



One Health
Student Conference
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The Use of Homeopathy in Agriculture and One Health Concept

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Introduction

ONE HEALTH

Healthy ecosystems

Healthy animals

Healthy humans

The concept of **One Health**, as a unifying approach that aims to balance and optimize the health of people, animals and ecosystems, recognizes that the health of humans, animals, plants and the environment are closely linked and interdependent (1), (2).

The roots of this concept can be traced in the ancient times, when **Hippocrates**, in his work "Airs, Waters and Places," recognized the connection between public health and a clean environment (19).



W.H.O.

According to the **World Health Organization (W.H.O.)**, areas of work where One Health approach is particularly important include food safety, zoonotic disease control, laboratory services, neglected tropical diseases, environmental health, and antimicrobial resistance (AMR) as a cross-sector threat.

Homeopathy, the science and method of high dilutions used accordingly to the simillimum principle, despite controversies which still exist, when applied in agriculture could help in reaching many of the goals of **One Health strategies**.



Objectives

Our goal is to show that homeopathy used in agriculture and environment can represent a tool to be applied as an integrated discipline within the concept of One Health.

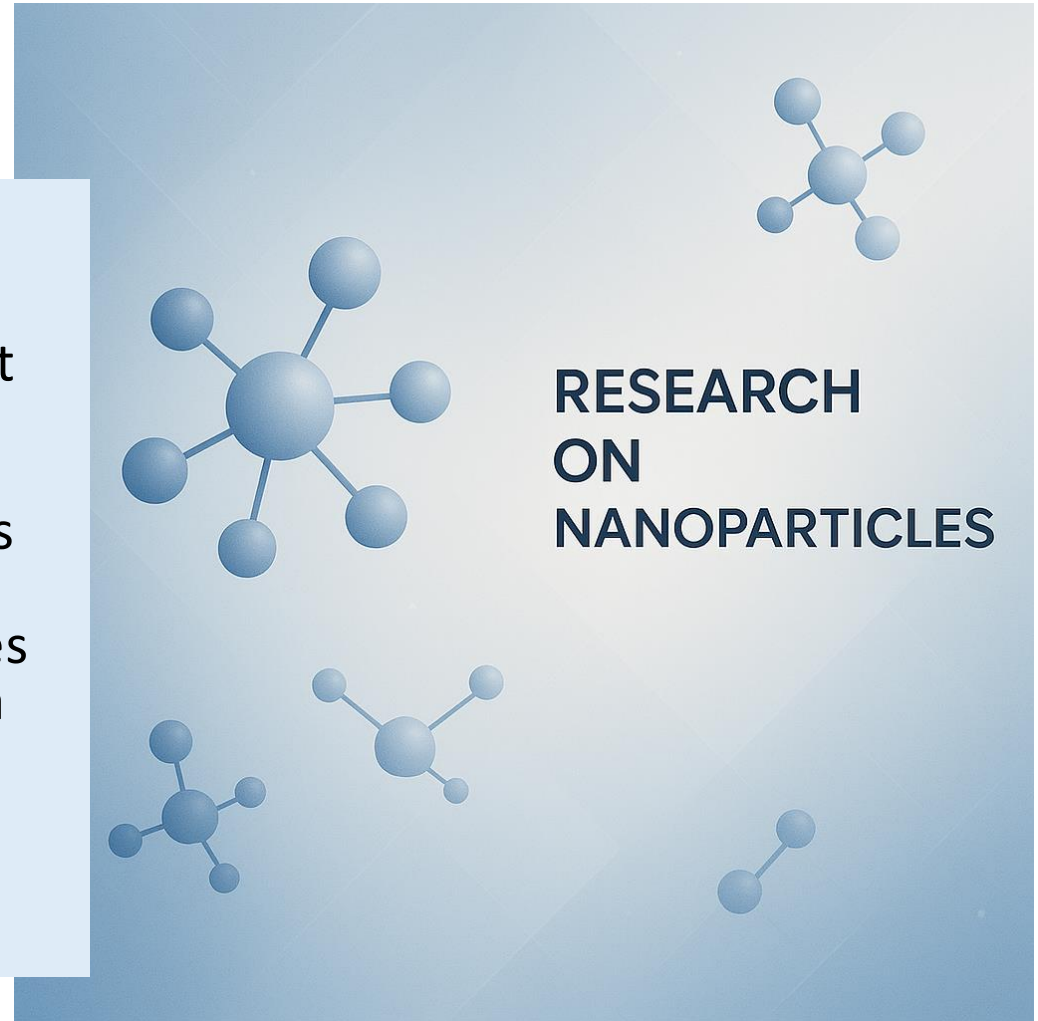
In the same time, we want to underline that research and experience accumulated in agrohomeopathy shows that results of homeopathic treatments differ from placebo and argue for a new path towards sustainability in agriculture, with no residual impact for agroecosystems.





