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THE USE OF HOMEOPATHY IN THE AGROECOSYSTEM AND THE ONE HEALTH CONCEPT

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Abstract

The concept of One Health has emerged as a unifying approach to sustain, balance and optimize the health of people, animals and ecosystems. It recognizes that the health of humans, animals, plants, soils and the environment are closely linked and interdependent. This paper explores the use of Homeopathy in agriculture, as a scientific and holistic method which demonstrates and applies this unifying approach. Uniquely, the method uses the same natural remedies for humans, animals, plants and soil basing its indications on the interconnectedness of the ecological elements and on the dynamics of an agroecosystem. At the same time, the homeopathic preparations, are not focused on eliminating or killing organisms but rather work on the reestablishment of the homeostasis of the living organisms at very small doses, meaning they produce no residual harming effects to the environment and are efficient and economical, offering one of the best possibilities for the three pillars of the One Health Approach (people, animals, environment), therefore supporting the food systems and sustainable agricultural practices.

Key words*: Systemic health, homeopathic preparations, biostimulation, agriculture and environment, vitality.*

INTRODUCTION

Within the philosophical and methodological enquiry for the global sustainable food systems, the concept of One Health, emerges as a unifying approach that aims to sustain, balance and optimize the health of people, animals and ecosystems. It recognizes that the health of humans, animals, plants, soils and the environment are closely linked and interdependent (Capra & Luisi, 2014; Adisasmito et al., 2022). The roots of this concept can be traced from ancient times, when Hippocrates, in his work "Air, Waters and Places" recognized the connection between public health and a clean environment.

Within the health-based strategies for agroecosystems, the use of low-residual impact technologies and natural biostimulants is included. One of these methods is Homeopathy and its application to agriculture and environment (Boff et al., 2021). Homeopathy is a science and method of vitalizing the organisms by applying dynamized high dilutions used accordingly to the *simillimum* principle.

In the last 20 years, the research and practice using Homeopathy in agriculture and environment has been implemented and expanded in countries such as Brazil, Mexico, India, Germany, Italy and others (Faedo et al., 2024).

Scientific data and field experience have evidenced that the same homeopathic preparations used for humans are effective also for animals and plants. This is due to homeopathy`s unique methodology which allow an ecological reinterpretation of symptoms observed in complex living beings.

The dynamized high dilutions (DHD) act beyond the threshold of the Avogadro number, where mater becomes electromagnetic information patterns, operating in terms of biostimulation and morphogenesis, signalizing resonance patterns within the complexity of the agroecosystem (Bertalanffy, 1973; Sheldrake, 2013).

Research has evidenced they also contain elemental nanoparticles (Chikramane et al., 2010; Rajendran, 2017); with action via epigenetic mechanisms (Khuda-Bukhsh, 1997; Bellavite et al., 2015).

These theoretical bases of fields of information and organization of complexity in Nature have 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.

An interesting approach is explored by Manzalini & Galeazzi (2019), connecting the health of the system through quantum electrodynamics. The authors discuss on how every component has its own field-wave with a specific oscillatory pattern, resonating with other ecological oscillatory patterns. This illustrates how the pattern of the homeopathic remedies resonates across the system/organism, and why Homeopathy as a therapeutic system functioning for humans, animals, soil, plants, and for the whole environment.
So, Homeopathy, the Hippocratic-Hahnemannian Therapeutic System (Hahnemann, 1810), acts as a genuine holistic method which converges with the One Health approach.

OBJECTIVES

The objective of this work is to open the dialogue on how Homeopathy can be used as an agroecological method applied successfully in agriculture and the environment, illustrating this facet by exploring a few practical examples from the scientific literature. As an integrated discipline within the concept of One Health, Homeopathy applied in agriculture can help fostering innovative paths towards sustainability and productivity, with low residual impact for the agroecosystems.

METHODOLOGY

A narrative literature review exploring studies using homeopathic preparations across biological kingdoms is presented.

- **Ecolinguistics, health parameters and ecological correlations**

A typical example of a homeopathic preparation which can be useful both for humans, animals and plants is *Arnica*. It is a remedy which treats successfully the effects of an injury in human patients, but it is used with the same indication in animals and even in plants, for injuries after pruning, repotting, relocation. Another example is *Calendula* as a treatment for injuries especially when lacerations are present, a problem which can be treated in humans, animals or plants, the remedy being the same. *China officinalis* is a good treatment for effects after loss of fluids in humans (e.g. after haemorrhages), but a similar indication is met in plants after juice loss (e.g. after an infestation with sucking pests). *Dulcamara* is ideal for treating damage caused by wet weather and the consequences after a change of weather from warm and dry to cold and damp, this modality being similar both in humans and plants.
These initial examples demonstrate how using ecolinguistics allows one to expand use of classical homeopathic remedies and their symptoms to application on different living organisms.

