

SUMMARY



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Germination of wheat seedlings and treatment with a Biophoton Therapy device according to J. Boswinkel – Influence of information from a herbicide

Author: Lely, B

Supervisor: Endler, P.C.

Introduction

To illustrate its fundamental basis, the first part of this thesis will inform in general on Biophotons, and Biophoton Therapy.

At the end of this chapter the research question will be formulated.

The third chapter of this thesis is about the Methods that are used in the research performed. The fourth chapter will inform about the obtained results and any special observations within these results. Chapter five will deliver a discussion of the results and also some critical notes on weaknesses of this study. Finally ideas for further research on the subject will be given.

Background and State of Knowledge

The scientific fundamentals have come about in the scientific research results in the 70's, 80's and 90's of last century by Prof. F.A. Popp on the existence of Photons and the Biophotons as Popp called them in case living systems are involved (Popp 1976-1979) (Bischof 2001).

Based on the research of Prof. Popp and the postulates Popp revealed on the light of living cells, Dr. J. Boswinkel developed the concept of the application of biophoton and their quantum effects after he learned about the publication of Popp in the early 80's.

The progress in understanding the principles and application possibilities to the extent that Boswinkel could brief technicians of different disciplines to design instruments according to his specifications took two decennia. From the year 2000 Boswinkel released the family of instruments in use today; the 'Biophoton Therapy Device J. Boswinkel'. (Boswinkel 2010).

The BPT as method has been unnoticed in the scientific field, except from publications by the founder J. Boswinkel. BPT will only start to be recognised in case scientific supporting evidence is produced by independent research on effects of BPT in treating living systems.

In homeopathy, as information medicine, research (ECIM 2009 abstracts Endler et al. 2010 Matzer et al. 2009 Lahnstein et al. 2009) has proven that homeopathic dillutions can have an influence on germination of wheat seedlings. This research has been set up to determine if the Biophoton Therapy

Device according to J. Boswinkel (as a device to transfer information) can transfer information through water to influence the germination of wheat seedlings.

Within this research project we want to explore if there is any difference in wheat seedling germination between test group -BTO- (seedlings nourished with water treated by standard program of The Electronic Device) and germination of wheat seedlings nourished with water containing information of herbicide Round Up -BTRU group-. Also differences in germination of wheat seedlings are compared between the test groups and an inert control group -W0- group-.

Main Research Question

Is there a difference in germination between wheat seedlings that were nourished with biophoton treated water -BTO group- and wheat seedlings that were nourished with biophoton treated water containing information of the herbicide Round Up -BTRU group- ?.

Sub Question

Is there a difference between the abovementioned groups and an inert control group -W0-?

Methods

Design

- Fundamental research: test group versus control groups; blinded.
- 3 groups, (biophoton treated water -BTO group-; biophoton treated water containing information of the herbicide Round Up -BTRU group-; inert control group -W0-)
- 24 dishes in each group containing 20 wheat seedlings / dish.

Participants

- Researcher: B. Lely
- Supervisor: P.C. Endler
- Statistical analysis: Harald Lothaller
- Assistant for blinding purposes: M. Klarenbeek
- Additional data were provided by B. Mikx

Materials

- wheat seedlings (*Triticum aestivum*, variety: Capo)
- drawerbox (9 drawers)
- disposable petri dishes
- 3 glassware beakers
- aluminium foil
- tap water
- Round Up (herbicide, liquid substance, ready to use)
- 3 injectors

- filter paper
- wooden sticks
- Biophoton Therapy Device J. Boswinkel

Performance of the Study

In this study germination and rooting of 3 groups of wheat seedlings were observed during 40 hours at intervals of 4 hours. One group was nourished with biophoton treated water (treatment of water through The Electronic Device) -BTO group-. One group was nourished with water containing information of herbicide (Round Up) –BTRU group- (treatment of water through The Electronic Device). One group was nourished with normal (untreated water) -WO group-.

Four experiments were performed:

- One in Feb. 2010 by B.L.
- One in October 2010 by B.L.
- One in Feb. 2010 by B.M.
- One in Oct 2010 by B.M.

Statistical Analysis

For each group and at each measuring point in time, the number of grains that had reached the observed parameters was compared by analysis of variance and follow up post hoc tests.