Relevant studies

- High dilutions used in homeopathic preparations act beyond the threshold of the Avogadro number and in the last decade, many researchers demonstrated that these dilutions contain nanoparticles which explain their action, via an epigenetic mechanism (Chikramane, Khuda-Bukshs, Rajendran) (11), (15), (17).





HRTEM Images ⁽¹⁵⁾

Fig. 1. Nanoparticles of *Natrium muriaticum* 6 CH at 100 nm scale (after Rajendran, 2017)

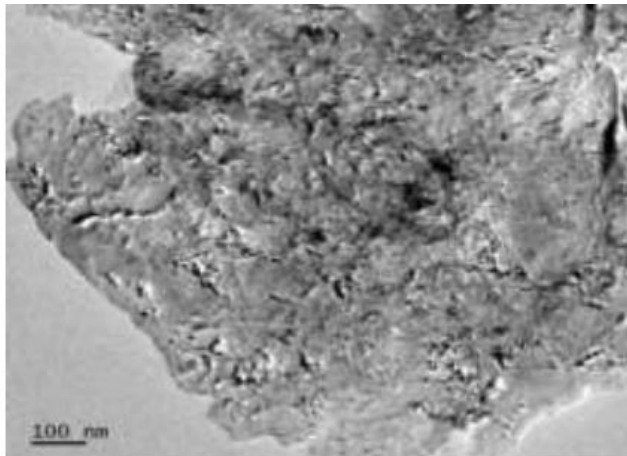


Fig. 2. Nanoparticles of *Natrium muriaticum* 6 CH at 20 nm scale (after Rajendran, 2017)

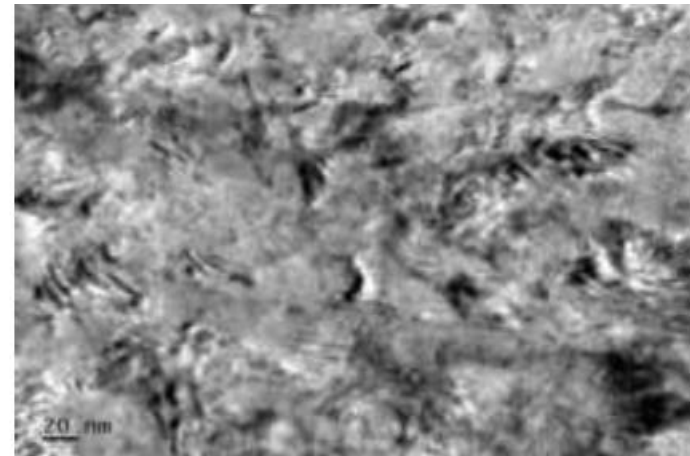




Table 1 (after Bellavite),(7) - Examples of effects of homeopathic dilutions in cellular models *in vitro*, published in peer-reviewed literature

| 1M | Thuja ²³ | 10 ⁻³ of MT | DLA cells | ↑↓Gene expression (whole genome analysis) |
|------------------|---|--|-------------------------|--|
| 4X | Podophyllum ²⁴ | 10 ⁻⁷ Mol/L (podophyllotoxin) | Human neutrophils | ↑ free radicals production ↓ Adhesion |
| 4X–6X (complex) | Arnica, Calendula, Hypericum and Symphytum ²⁵ | Not reported | 3T3 fibroblasts | ↑ Cell movement, chemotaxis |
| 6X–12X (complex) | Calcium fluor., Magnesium phos., Acidum silicicum ^{26, 27} | 10 ⁻⁷ Mol/L (fluoride) | Rat osteoblasts | ↑ Osteogenesis |
| 2C | Histamine ^{28, 29} | 10 ⁻⁴ Mol/L | Human basophils | ↓↓ CD203c expression |
| 2C | Gelsemium s. ^{30, 31} | 10 ⁻⁹ Mol/L (gelsemine) | Human neurocytes SHSY5Y | ↓↓ Gene expression (whole genome analysis, RT-array) |
| 2C | Gelsemium s. ³² | Not reported | Cervical cancer HeLa | ↑ Cytotoxicity |
| 6X | Phosphorus, Sulphur ³³ | 10 ⁻⁶ Mol/L | Human neutrophils | ↓ free radicals production |
| 8X | Magnesium phos., Manganum phos. ³³ | 10 ⁻⁸ Mol/L | Human neutrophils | ↓ free radicals production |
| 3C, 5C, 7C | Apis mell. ³⁴ | Not reported | Human prostate RWPE-1 | ↑↓ expression of different groups of genes (whole genome analysis) |
| 5C | Gelsemine ³⁴ | 10 ⁻¹⁰ Mol/L | Rat neurons | ↑ Neurosteroids |

