

Various topics

Wheat germination (20 hrs) and extremely diluted gibberellic acid (10e-30): Explorative experiments on a fundamental homoeopathy research model

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Objective

To further explore a model on the effect of extremely diluted gibberellic acid (10e-30) on wheat growth by modifying observation time (20hrs) and the observation parameters (germination and rooting).

Background

In previous project phases 1 and 2, experiments were performed by staff and students at the Interuniversity College (www.inter-uni.net) within the Master's programme on Complementary Health Sciences. Observation of *longitudinal growth of wheat stalks after 7 days* showed reduced coleoptile length in groups treated with gibberellic acid 30x (stepwise diluted and succussed, 10e-30: "G 30x") as compared to groups treated with water 30x (W 30x) or inert water (W0), especially when experiments were performed in autumn (ECIM abstracts 2009 by Endler et al. and 2010 by Matzer et al.).

Methods

In this study on project phase 3, *germination and development of roots* of wheat seedlings was observed *after 20 hours*. Seedlings were treated with G 30x (potentized verum, see above, Background) or W 30x (potentized control). Appearance of stalks and appearance of roots was monitored after 20 hrs. Two independent researchers from the Interuniversity College were involved, each of whom performed an experiment comprising 500 seedlings per group of G 30x, W 30x and W0. Experiments were performed in September and February, respectively. Results were analysed by means of chi square tests.

Results

In both experiments, germination rates and root development after 20 hrs were *reduced* in groups treated with G 30x when compared to W 30x (for relative differences, see table).

	Schiestl autumn 09	Hartung winter 09/10		Schiestl autumn 09	Hartung winter 09/10
<i>W 30x germ (%)</i>	69.0	60.8	<i>W 30x root (%)</i>	50.0	35.0
<i>G 30x germ (%)</i>	61.0	52.0	<i>G 30x root (%)</i>	34.8	27.0
<i>rel. diff. (%)</i>	- 8.0	- 8.8	<i>rel. diff. (%)</i>	-15.2	- 8.0
<i>p</i>	0.01	0.01	<i>p</i>	0.00	0.01

Conclusion

Experiments showed an inhibiting effect of G 30x on *wheat germination and development of roots after 20 hours*, with higher significance in autumn than in winter. This finding is comparable to previous results on *longitudinal growth of wheat stalks after 7 days* (ECIM abstract 2009 by Endler et al.; 2010 by Matzer et al.). The bio-assay on *wheat germination and development of roots after 20 hours is distinguished by its ease of handling* (site and materials preparation, total duration of experiment and measuring time). This assay should therefore be applied to further research problems, and its use by independent researchers should be encouraged.