

Effects of Emulated Sequentially Programmed Magnetic Fields on Plants

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Abstract-The effect of time varying magnetic field on the lives and functioning of living organisms is an hot area of research in recent times. Researchers all over the world have agreed that there are various effects of magnetic fields generated from several directions and sources of the environment. Considering plants in particular, it has been observed that they are dealt with the laws of electromagnetism. Pulsed electromagnetic field therapy (PEFT) is the technique of time varying magnetic field that induces an electric field in accordance with faradays law of induction, which in turn produces a current in living body's conductive tissues. We proposed a novel technique of e-SPMF in biological tissues i.e. emulated Sequentially Programmed Magnetic Fields which includes proper analysis of both electric and magnetic fields of healthy plants and further applying the similar magnetic fields on and healthy plants using computational programming method. This will lead to emulation of healthy plants by unhealthy plants and progressively become healthy. This study or method will open the doors for the future research areas in field of evolution in animal and plant life. Further experimental analysis will be the proof of our hypothesis.

Keywords – Emulation, Sequentially, Programmed, Magnetic Fields, Plants.

I. INTRODUCTION

Plants' physiological oscillations occur under the constant effects of light, temperature and humidity this phenomenon is referred to as 'Endogenous Biological Rhythms'. Although these effects are of extreme physiological advantage, but they are not the only parameters which have effects on plant life[1]. Biochronometry is a branch of biometric which is based on study rhythmical phenomenon in living organism as well as their relations to Homeostasis [2,3]. Researchers have found out the 0.2-5 Hz rhythms in plants to demonstrate the effects of magnetic fields in respect of Homeostasis[4]. Our conclusion to this study was that this study was done keeping Geo-Magnetic fields in mind but that is not true in real life. Combined magnetic fields in the atmosphere are due to amalgamation of several other fields such as magnetic fields due to solar flux and the ionosphere with combination of magnetosphere[5,6]. This resultant magnetic field phenomenon is shown in Figure 1.

