed germination, stimulates further plant growth, and increases grain and vegetable yields. The method is environmentally clean and has a low energy consumption.

Highly efficient installations have been developed for the large-scale use of the technique of the presowing pulsed magnetic field treatment (PMFT) of seeds in crop production. The method has been tested with success in the Central Black-Earth Area of Russia over the past five years. The mutational variability of plants grown with the use of presowing PMFT did not exceed the natural background for conventionally grown plants.

The stimulating effect of presowing PMFT is manifested in a change of the thermogenesis parameters at early stages of seed germination. The time-dependences of the temperature changes of the germinating seeds indicate that presowing PMFT shortens the duration of physico-chemical thermogenesis and increases the amplitude of the thermal fluctuations of biological thermogenesis.

The PMFT installation consists of a small generator of electric pulses and a source of a magnetic field (an operating chamber in the form of a solenoid coil). The seeds are subjected to the PMF treatment as they are poured through the operating chamber. The installation, intended for use in production conditions, has the following technical specifications:

power supply 220V, 50Hz or 110V, 60 Hz
 intake power 50 VA
 capacity 10 tons per hour

operating chamber dimensions:

diameter..... 200 mm
 length 500 mm
 weight 6 kg

duration of continuous operation -- unlimited.

The PMFT-induced effects are very sensitive to the parameters of the magnetic pulses and operating mode. The PMFT parameters and magnetic treatment modes constitute the know-how of the technique.

The proposed method of PMF seed treatment stimulates seed germination and can therefore be used to increase the field germination rates of seeds and, hence, their price. The treatment suppresses the spread of root rot and is an alternative to fungicide treatment of the seeds. Presowing PMFT enhances plant vitality and yield, the treatment being most effective on fertile and fertilized soils.

The proposed technique can also be used in the food industry, specifically to hasten barley seed sprouting in beer production. The R&D involved in the technique has been completed, and it can now be employed on a large scale. The method has been successfully tested on farms in the Voronezh, Lipetsk, Nizhny Novgorod, and Moscow regions. Highly efficient installations have been developed to implement the method.



Your Support Maintains this Service --

BUY

The Rex Research Civilization Kit

... It's Your Best Bet & Investment in Sustainable Humanity on Earth ...

Ensure & Enhance Your Survival & Genome Transmission ...

Everything @ rexresearch.com on a Thumb Drive or Download !

[ORDER PAGE](#)
