

Seasonal variation of the effect of extremely diluted agitated gibberellic acid (10^{-30}) on wheat stalk growth – a multi researcher study

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ABSTRACT

Control experiments were performed at different seasons of the year as a follow-up to pilot experiments [1] where a homeopathic high dilution of gibberellic acid had influenced growth in a wheat bio assay (7 days). Grains of winter wheat (*Triticum aestivum*, Capo variety) were observed under the influence of extremely diluted gibberellic acid (10^{-30}) prepared by stepwise dilution and agitation according to a protocol derived from homeopathy (“G30x”). Analogously prepared water was used for control (“W30x”). Following up on 5 pilot experiments (4 in autumn 2007, 1 in spring 2008), 10 experiments were performed (5 in autumn 2008 or 2009 and 5 in winter 2009 or 2010) with a total of 9 experiments in autumn season (5 researchers, about 9,000 grains), and 6 in winter/spring (4 researchers, about 6,000 grains).

Germination rates after 7 days were slightly higher for the autumn experiments (96.1%) than for the winter/spring experiments (94.8%) ($p > 0,05$), with a non significant trend of more seedlings having germinated in the verum group in the autumn experiments ($p > 0,05$). All of the 9 autumn experiments (i.e. pilot as well as repetition experiments) showed *less* stalk growth in the verum group (statistically significant with $p < 0.01$ in 4, with $p < 0.05$ in 3 cases, trend in 2 cases). Mean stalk lengths (mm) were 46.97 ± 20.50 for the verum group and 50.66 ± 19.77 for control (mean \pm S.D.) at grain level ($N = 4,440$ per group) and ± 3.87 and ± 3.38 (\pm S.D.) respectively at dish level (217 cohorts of 20 or 25 grains per treatment group). In other words, verum stalk length (92.72%) was 7.28% *smaller* than control stalk length (100%). The effect size (D means : S.D.), calculated on the basis of dishes, was high ($d = 1.02$). In contrast, no reliable effect was found in experiments performed in winter/spring (less stalk growth in the verum group in one case, no difference in 2 cases, and more growth in 3 cases). Overall verum stalk length (103.64%) was slightly *greater* than control stalk length (100%). The effect size, however, was small ($d = 0.45$). The new data are in line with the 2007 findings, i.e. confirm that gibberellic acid 30x *does influence* stalk growth.

[1] Pflieger A., Hofäcker J., Scherer-Pongratz W., Lothaller H., Reich C., Endler P.C.: The effect of extremely diluted agitated gibberellic acid ($10e-30$) on wheat stalk growth – A two researcher pilot study. *Complementary Therapies in Medicine* 2011, 19: 164-169

[2] Endler P.C., Reich C., Matzer W., Reischl T., Hartmann A.M., Thieves K., Pflieger A., Hofäcker J., Lothaller H., Scherer-Pongratz W.: Seasonal variation of the effect of extremely diluted agitated gibberellic acid ($10e-30$) on wheat stalk growth – a multi researcher study. *The Scientific World Journal* 2011, in print



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