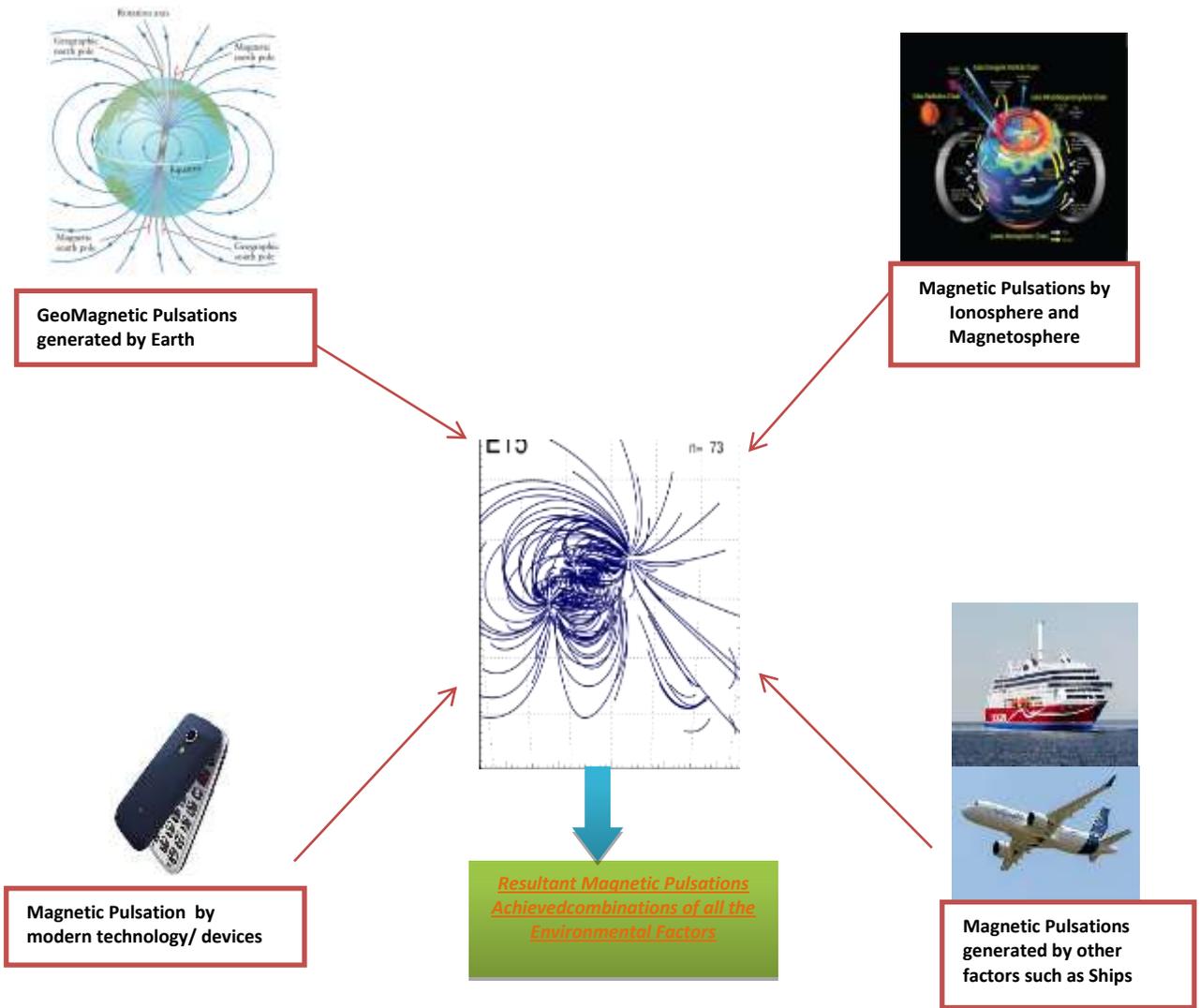


Figure 1: Generation or Depiction of Resultant Magnetic Pulsations Achieved by combinations of all the Environmental Factors

II. PULSED ELECTROMAGNETIC THERAPY

The use of magnetic fields as a therapy in various disease conditions has its own long history. The very first scientific evidence was given in the book *D magnet* which was written by William Gilbert during 1600 who was a personnel physician of English Queen(Gilbert, W, et al). After world war II , Japan introduced contemporary management of several diseases with the use of magnetic as well as electromagnetic fields which was which was moved to [7].

Application of PEMF Pulsed Electromagnetic Field Therapy have proven as an effective non-invasive method in treatment of several medical conditions such as skin ulcers, soft tissue injuries, non-uniform bone fractures and Degenerative nerves [8]. Pulsed electromagnetic field therapy (PEMFT) is an electrotherapy that uses an alternating current through a copper coil to produces a magnetic field that penetrates deeply through tissues and is believed to enhance cellular repair, reduce pain, oedema and inflammation Use of very low frequency fields are non-ionizing and non-heating or minimal heating to tissues (B.Rubik ,et al).The shapes of PEMF wave forms are either asymmetric, biphasic, quasi rectangular or quasi triangular in shape but most are sinusoidal. Specific type produces specific effect; pulsed one has more efficacy than continuous fields (D.H. Trock et al).[8-9]

III. EMULATED-SEQUENTIALLY PROGRAMMED MAGNETIC FIELDS (E-SPMFs) IN BIOLOGICAL TISSUE(S)

Emulated-Sequentially Programmed Magnetic Fields (e-SPMFs) in biological tissue(s) relates to systems for generating and inducing sequentially programmed magnetic fields (SPMFs) in biological tissue(s) and methods for inducing cellular regeneration and/or degeneration processes and methods of treatment based on such processes using such a system. More particularly, the invention relates to a SPMF therapeutic system and method for the regeneration or degeneration of biological tissue(s). More particularly, it relates to an apparatus or system for generating and applying SPMFs to biological tissue(s) which resonates therein. It is known that electromagnetic fields of certain frequency ranges and intensities are indigenous to living tissues and it has been found that inciting the inherent resonance by exogenous treatment using electromagnetic fields EMF.

IV. PROPOSED METHODOLOGY

As we had already discussed benefits of PEMF therapy in various disease conditions and its advancement as e-SPMF therapy which would enable the diseased tissues to emulate the healthy tissues. We propose the same method to be applied upon the plants in general phenomenon. In this at first magnetic fields generated by the healthy plants would be studied and analyzed using analytical tools and further using computer programming such magnetic fields would be applied systematically to unhealthy plants. On continuous application for the fixed period of time we would notice the betterment in unhealthy plants and better productivity of the farm as whole. This demonstration is represented in Figure 2.