Table 2 (Bellavite, 2015) (8)



Recent evidence of Homeopathy and genome analysis

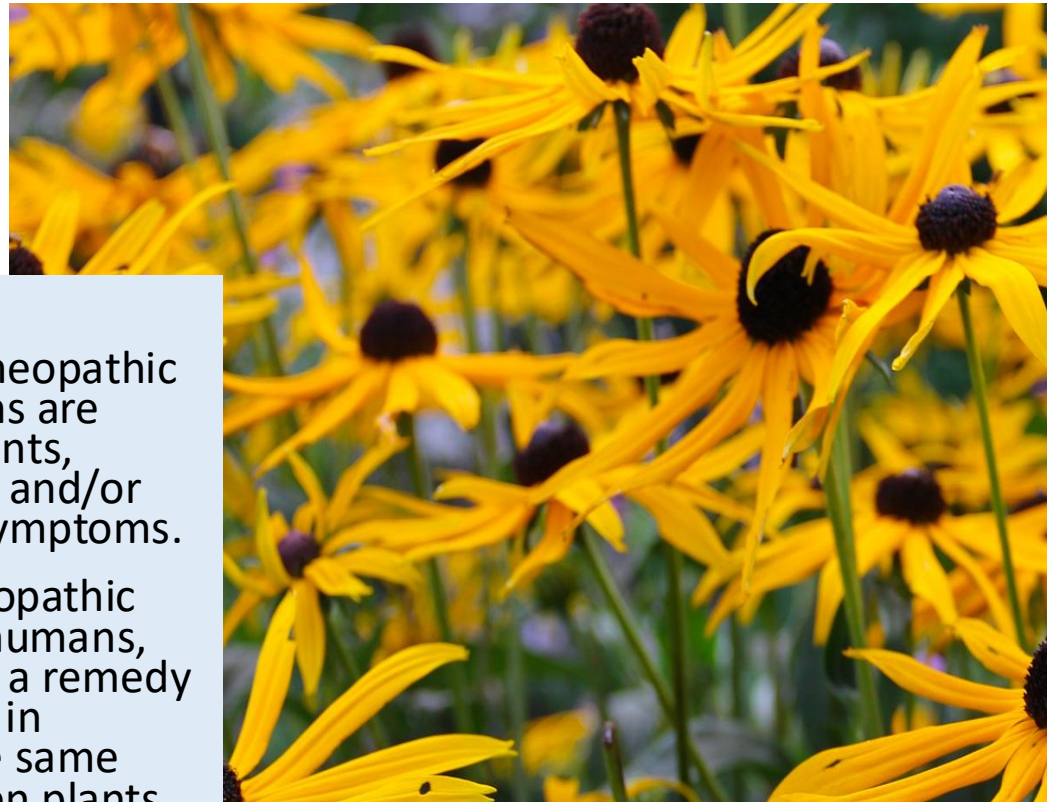
| | Potencies | Cell type | Effect | REF |
|---|---------------------|---------------------------------------|---|--|
| Carcinosinum | MT, 30C, 200C | DLA cells | ↑ specific gene expression (p53 pro-apoptotic) | (Sunila et al. 2009) |
| Arsenicum alb. | 30C | Saccharomyces cerevisiae, E. coli | ↑ Resistance to arsenicum toxicity ↓↑ expression of specific genes (apoptotic, stress response proteins) | (Das et al. 2011; De et al. 2012 of Khuda-B.group) |
| Carcinosinum, Hydrastis, Ruta or Thuja | 200C | DLA cells | ↑ Apoptosis, ↓↑ Gene expression (whole genome analysis) | (Preethi et al. 2012) |
| Gelsemium s. | 2C, 3C, 5C, 9C, 30C | Human neurocytes SHSY5Y | 7 genes ↑ 49 genes ↓ expression (whole genome analysis) ↓ gene expression (RT-Array, 2C) | (Marzotto et al. 2014; Olioso et al. 2014) |
| Apis mellifica | 3C, 5C, 7C | Human prostate | ↑↓ expression of different groups of genes (whole genome analysis) | (Bigagli et al. 2014) |
| Rhus tox. | 30X | Primary cultured mouse | ↑ specific gene expression (COX-2), ↓ specific gene expression (collagen II; de-differentiation role) | (Huh et al. 2013) |
| Arsenicum alb. | 45X | Arsenic-intoxicated wheat seeds | ↑ Germination ↓ Gene expression levels | (Marotti et al. 2014) |
| Condurango | 30C | H460-non-small-cell lung cancer cells | ↓↑ expression of specific genes (apoptotic), ↑ Apoptosis, oxidative stress, mitochondrial depolarization | (Sikdar et al. 2014) |





