Effects of the FLFE Service on the Germination and Root Growth Rate of Spinach: Replication and Extension Phase 2 Study

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Keywords

Plant Vitality · Plant Growth · Organic · Spinach · Focused Life-Force Energy · FLFE · Food · Sustainability Experimental Plant Program · Blinded Design

Abstract

Healthy food production is facing challenges across the world. Finding innovative solutions to support growing organic and healthy foods is vital to our existence. Focused Life-Force Energy (FLFE) has developed a consciousness-raising service that focuses on enhancing the environment in which humans, plants, and animals can thrive. This replication and extension Phase 2 double blinded study examined the effects of the Standard FLFE Service as well as the Experimental Plant Program on the germination rate and root growth rate of organic spinach. A 167.1% increase in size of roots was observed for spinach in the Experimental Plant Program environment compared to control environment, a 58.7% increase in size of roots was observed for spinach in the FLFE Flagship service environment compared to control environment, and a 105.2% increase in size of roots was observed for spinach in the Experimental Plant Program environment compared to the FLFE Flagship service environment.

Introduction

Agriculture significantly impacts the environment due to three key factors: the requirement of large amounts of fresh water, greenhouse emissions, and land use that often results in a loss of natural habitat [1]. Finding new ways and methods or rediscovering old ways and methods of growing food efficiently and organically, is crucial as humanity is facing ever increasing food prices, inflation, and potential food shortages [2-3].

Focused Life-Force Energy (FLFE) has developed a consciousness-raising service that, among many effects, is aimed at enhancing the environment in which humans, plants, and animals can thrive (https://www.flfe.net/). Its effects and mechanisms of action are not yet fully understood. This research study aims to provide evidence in a commercial farm setting of the benefit of FLFE's high-consciousness field for plant growth and vitality.

Background

The success of a plant depends on multiple factors that can affect seed germination, plant growth, and overall plant vitality.

Factors that affect seed germination [4] may include specific seed traits [5] and seed dormancy [6]. Environment also plays a major role on seed germination, and factors such as soil texture [7], soil moisture [8], soil pH [9], soil salinity [10], oxygen [11] as well as light, temperature, pathogens, and quality of water can have substantial effects [4]. Primary factors that affect plant growth and vitality include water, temperature, light, humidity, and nutrients by influencing growth hormones in the plant [12-13].

There are other factors that may influence the growth and vitality of plants: sound waves [14-15], electrical grounding (i.e., electroculture) [16-17], and human intention [18-19]. While these factors may not be considered 'mainstream', evidence suggests that they can have a positive effect on plants.

Many countries are facing rising prices of food among those of other necessities [2-3]. Finding creative and affordable solutions for increasing the production of healthy, organic, whole foods will be essential.

Note: The Introduction and Background sections across all white papers on the topic of FLFE's effects on plant growth and vitality are very similar. This was done to ensure that all relevant information is included in each white paper and that each white paper acts as a standalone publication when read individually.

FLFE is a Canadian company offering a consciousness-raising subscription-based service for a property or around an object. The FLFE system is designed to focus available life-force energy and to activate a high consciousness field at a specified location (i.e., legal address or geographic coordinates) or around a personal object (i.e., mobile phone). The higher-level consciousness field, in combination with other enhancements, is intended to increase the beneficial nature of the local environment for everyone and everything in that environment, including humans, animals, and plants. Specifically, both the Standard FLFE service as well as FLFE's Experimental Plant Program are intended to create an environment where life force can be harnessed by the plants, thus increasing plant vitality.

One of the main effects of the FLFE service, spontaneously reported by FLFE's customers, is increased vitality and overall health changes of their plants (https://www.flfe.net/ces-results/).

The FLFE service claims are extraordinary [20] in terms of mainstream science and a number of experiments, such as the one detailed in this paper, have been conducted to explore the effects of the purported beneficial environmental changes and their effects on human, animal, and plant life. FLFE's experimental philosophy is to first explore the effects (i.e., *'Is something happening?'*) and then, when possible and practical, explore the mechanisms of action (i.e., *'How is it happening?'*). Please refer to the FLFE Gold Standard of research for more information (see the FLFE Gold Standard of Research here: https://www.flfe.net/research).