Results

Survey

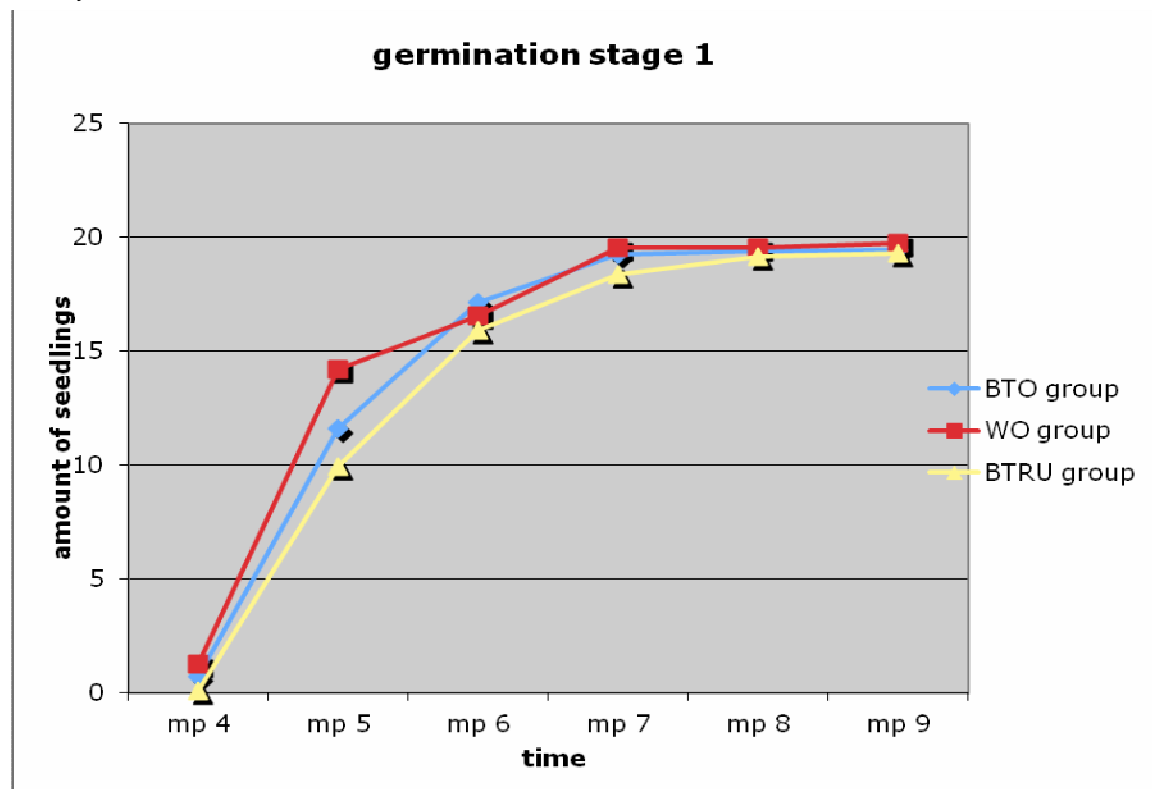


Figure showing the differences in germination stage 1 between BTO, WO and BTRU group.

The figure refers to the first experiment performed by B.L. in Feb. 2010. As can be seen, in the experiment the BTRU group germinated slower than the BTO or the W0 group. Results are also statistically significant at some measuring points (see Main Part of the Thesis).

Table showing results of winter and autumn experiments from 2 researchers B. Lely and B. Mikx.

germination	<i>B.L., winter</i>	<i>B.L., autumn</i>	<i>B.M., winter</i>	<i>B.M., autumn</i>
BTRU test probe (%)	51.0	37.4	75.2	37.4
BTO control probe (%)	60.6	41.4	62.7	29.2
rel. diff (%)	- 9.6	- 4.0	+ 12.5	+ 8.2
p	< 0.05	< 0.01	< 0.05	< 0.01

The table shows the results of all 4 experiments after 20 hrs of germination. Data show there is a significant difference ($p < 0.05$ or < 0.01) between BTO and BTRU group at several measuring points. However, in the BTRU test group there is *less* germination in the experiments performed by B.L. and more germination in the experiments performed by B.M. compared to the BTO control group.

Discussion

Interpretation of Results

Experiment showed *less* wheat growth under the influence of test probe prepared from the herbicide “Round Up” using an Electronic Device compared to analogous controls prepared from water in experiments performed by researcher 1, and *more* growth in experiments performed by researcher 2. Interestingly, statistics discriminate significantly between the two researchers.

Such results are not uncommon in research related to information transfer to botanic systems. Betti et al. (1997) and Brizzi et al. (2005) reported a stimulation of the longitudinal growth of wheat stalks through treatment of the seeds with high homeopathic potencies of arsenic. On replicating the experiment however, Binder et al. (2005) found a significant decrease in longitudinal growth. Hamann et al. (2003) described biphasic effects of seed germination under high dilutions of gibberellic acid. Several independent researchers working at the Interuniversity College found significantly *reduced* longitudinal growth of wheat stalks in groups treated with gibberellic acid 30x (stepwise diluted and succussed, 10e-30: “G 30x”) as compared with groups treated with water 30x (W 30x) when experiments were performed in autumn or spring. However, replications of this experiment in winter produced *higher* values in the G 30x groups (Endler et al. 2009).

Conclusions with regard to the research problem and the state of knowledge

Data from this research suggest information of herbicide Round Up, transferred through The Electronic Device, to have an effect on germination and rooting of wheat seedlings. This implicates information of growth/germination inhibiting substance can be transferred through The Electronic Device regarding what is supposed in Background and State of Knowledge.

Self-Critical Remarks

Home lab conditions are more difficult to standardize and regulate compared to official laboratory conditions. This variable could be of influence on research data.

Suggestions for Further Research

Before results described in this research can be generally accepted, repetition of experiments is necessary. This research therefore can be used as an initial concept for more research.

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