Same preparations...

- It was proved that same homeopathic preparations used for humans are indicated for animals and plants, depending on the symptoms and/or depending on the cause of symptoms.
- A typical example of a homeopathic preparation useful both for humans, animals and plants is **Arnica**, a remedy which treats effects of injury in humans, but is used with the same indication in animals and even plants (injuries after pruning, repotting, relocation) (12), (15), (17).





Same preparations...

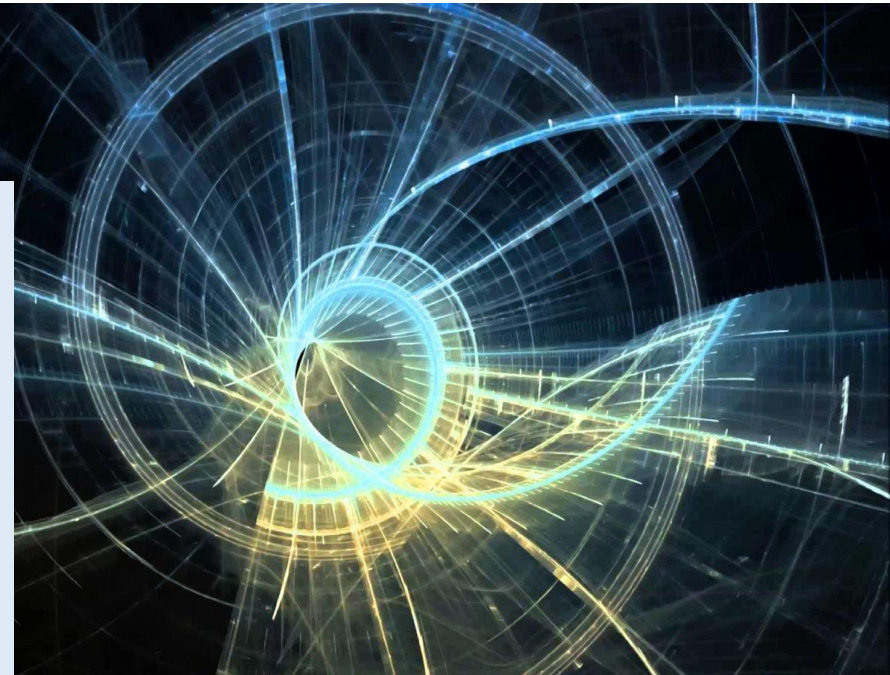
- Another example is *Calendula* as a treatment for injuries when lacerations are present, in humans, animals or plants.
- *China officinalis* is a treatment for effects after loss of fluids in humans (e.g. after hemorrhages), but a similar indication is met in plants after juice loss (e.g. after an infestation with sucking pests).
- *Dulcamara* is ideal for damages caused by wet weather and consequences after change of weather from warm and dry to cold and damp, this being similar both in humans and plants (12), (15),(17).
- **Systems theory** has already explained how living organisms depend for their life processes on the constant exchange of energy, matter and information, with the external environment, at all levels (Bertalanffy, 1967) (4).





Quantum electrodynamics

- An interesting approach (Manzalini and Galeazzi, 2019) comes to the same idea and **is consistent with One Health** by regarding homeopathy through quantum electrodynamics.
- Every component of the agroecosystem has its own macro-wave with a specific oscillatory pattern, resonating with other oscillatory patterns.
- This can explain why homeopathy is functioning for the whole environment (9).





Research from Brazil



Researchers from Brazil (**Boff, Casali 2009**) are among the first who made the assertion that homeopathy can be applied to humans, plants and animals and a successful homeopathic treatment for plants will influence all elements of an agroecosystem, including farmers (9), (10).



Studies

As shown by many studies (Frass 2005, Zanasi 2014 etc), homeopathy is an important help in reducing antibiotic use in human patients, but also in animals (Weiermayer et al, 2016) (13), (21), (22).