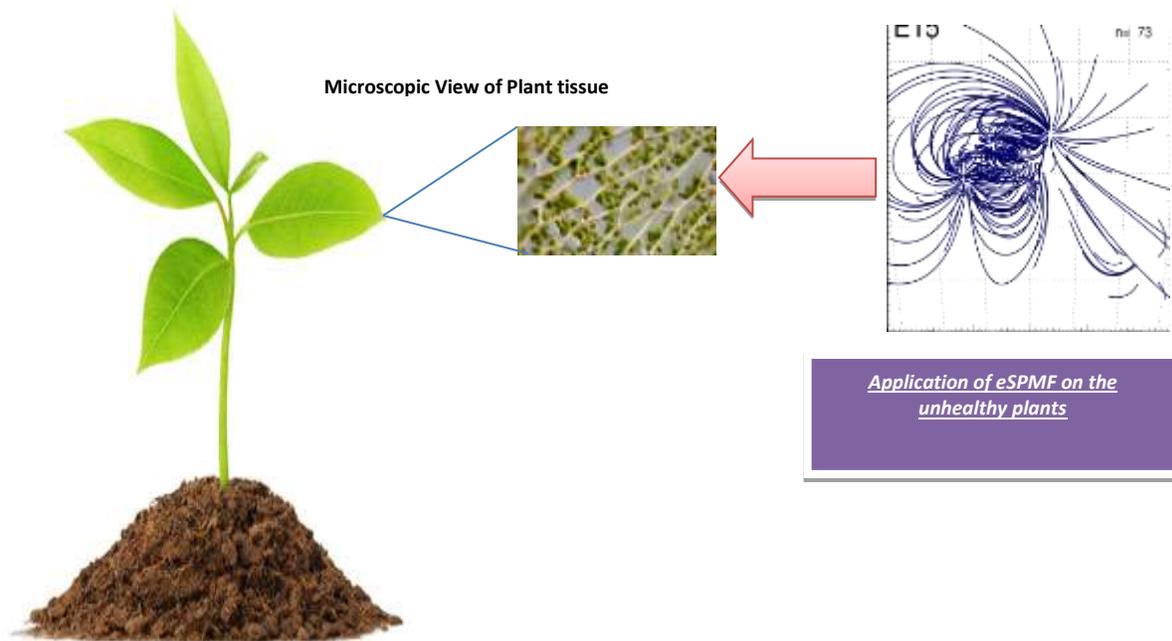


Figure 1. Application emulated sequentially programmed magnetic fields on Plants.

IV. CONCLUSION

Above study proposed a novel technique of e-SPMF in biological tissues i.e. emulated Sequentially Programmed Magnetic Fields which includes proper analysis of both electric and magnetic fields of healthy plants and further

applying the similar magnetic fields on and healthy plants using computational programming method. This will lead to emulation of healthy plants by unhealthy plants and progressively become healthy. This study or method will open the doors for the future research areas in field of evolution in animal and plant life. This would be great leap towards more cost effective and efficient method of farm or plant management and improving productivity of farm as whole. Further experimental analysis will be the proof of our hypothesis.

REFERENCES

- [1] Gilbert, W, (1600), De Magnete , Translated by P. F. Motteelay, New York : Dover publications.(1893)
- [2] Todorov, N. (1982) Magneto therapy, Sofia:Meditzina I Physcultura Publishing house
- [3] Basset ,C.A.L., Pawluk, Rj., Pilla, A.A. (1974) A non surgical salvage of surgically resistant pseudoarthroses and non unions by pulsing electromagnetic fields. Clin. Orthop .124:117-131.
- [4] Belyavskaya, N.V., 2004. Biological effects due to weak magnetic field on plants. Advances in Space Research 34, 1566–1574.
- [5] Minorsky, P.V., Bronstein, N.B., 2006. Natural experiments indicate that geomagnetic variations cause spatial and temporal variations in coconut palm (*Cocos nucifera* L.) asymmetry. Plant Physiology 142, 40–44.
- [6] Nanush'yan, E.R., Murashev, V.V., 2003. Induction of multinuclear cells in the apical meristems of *Allium cepa* by geomagnetic outrages. Russian Journal of Plant Physiology 50, 522–526.
- [7] Semenenko, A.D., 1972. Electrophytogram of pulsation rhythm. Doklady Botanical Sciences 206, 124–126
- [8] B.Rubik , “Bioelectromagnetics & the future of medicine ,” Adminstrative radiology journal , 16, 8, 1997, pp,38-46.
- [9] D.H. Trock, “ Electromagnetic fields and magnets : Investigational treatment for musculoskeletal disorders,” Rheumatic disease clinicis of north America, 26, 1, 2000, pp. 51-62.