Methods

Three identical plant tent growth systems, Environment A, Environment B, and Environment C were set up. The input and output fans can be seen in the pictures below (Figures 1-3). Each input fan and output fan were controlled by the temperature setting, which was the same for each experimental area.

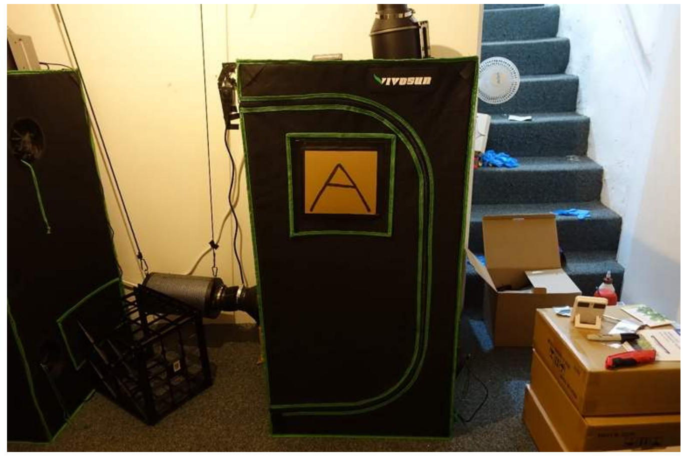

Figure 1. Plant tent A setup.

Figure 2. Plant tent B setup.

Figure 3. Plant tent C setup.

The input fan had a HEPA filter on it to prevent mold, dust, and organic material from coming into the experimental space. In all the photos the temperature fan control units can be seen (Figures 4-6), along with the temperature read-out.

Figure 4. Plant tent A temperature reading.

Figure 5. Plant tent B temperature reading.

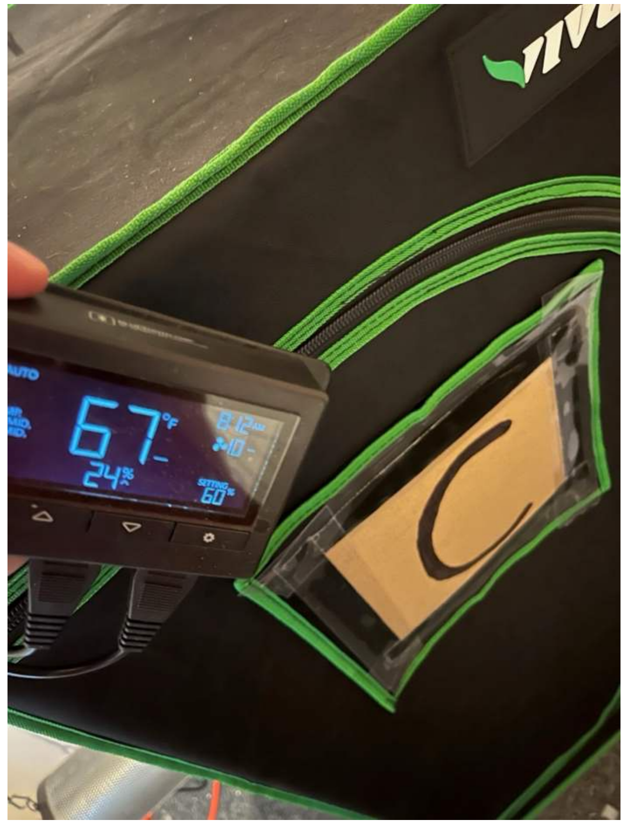

Figure 6. Plant tent C temperature reading.

Environment A: one plant tent growth system with active Experimental Plant Program, including the EMF Mitigation Program. This experimental FLFE environment is designed to specifically support plant growth and vitality. Targeted high-consciousness fields of up to 850 LOC [21] are applied.

Environment B (Control, no additional FLFE support): one plant tent growth system with no active FLFE field. The baseline Level of Consciousness (LOC) in the United States at the time of this experiment, over the previous 30 days was approximately 350 based on the theory and method created by Dr. David Hawkins [21].

Environment C: one plant tent growth system with active FLFE Flagship field, including the EMF Mitigation Program. The LOC of the field around the system for Experiment B was 560+ based on the theory and method created by Dr. David Hawkins [21].

161 seeds were used in the Experimental Plant Program environment, 184 in the FLFE Flagship environment, and 187 in the control environment.

Environments A, B, and C were distributed across the same room. Each individual grow container was light-tight and airtight with intake and exhaust fans mounted on each grow container. These fans were automatically regulating the temperature.

