

## Turnip crops benefit from agrohomeopathy

Abasolo-Pacheco F, Ojeda-Silvera CM, Cervantes-Molina JE et al. Agronomic behavior of the turnip (*Brassica napus L.*) during the application of homeopathic medicines. Terra Latinoamericana 2020; **38**:67-82.

### Synopsis

Research shows that agrohomeopathy can improve the health status of plants like wheat, peas and cabbage, thereby potentially reducing the need for pesticides and other agrochemicals<sup>1-5</sup>. The randomised controlled study published in 2020 by Abasolo-Pacheco et al. adds to this body of evidence showing a beneficial effect of three different homeopathic treatments on the development of turnip crops (*Brassica napus L.*)<sup>6</sup>. Turnip is a fundamental component of the Ecuadorian diet and growing large amounts in an environmentally conscious way is a challenge.

The study evaluated the effects of homeopathic medicines on the development of the three growing phases of turnips: germination, emergence and vegetative development. The homeopathic medicines *Silicea terra (SiT)*, *Natrium muriaticum (NaM)* and *Phosphoricum acidum (PhA)* were used in two different potencies<sup>[1]</sup>, 7CH and 31CH. This experiment therefore tested six different homeopathic treatments: *SiT* 7CH and 31CH; *NaM* 7CH and 31CH; and *PhA* 7CH and 31CH. Each homeopathic treatment was tested three times, comparing against control groups treated with water only.

During the germination and emergence phase, the following variables were analysed: percentage of seeds germinated, length of stem and radicle, and fresh and dry weight of the aerial part. During the vegetative development stage, plant height, stem diameter, number of leaves and weight were examined on days 15, 30 and 45 of treatment.

A 100% germination rate was obtained with the homeopathic treatments *SiT*-7CH, *PhA*-7CH and *NaM*-31C – a result that was significantly higher than the control group (83.5% germination rate,  $p < 0.05$ ). Furthermore, *PhA* 7CH and *NaM* 31C significantly stimulated stem growth (3.4 cm vs. 2.63 cm control;  $p < 0.05$ ). The homeopathic medicine *SiT* 7CH yielded seedlings with the greatest radicle length (5.63 cm vs. 4.05 cm) and the highest fresh biomass, compared to the control (0.025g vs. 0.015g,  $p < 0.05$ ).

In the emergence phase, when the plant breaks through the soil, plants treated with *NaM* 7CH had the greatest average stem length (8.64cm vs. 7.33 cm,  $p < 0.05$ ) and radicle length compared to the control group (4.07 cm vs. 2.74 cm,  $p < 0.05$ ). All six homeopathic medicines positively influenced the vegetative development stage (when the plant reaches 15 cm until flowering). This was seen at all three time points. On days 30 and 45, the homeopathic

---

<sup>[1]</sup> Homeopathic medicines are manufactured using a process involving alternating steps of dilution and succussion (vigorous shaking). The 'potency' denotes how many times these steps were repeated during manufacturing e.g. 7CH means the process has been repeated 7 times, using 1:100 dilution. Different potencies of the same homeopathic medicine are found to have different effects.

treated plants were significantly higher than the control plants. The greatest plant height was obtained with *NaM* 7CH (43.2 cm vs. 31.17 (control)). Plants treated with *SiT* 7CH had the highest number of leaves and the broadest stem diameter. These plants also showed a significantly higher total plant fresh weight compared to the control group (1020 g vs. 400 g,  $p < 0.05$ ).

The study also included an economic analysis yielding that the highest cultivation was obtained using *SiT* 7CH (34,250 kg/ha), followed by *NaM*-7CH (33,000 kg/ha) vs. 18,575 kg/ha in the control group ( $p < 0.05$ ). These two treatments were also linked to the best benefit/cost ratio and profitability compared to the control group.

The study shows positive effects of homeopathic medicines – especially *Silicea terra* and *Natrium muriaticum* – on the numerous development phases of turnip. Although the lower potencies (7CH) seemed to have a greater effect, good results were also obtained with high potencies for the three homeopathic medicines studied. These results confirm previous findings by other research groups that have found positive effects of these, and other homeopathic treatments, on the development of various nutritionally important plants like wheat, peas and cabbage.<sup>7,8,9</sup>

Considering both the direct benefits on crop production and positive associated economic impact, the results of the current study indicate that agricultural homeopathy is a sensible option for incorporation into horticultural practices. These results are particularly important as they also suggest that homeopathy may offer an environmentally beneficial alternative to toxic agrochemicals.

## References

1. Mazón Suástegui, JM, Murillo-Amador B, Batista-Sánchez D et al Natrum muriaticum as an attenuant of NaCl salinity in basil (*Ocimum basilicum* L.). *Nova Sci*, 2018; **10(21)**: 120-136.
2. Mazón-Suástegui, JM., Ojeda-Silvera CM, García-Bernal, M. et al Agricultural homeopathy: A new insights into organic's. 2019 IntechOpen Books.
3. Alvarado-Mendoza, AF, Jirón-Giler, JI, Mazón-Suástegui JM et al. La agrohhomeopatía: una alternativa para el control del patógeno *Fusarium oxysporum* f sp *lycopersici*. *El Misionero del Agro*, 2017; **16**: 54-65.
4. Modolon, TA, Boff, B, Boff, MI et al. Homeopathic and high dilution preparations for pest management to tomato crop under organic production system. *Hortic. Bras*, 2012. **30(1)**: 51-57
5. Bonato, CM, Proença GT, Reis B. 2009. Homeopathic drugs *Arsenicum album* and *Sulphur* affect the growth and essential oil content in mint (*Mentha arvensis* L.). *Acta Sci. Agron*. **31**: 101-105.
6. Abasolo-Pacheco F, Ojeda-Silvera CM, Cervantes-Molina JE et al. Agronomic behavior of the turnip (*Brassica napus* L.) during the application of homeopathic medicines. *Terra Latinoamericana*, 2020; **38**: 67-82.
7. Betti, L, Brizzi, M, Nani, D et al. Effect of high dilutions of *Arsenicum Album* on wheat seedlings from seed poisoned with the same substance. *Br. Homoeopath. J*, 1997; **86**: 86-89.
8. Panda, SS, Mohanty SS, Dhal NK. Effects of potentised homeopathic medicines on the germination, growth and photosynthetic activity of *Pisum sativum* L. *Recent Res. Sci. Technol*, 2013. **5**: 11-14.
9. Rossi, F, Tavares Melo PC, Ambrosano, EJ et al. Aplicação do medicamento homeopático Carbo vegetabilis e desenvolvimento das mudas de alface. *Int. J. High Dilut Res*, 2006; **5**: 4-7.