- **Human and animal studies**

Studies (Frass et al., 2005; Zanasi et al., 2014; Macri, 2019) show that homeopathy is an important help in reducing the antibiotic use in human patients, but also in animals (Weiermayer et al., 2020).
Viksveen (2003), in an overview, explored homeopathy as a potential help to avoid unnecessary use of antibiotics, which offers a possible solution in future.
For animal health, a recent meta-analysis (Zeise & Fritz, 2019) concerning bovine mastitis shows that homeopathic treatments differ from placebo and many case reports point also to the efficiency of homeopathy in treating infections.
Main findings are presented in Table 1.

Table 1. Role of homeopathy in human and animal health (after Tripathi et al., 2024)

Authors	Methods	Results/Conclusions
Frass et al. (2005)	70 patients admitted to the MICU at the "University of Vienna" were evaluated for eligibility, and all eligible individuals were enrolled in the study. Each patient underwent randomization and received treatment; three participants had to be excluded due to incomplete data. All enrolled patients survived.	The use of homeopathic treatment appears to positively impact the extended survival of individuals experiencing severe sepsis. However, conclusive recommendations require additional research. A notable impediment to further research and implementation is the scarcity of trained homeopaths available.
Macri (2019)	A total of 90 children were enrolled in the study and randomly assigned to either the homeopathic treatment group or the control group, with each	Existing literature provides evidence that the utilization of CAM, including homeopathy, has the potential to decrease reliance on antibiotics.

Authors	Methods	Results/Conclusions
	group consisting of 45 patients. Antibiotics were administered to 33.3% of children in the treatment group, whereas 62.2% of children in the control group received antibiotics (*P*=0.006).	This bears favourable implications for strategies aimed at addressing the challenge of antibiotic resistance.
Zeise & Fritz (2019)	Homeopathic studies up to February 2018 were gathered through searches in the Carstens Foundation's online library, published meta - analyses, references from mastitis - related doctoral theses, and online databases like "NLM pubmed.de, orgprints.de, and researchgate.com".	In brief, homeopathy was effective in preventing and treating mastitis, especially in clinical cases. Challenges stem from subclinical cases lacking observable signs, complicating remedy selection.
Viksveen (2003)	An overview of the existing scenario regarding antibiotic resistance, along with an exploration of homeopathy as a potential substitute for antibiotics.	Global antibiotic resistance poses a public health challenge. Increased funding for research on homeopathic remedies, supported by positive study outcomes, is crucial for addressing recurring infectious diseases.
Weiermayer et al. (2018)	On June 17, 2016, a four year-old gelding with an acute injury to the right front leg was brought to an Austrian clinic specializing in equine medicine.	This case report shows the need for further investigations into the efficacy of *Silicea terra* and other homeopathic remedies in instances of multidrug - resistant bacterial infections in horses or animals overall.
Zanasi et al. (2014)	The research, spanning January to December 2012 at a specialized cough management clinic in Bologna, Italy, included 80 consecutive patients with uncomplicated upper respiratory tract infections.	Findings contribute to the increasing evidence supporting the safety and efficacy of homeopathy in managing acute productive cough.

- **Environmental studies**

Research by Aparicio et al. (2020) on *Phosphorus* 30 C and Pinto et al. (2021) on *Artemia salina* with *Mercurius* 30 C and their influence when used in lake and/or sea water in various experiments, underlines the environmental impact of homeopathic preparations, opening a new perspective on the role of homeopathy (Bonamin, 2014; 2020), besides the influence which homeopathic treatments can have by achieving a better health of all the elements of agroecosystems (Table 2).