2005

2019

Concerning animal health, a recent meta-analysis (Zeise and Fritz- 2019) concerning bovine mastitis shows that homeopathic treatments differ from placebo and reduced by 75% the use of antibiotics (20).



Challenges

- The greatest challenge in agrohomeopathy is the application of the principle of similarity, as the symptoms from actual books are described for humans and animals and from here, different approaches are needed.





Numerous experts apply their understanding of Materia Medica for humans by drawing parallels with plants.

ANALOGIE CARE INDICĂ REMEDIUL THUJA

NEGI PLANTARI



**GALE DE ACERIA KUKO
PE FRUNZE DE GOJI**



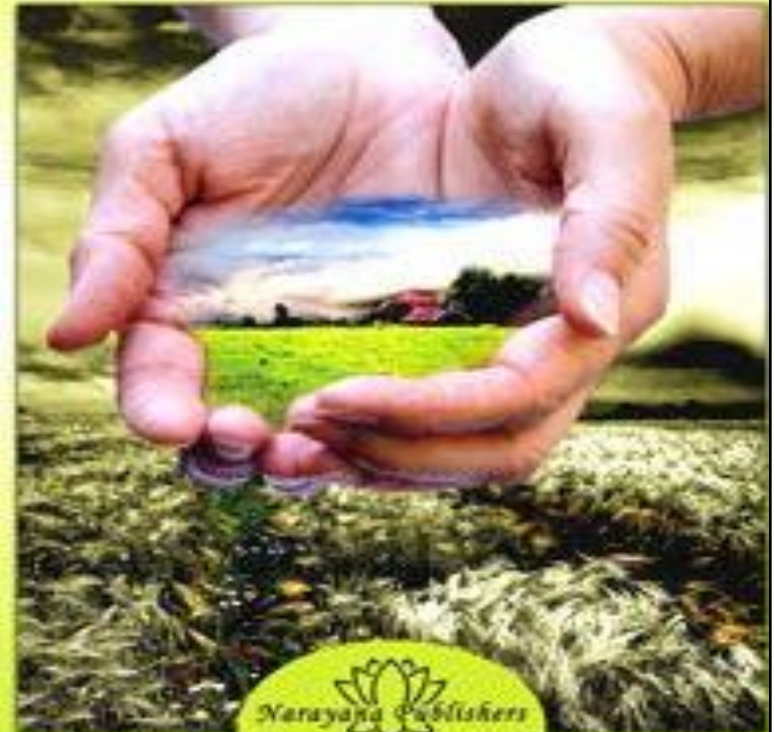


In some cases, there are books of *Materia medica* and compendia developed for plant pathology (Kaviraj, 2006, Bonato, 2007, Tichavsky, 2007, Maute, 2011), but this work is only at its beginning.

Vaikunthanath Das Kaviraj

Homeopathy for Farm and Garden

The Homeopathic Treatment of Plants





Results

- To apply **homeopathy** in agriculture and have results on a large scale, it is necessary to integrate it with **social sciences**. The use of homeopathy in agriculture is already recognised as an effective social technology (Andrade and Casali 2011).
- In **Brazil**, where homeopathy is legislated in national health system and in organic food production systems (2007), farmers are trained by the Agricultural Research and Rural Extension Service Agency (EPAGRI) of Santa Catarina State and adopted homeopathy in their activity. Since 2012, courses of 6 months were held and farmers received homeopathic kits for general use.
- Other countries which implemented agrohomeopathy are **Italy, Spain, India and Mexico**.





Conclusions

- Homeopathy for agriculture and environment seems the **ideal method** to reestablish the homeostasis of living organisms, being at the same time efficient and economical.
- **More scientific trials are needed** to confirm the existing experiments, but research already points to the important role that homeopathy can play to attend the goals of One Health strategies.
- **Specialists in agrohomeopathy can provide** farmers, agronomists and veterinarians **with solid knowledge**, enabling the method to be applied in daily activity. The outstanding example of Brazil should be a model for many other countries, and for Romania.

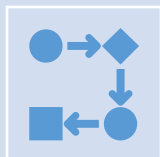




As a final conclusion to the presentation, let us say:



“Sapere aude”/Dare to think!
(Horace and S. Hahnemann)



See what all can see, but dare to think like nobody else did before...



Samuel Hahnemann

Organon der Heilkunst

Aude sapere

Wörterbuch und
herausgegeben von
Josef M. Schmidt
Standardausgabe der
6. Auflage

 Haug



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Thank you for your attention!

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