

Article Information

Received date : December 08, 2023

Published date: December 27, 2023

Corresponding author

Benjamin Scherlag, PhD, Department of
Medicine, Email: benjamin-scherlag@
ouhsc.edu, 800 Stanton L. Young Blvd,
Suite 5400, Oklahoma City, OK

DOI: 10.54026/ESECR/1099

Keywords

Electromagnetic; Seedlings; Mung bean;
Biofield concepts

Distributed under Creative Commons
CC-BY 4.0

Application of Biofield Concepts on Germination of Mung Bean Seedlings in an Electromagnetic Environment

Benjamin J Scherlag^{1*}, Ronald A Scherlag², Sunny S Po¹ and Tarun W Dasari¹

¹University of Oklahoma Health Sciences Center, Cardiovascular Section Department of Internal Medicine, 800 Stanton L Young Blvd, Suite 5400 Oklahoma City, OK 73104

²Unaffiliated Independent Scientific Investigator, Oklahoma City, OK

Abstract

Introduction: The new concept of Biofields encompasses energy emissions and energy input into living systems, respectively. The external recording of electrical activity from the heart and brain are examples of such biofields. The Complementary and Alternative Medicine practices of Reiki and Therapeutic Touch represent the other aspects of the Biofield Concept. In the present study we observed the effects of negative and positive electromagnetic energy on the growth of Mung bean seedlings.

Methods: Five Mung bean seeds were put in each of 2 petri dishes. All were filled with 20 cc of distilled water. One petri dish was placed on the negative side of a plate magnet (3975 Gauss). The other was placed on the positive side of a second plate magnet. Both magnet plates were stored in a darkened desk drawer for up to 2 weeks.

Results: After the 2 weeks the seedlings on the negative plate showed substantial growth, whereas the positive side hardly grew.

Conclusions: Specific forms of electromagnetic energy from static magnets have distinctly different effects on the growth of Mung bean seedlings representing the energy input aspect of the Biofield responses to physiological regulation in living organisms.

Introduction

The idea that living systems generate and respond to energy fields as integral aspects of physiological regulation reflects a convergence of several disparate paths. Recently, this idea has been incorporated into a new concept called Biofields [1]. Numerous spiritual traditions describe modes and pathways of energy emanating from the physical body. Western biomedicine routinely examines electrical fields from the heart (via Electrocardiogram [ECG]) and brain (via Electroencephalogram [EEG]) as indices of clinical pathology. On a cellular level, evidence that endogenous electromagnetic and other types of fields play active roles in development, tissue repair, and an array of metabolic processes [2-4]. In the present study we describe the effects of electromagnetic fields from static magnets on the germination of Mung bean seedlings as an example of biofield effects on plant growth.

Methods

Mung bean seeds were obtained from a local grocer. Five seeds were put in each of 2 petri dishes. All were filled with 20 cc of distilled water. One petri dish was placed on the negative side of a plate magnet (3975 Gauss, Lothrop Magnets, Chickasha, OK). The other was placed on the positive side of a second plate magnet. Both magnet plates were stored in a darkened desk drawer for up to 2 weeks. At 5 days the drawer was opened and photographed. The petri dishes were returned to the dark. At 2 weeks the photograph of the seedlings was again taken (Figure 1, 2).

Results



Figure 1: Petri dishes with Mung bean seeds in distilled water after 5 days placed on the positive side of the Magnetic plate (Top) and on the negative side of the plate magnet (Bottom). Note the difference in Mung bean development.

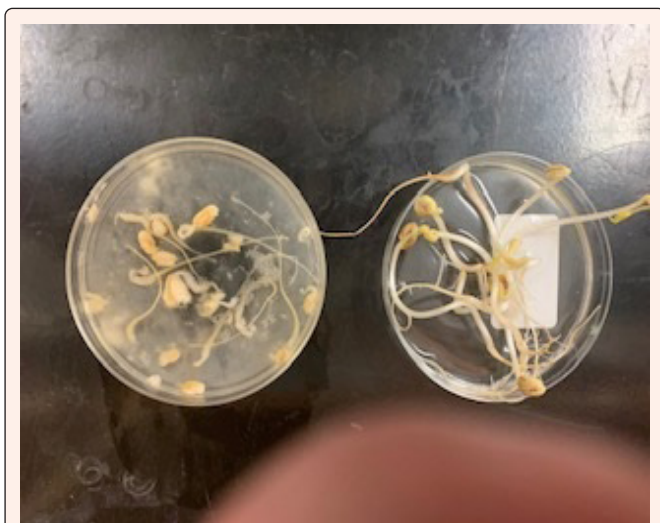


Figure 2: The same two petri dishes viewed after 2-week exposure to a positive magnetic field (left) and negative energy field (right) Note the substantial increase in root and stem (length and width) of seedlings in response to the negative EMF.