In addition to seed germination rates, root lengths were measured. Germination containers containing seedlings from each environment had paper towels and the same amount of water added into each one each day (Figure 7).

Figure 7. Seedlings in separate containers.

A cluster of seedlings before separating them and placing them on the counting grids is shown in Figure 8.

Figure 8. A cluster of seedlings.

Seedlings were then placed on a counting grid for each environment. The count is how many times the seedling crosses a grid line (Figure 9).

Figure 9. Seedlings placed on a counting grid.

Results

Seed germination was measured visually, and spinach leaves were counted and analyzed. The germination rate for organic spinach seeds in the Experimental Plant Program environment was 90%, in the FLFE Flagship environment was 84% compared to control environment where the rate was 82% (Experimental Plant Program Vs. Control Chi-square = 15.94, $p<0.005$; Experimental Plant Program Vs. FLFE Flagship Chi-square = 13.64, $p<0.0005$; FLFE Flagship Vs. Control Chi-square = 0.12 n.s; see Figure 10).

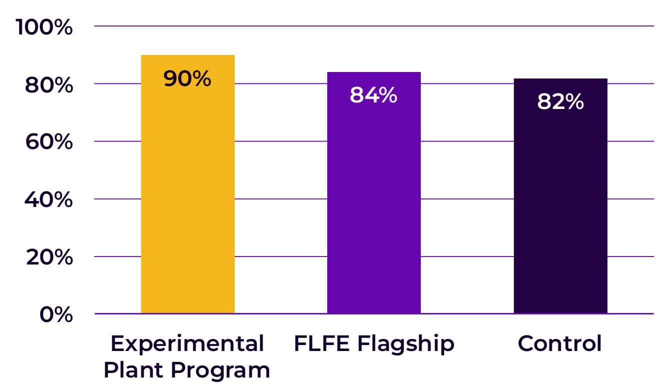

Figure 10. Organic spinach seed germination rates (Experimental Plant Program Vs. FLFE Flagship environment Vs. control).

In addition, root sizes were measured, as described in the Methods section. The root sizes for organic spinach seeds in the Experimental Plant Program environment was 5.55 grid crossings, in the FLFE Flagship environment was 3.3 grid crossings compared to control environment where the root sizes were 2.08 grid crossings (Experimental Plant Program Vs. Control $t(308)=17.22$, $p<0.0000001$; Experimental Plant Program Vs. FLFE Flagship $t(308)=9.60$, $p<0.0000001$; FLFE Flagship Vs. Control $t(308)=7.07$, $p<0.0000001$.; see Figure 11).

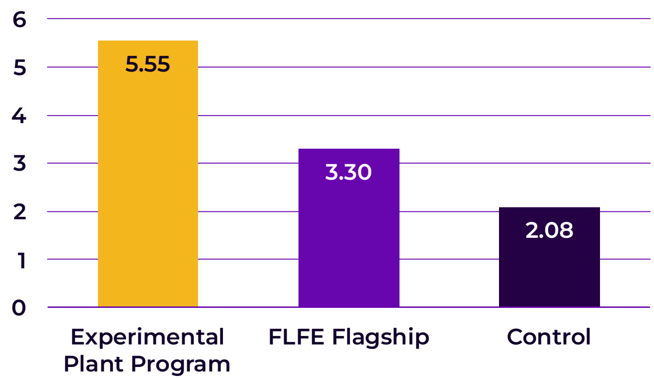

Figure 11. Spinach root sizes measured in grid crossings.

Limitations

Although the growth tents were placed in fixed parts of the room and the temperature and humidity were similar for each chamber, ideally the experiment should be replicated to potentially rule out any differences in the effect of the position of the tents within the room.

Another limitation of the study was the small differences in the number of seeds per condition.

Conclusion and Future Directions

Given the promising results of this and previous studies on the effect of FLFE on plants, the idea that the FLFE service could be used to increase food production seed germination, and, possibly, the vitality of the plants, would be a profound contribution to humanity and the planet itself.

Future studies on this topic may include not only replication and extension studies that would have larger numbers of FLFE-activated conditions, but also explore the effects of FLFE on plants and food in terms of the nutrients available in the food as well as the ability of humans to absorb those nutrients more effectively and efficiently.

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