Table 2. Role of homeopathy for the environment (after Tripathi et al., 2024)

Authors	Methods	Results/Conclusion
Aparicio et al. (2020)	Samples of water were collected from different times and locations within the lake system both before and after seeding. Comparative controls involved obtaining water from a nearby lake that had not undergone any treatment, with a volume of 1385 m^3.	The research suggests that *Phos* 30 C influence can spread across extensive water volumes, inducing system alterations in a connected lake. Monitoring these changes with solvatochromic dye MV allows the assessment of homeopathic medicines in large-scale applications.
Pinto et al. (2021)	*Artemia salina* cysts were exposed to mercury chloride at a concentration of 5.0 µg/mL during the hatching process, with varying potencies of mercury chloride (6CH, 30CH, 200CH) added to seawater. The study conducted four sets of nine experiments, investigating cyst hatching percentage, levels of soluble total mercury, precipitated mercury content, and potential physicochemical indicators of biological activity of mercury chloride.	Mc 30 CH is theorized to enhance *Artemia salina*'s natural resilience, potentially influencing hatching rate and mercury bioavailability, suggesting protective effects.
MV: Methylene violet		

RESULTS AND DISCUSSIONS

According to the World Health Organization (W.H.O.), among areas where One Health approach is particularly important, there are many of the domains where homeopathy applied in agriculture and environment can play a significant role, like: food safety, zoonotic disease control, environmental health and antimicrobial resistance (AMR).

- **Applying one health concepts**

Researchers from Brazil (Boff, 2009; Casali et al., 2009) are among the first who made the assertion that homeopathy can be applied to all the elements of an agroecosystem, after a careful observation, so that a successful homeopathic treatment for plants will influence all other elements, including the farmers and the whole environment (Maute, 2011).

The greatest challenge in using homeopathy in agriculture and environment remains the application of the principle of similarity (Carneiro, 2011), as the symptoms from classical *Materia Medica* are described for humans and from here, different approaches are needed. Ecolinguistics helps now to reinterpret the language for broad application on complex living systems (Table 3).

Table 3 - *Materia Medica* for some farm crops (after De Rezende, 2009)

Homeopathic Remedy	Symptoms
Arnica Montana	In cases of stress such as when transplanting, thinning, pruning, water deficiency and sudden damage by insects/ frosts/ harvests
Belladonna	Too many ants (spray remedy on leaves, plants and pathways)
Carbo vegetabilis	When there is general weakness, e.g. after insect attack, defoliation, water deficiency, close spacing, flower loss, death of buds, plants in compacted soils
Staphisagria	Attack of aphids, nematodes or mites, plants in excess shade, grafted plants and artificial insemination in animals, flea infestations
Nux vomica	Plants and soils polluted by pesticides
Sulphur	Excess transpiration, plants with high fertility needs, itches and scabies in animals (the remedy induces detoxification in plants, soils and animals)
Calcarea carbonica	Plants unresponsive to good fertility, chlorosis, seedlings sensitive to cold, delay in new root growth, slow plant development and leaf yellowing.

Many specialists use their knowledge for humans and make analogies with animals and plants, using repertorisation strategies to indicate the appropriated treatments.

In some cases, there is a literature of *Materia Medica* already developed for plant pathology (Kaviraj, 2006; Bonato, 2007; Tichavsky, 2007; Maute, 2011), but this work is only at its beginning.

To be able to apply dynamized high dilutions in agriculture and have results on a large scale, it is necessary to integrate this with social sciences, as the human factor is crucial and not separated from the environment it is inserted in.

The method needs specialized knowledge, therefore, training farmers and citizens who are interested in using a complex systemic therapeutic method to produce food free from pesticides residues, is needed.

In this way the use of homeopathy in agriculture became an effective social technology (Andrade & Casali, 2011). In Brazil, where homeopathy has been legislated for public use in the national health system, as well as in organic food production systems (2007; 2011), farmers are trained by the Agricultural Research and Rural Extension Service Agency (EPAGRI) of Santa Catarina State/Brazil and other state agencies, adopting homeopathy in their toolkits with outstanding results (Córdoba Correoso et al., 2022).

Homeopathy became a specialization discipline not only for physicians, but also for agronomists, veterinarians, psychologists, nurses, dentists, gardeners and farmers. For instance, since 2012, courses of 6 months (150 hours) were organised by the Laboratory of Homeopathy and Plant Health based in the EPAGRI of Lages, where members of different communities of practices received training on the method and homeopathic kits for general use in farms, plants, soil, animals and the environment.

CONCLUSIONS

From this literature analysis, it is clear that using Homeopathy to treat the environment, plants, animals and humans, focusses on the reestablishment of homeostasis in living

organisms. Its small doses, with no residual effects to the environment, are at the same time a method to increase the sustainability of the agroecosystem, being agronomically efficient and economically feasible.

The literature also identified that more agronomical trials, particularly at bigger scales, mainly on field conditions are needed to comprehend better the possibilities and limitations of using DHDs in agriculture. Nonetheless, the robust research already done in the topic represents basal standpoints to advance the important role which Homeopathy could play on the integration of multidisciplinary disciplines and communities of practices helping to attain the goals of the One Health and a sustainable future for all.

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