
Conference presentation

Diluted versus potentized probes of silver nitrate (10e-2 to 10e-10) and wheat germination

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Background

In 1926, an influence of a homeopathically prepared high dilution of silver nitrate on the growth of coleoptiles of wheat seedlings was described (Kolisko 1926). Later, in an extensive series of experiments, wheat was observed under the influence of extremely diluted agitated silver nitrate (10e-23, "24x"). Stalk lengths clearly indicate that development is enhanced by the probe silver nitrate 24x as compared to control (Scherer et al. 2015). A preliminary experiment was performed in early autumn 2015 on stalk growth of wheat seedlings treated with (not potentized) dilutions of silver nitrate 10e-6 to 10e-10 ("6e to 10e"), compared to potentized silver nitrate 6x to 10x (N = 100 per group). A clear, albeit not statistically significant trend was observed of 6x-stalks being longer (23.4 ± 16.2 mm) than 6e-stalks (13.0 ± 10.9 mm).

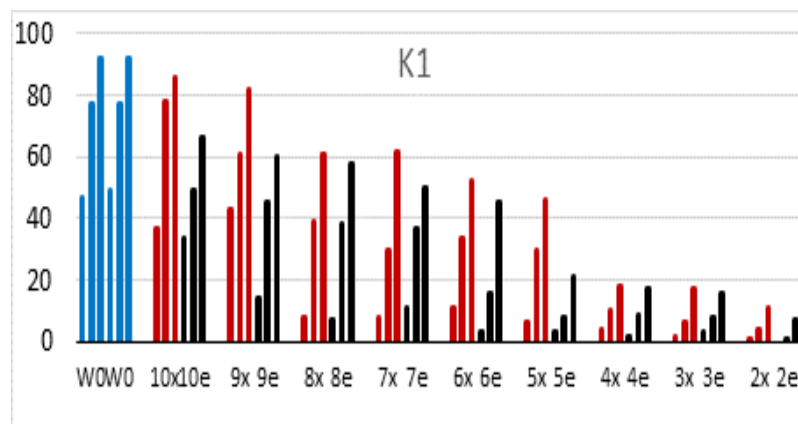
Objective

The aim of this study was to investigate the influence of diluted versus potentized low dilutions of silver nitrate (10e-2 to 10e-10) on wheat germination.

Method

The experiments were performed in late autumn 2015 on wheat grain (*Triticum aestivum* L., Capo variety). The grains were observed under the influence of aqueous solutions 10^{-2} to 10^{-10} part per weight of silver nitrate, either diluted in steps of 1 : 10 in distilled water by mere pipetting (probes "2e – 10e"), or diluted and agitated in steps of 1:10 (to create potentized probes "2x – 10x"). Untreated distilled water ("w") served as an additional control. All probes were applied blindly. 100 grains were observed per treatment group in each of the groups resulting a total of 2,000 grains. Grains were placed in glass dishes, probes were added and dishes were covered with lids and placed in drawers. The following endpoint criteria were defined: K1 = visible emergence of sprout material, K2 = lifting of the operculum and emergence of the sprout and W1 = development of three roots.

Result



Germination rates K1 of seedlings treated with “w”-probes (blue), with “e”-probes ranging from 2e to 10e (black) and with “x”-probes ranging from 2x to 10x (red) at the measuring points 20h, 24h and 28h (from left to right for each of the probes).

In K1, K2 and W, there is an obvious increase of germination rates from the high to the lower concentrations of silver nitrate, both in the “e” and in the “x”-groups and observable at 20h, 24h and 28h ($p < 0.01$). In contrast, germination rates of the two „w“-probes are practically alike ($p > 0,05$)

When “e” and “x”-data are compared, germination rates are higher under the influence of “x” than under the influence of “e” ($p < 0.01$ for the pooled “x”-values compared to the pooled “e”-values with regard to K1 as well as K2 as well as W).

Conclusion: A significant difference was found between wheat grains treated with mere dilutions compared to grains treated with potentised dilutions.

References

1. Endler PC, Belavite P, Bonamin L, Jäger T, Mazon S. Replication of fundamental research models in *ultra high dilutions* 1994 and 2015 – update on a bibliometric study. Special issue Homeopathy London. 2015; 104(4):234-45.
2. Endler PC, Schulte J, Stock-Schroeder B, Stephen S. Ultra high Dilution 1994 revisited 2015 – the state of follow-up research. Special issue Homeopathy London. 2015 b Oktober;104(4):223-6.
3. Kolisko L. Physiologischer Nachweis der Wirksamkeit kleinster Entitäten bei 7 Metallen – Wirkung von Licht und Pflanzen auf das Pflanzenwachstum. Dornach Schweiz: Philosophisch-Anthroposophischer Verlag am Goetheanum; 1926.
4. Kraus C, Knobloch U. Diluted versus diluted and agitated probes of silver nitrate (10^{-2} to 10^{-10}) and wheat germination, Thesis (MSc); branch campus UCN at Interuniversity College Graz / Schloss Seggau; 2016.
5. Scherer-Pongratz W, Endler P.C., Lothaller H., Stephen S. Wheat and ultra high diluted silver nitrate – further experiments and re-analysis of data. Special issue Homeopathy London. 2015;104(4):246-9.

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