Discussion

Background

In a recent report we used a combination of a plate magnetic connected to a non-magnetic plate to induce an electromagnetic gradient. Applying our hand to the non-magnetic plate allowed the detection and quantification of the biofield energy from each volunteer subject [5]. Early biofield studies were motivated in part by the many studies in which modalities that appear to involve energy and/or informational fields and are broadly known as “energy medicine.” These include energy healing, homeopathy, acupuncture, magnet therapy, bioelectromagnetic therapies, electrodermal therapy, among others. Some of these modalities involve novel ways of obtaining useful information from the body’s energy field as well as applying energy fields therapeutically [1]. In this regard, the present study conforms with the application of external electromagnetic energy to living organisms, in this case Mung bean seedlings.

Implications and future studies

The results of the present study raise several questions regarding the mechanisms responsible for the growth effect of the seedlings grown on the negative side of the magnet. We hypothesize that the close proximity between the two magnets provided

an electromagnetic gradient resulting in cellular proliferation on the negative plate and inhibition or lack of growth on the positive plate. In a recent article by Song et al. they showed that the uniformity of extremely low level-electromagnetic fields (ELF-EMFs) is a major parameter and that exposure to a uniform ELF-EMF increases genotoxicity on cancer and normal cells one hand but also increased cell proliferation in human cancer and normal cells by reducing intracellular reactive oxygen species (ROS) [6]. The contradictory effects of ROS has also been described by Mittler [7] It is interesting to note that these studies align with our recent discovery of a new non-thermal plasma, Hybrid-plasma, gaseous and liquid form [8]. The dual properties of Hybrid-plasma have been shown to enhance proliferation of roots in plants while inhibiting growth of stems and leaves as an anti-aging property [9]. Future studies will focus on oxidative stress as an underlying contributing mechanism for the dual actions of electromagnetic and chemical actions described in the present report.

Conclusions

We have shown that different forms of electromagnetic energy from a negative or positive static plate magnet promotes either cellular proliferation or growth inhibition of Mung bean seedlings, respectively. We propose that these effects represent the reciprocal actions of the recently developed concepts of Biofields, energy emitted and energy input to plant and animal organisms.

References

1. Rubik B, Muehsam D, Hammerschlag R, Jain S (2015) Biofield Science and Healing: History, Terminology, and Concepts. *Glob Adv Health Med* 4 (Suppl): 8-14.
2. Funk RH, Monsees T, Ozkucur N (2009) Electromagnetic effects from cell biology to medicine. *Prog Histochem Cytochem* 43(4):177-264.
3. Movaffaghi Z, Farsi M (2019) Biofield therapies: biophysical basis and biological regulations? *Complement Ther Clin Pr* 15: 35-37.
4. Bischof M, Del Giudice E (2013) Communication and the emergence of collective behavior in living organisms: a quantum approach. *Mol Biol Int* 987549.
5. Scherlag BJ, Scherlag RA, Sunny S Po, Dasari TW (2023) A New source of Energy Present in Plants and Animals. *Journal of Engineering and Technology Development* 1; 1.
6. Song K, Im SH, Yoon YJ, Kim HM, Lee HJ, et al. (2018) A 60 Hz uniform electromagnetic field promotes human cell proliferation by decreasing intracellular reactive oxygen species levels. *PLoS One* 16: 13(7).
7. Mittler R (2017) ROS Are Good. *Trends Plant Sci* 22(1):11-19.
8. Scherlag BJ, Scherlag RA, Dasari T, Po SS (2023) The Ultimate Paradox: The greatest cause of dying is living. *Environ Sci Ecol: Curr Res* 4: 1092.
9. Scherlag BJ, Scherlag RA, Po SS (2022) Hybrid-Plasma, a Newly Formed Environment for Growing Plants without Soil or Water. *Environ Sci Ecol: Curr Res* 3: 104.