

# Evaluation of the effects of homeopathic medicines on the germination seeds of *Brassica oleracea* l. var. *Italica*

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## ABSTRACT

**Background:** Aiming to increase the productivity and achieve production levels that meet the market demands, agriculture makes use of pesticides and fertilizers. Fertilizers are natural or artificial substances that contain chemical elements and physical proprieties that enhance plant growth and productivity. However, the addition of fertilizers has generated environmental impacts that jeopardize the sustainability of agricultural ecosystems in the medium and long term. Fertilizers are associated with eutrophication of rivers and lakes, soil erosion, among others. The organic agriculture is an alternative for the use of additives, which aims to enhance the efficient use of nonrenewable natural resources, and utilization of renewable natural resources and biological processes aligned to biodiversity, the environment, economic development and quality of human life. The use of homeopathy for the cultivation of plants is into the organic agriculture. Homeopathic medicines can lead to greater plant growth, the elimination of pests and soil enrichment, without presenting environmental impacts, or damage to the consumer or for the handler.

**Aim:** The objective of this study was to find on the homeopathic medicine an alternative method for the use of fertilizers in order to increase the germination of broccoli (*Brassica oleracea* L. var. *Italica*).

**Methodology:** Agitated dilutions of phosphorus 6cH, 30cH and 200cH were prepared from homeopathic matrices in dilution 5cH according to the 3rd edition of the Brazilian Homeopathic Pharmacopoeia. The dilution and the agitation water on the same high dilutions above, are used as a growth control, in the same way, gibberellic acid, a hormone, widely used commercially as a fertilizer, is also used as control. The *Brassica oleracea* L. var. *Italica* seeds were disinfested and inoculated in Petri plates containing water (15 ml). All seeds were placed in a germination chamber kept at 20°C, photoperiod 16 hours light and 8 hours dark, for 10 days. The applications were made every 2 days and each experimental unit comprised 20 seeds in triplicate. Variables assessed included: germination percentage and germination speed index.

**Results:** In preliminary experiments the phosphorus 6cH showed differences between the groups treated, the germination occurred faster and regular, better than gibberellic acid. More tests are required with other seeds lots.

**Conclusion:** A quickly, regular and more complete germination is expected when used homeopathic drugs. Rather than use substances harmful to human health, such as fertilizers but gaining it's same efficiency with a less aggressive results for the plant and for who will eat it or work with agriculture.

**Keywords:** broccoli, fertilizer, Phosphorus, Gibberellic Acid.

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Support: authors declare that this study received no funding

Conflict of interest: authors declare there is no conflict of interest

Received: 01 June 2012; Revised: 12 August 2012; Published: 30 September 2012.

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How to cite this article: Barbosa IS, Valério TS, Siqueira CM, Salgueiro AM, Gomes MN. Evaluation of the effects of homeopathic medicines on the germination seeds of *Brassica oleracea l. var. Italica*. *Int J High Dilution Res* [online]. 2012 [cited YYYY Month dd]; 11(40):213-214. Proceedings of the XXVI GIRI Symposium; 2012 Sep 20-22; Florence (Italy). GIRI; 2012; Available from: <http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/576/620>