

# **Biodynamic agriculture**

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Here, we will present some important elements for understanding biodynamic agriculture, how it was conceived and developed over a period of almost 100 years, being considered by those who practice and experience it as much more than a method of agricultural production without poisons and chemical fertilizers.

Rudolf Steiner (1861-1925), an Austro-Hungarian scientist, systematized the gnoseology contained in Goethe as a scientific basis for the development of the science of the spirit or anthroposophy. Thus, biodynamic agriculture, anthroposophic medicine and pharmacology, Waldorf pedagogy, among others, were born. Anthroposophy is not a religion; it is a science that allows the construction of knowledge that integrates matter and spirit. For Steiner, thinking is the link between man and spiritual reality, the cradle of freedom (Klett; Miklós, 2001). Thus, in 1924, the cornerstone of the Biodynamic Movement began in the form of a cycle of 8 lectures for farmers. This congress was held in Koberwitz, Poland. It is the first alternative agriculture movement to emerge in an organized way in the West, before organic and natural agriculture.

The basic aspect of biodynamic agriculture is understanding the agricultural property as an individual organism with its different components (soil, plants, animals, natural and human resources). The method considers three basic points: a) the cycles of substances and forces (forms of activity); b) the interrelationships between the components and the location; and c) the organization of the agricultural enterprise (Koepf; Pettersson; Schumann, 1983).

Its main goal is to fertilize the soil in a lasting way and, based on the construction of biological activity, to modify the physical and chemical conditions of the soil. To this biological aspect must be added the dynamic aspect, which consists of the use of homemade preparations using organic and mineral substances in a very diluted form (homeopathic), which forms the basis of the biodynamic method. Such specific and original contributions of biodynamics start from the use of preparations similar to those of homeopathy and calendars based on research on the influence of astronomical cycles on the earth and plants. Biodynamic agriculture is based not only on practices common to organic agriculture but also on the

recognition that the health of the soil, the plant and animal world, and human beings themselves depend on a broader relationship between the forces that stimulate natural processes. (Koepf; Pettersson; Schumann, 1983). Thus, it aims to renew agricultural management, heal the environment and produce truly decent food for human beings.

This impulse wants to restore agriculture's original creative, nurturing cultural and social strength, lost on the way to industrialization directed towards monoculture and the mass rearing of animals outside their natural environment. Industrial agriculture prioritized large-scale production, with intensive use of pesticides, machinery and petroleum-based energy, leading to environmental contamination and concentration of land ownership, among other negative socio-environmental impacts.

Biodynamic Agriculture wants to help those who work in the field to overcome the materialistic one-sidedness in the conception of nature so that they can, each one for himself, find a spiritual relationship with the soil, with the plants and animals, and with fellow human beings. Not just as a method of agriculture but as a spiritual conception of life based on anthroposophic spiritual science, as a path of human development.

Biodynamics wants to remind everyone that "agriculture is the foundation of every culture, it has something to do with everyone". The central point of biodynamic agriculture is the human being, who completes creation from his spiritual intentions based on a true cognition of nature. This one wants to transform his farm into an organism in itself complete and maximally diversified, an organism that is from itself capable of producing a renewal. The natural site must be elevated to a "kind of agricultural individuality".

The basis for such a transformation is harmoniously integrating all agricultural environmental elements, such as field and garden crops, pastures, fruits and other permanent crops, forests, agroforests, hedgerows and bushes, water sources, floodplains, etc. If the agricultural organism organizes itself around these elements, permanent fertility is born and, with it, the health of the soil, plants, animals and human beings.

The start and continuity of this upward development of the entire agricultural organism are ensured by the biodynamic management of agricultural practices and the use of preparations, presented for the first time by Rudolf Steiner at the Pentecost Congress in 1924. These are preparations that increase and streamline the intrinsic capacity of the plant to be a producer of nutrients by chemical mobilization, transmutation or

transubstantiation of the dead mineral or even by harmonizing and adapting the recycling of leftovers from the biomass produced. Preparations that simultaneously support the plant in being a transmitter, receiver and accumulator of the Earth's exchange with the Cosmos, that is, benefiting the entire agroecosystem from the influences coming from the sky around us, such as the light of the sun, moon and planets.

Fertilizing in biodynamics means, therefore, enlivening or enlivening the soil, different from supplying nutrients to the plants.

The only concern one should have is what to do to make it happen. Providing physiological comfort, it is possible to abstain from everything that nowadays seems to be essential in conventional agriculture. In the biodynamic agricultural organism, mineral nitrogen fertilizers, synthetic pesticides, herbicides and growth hormones, etc., are not used. The concept of biodynamic improvement of cultivars or races is in unrestricted opposition to transgenic technology. The feed for the animals is produced on the farm itself, and the number of animals kept is in relation to the natural capacity of the occupied area.

The biodynamic farmer is committed to doing only what he can take responsibility for, namely, what serves the lasting development of "agricultural individuality". This includes growing and selecting your own seeds and adapting and selecting animal breeds. In addition, biodynamic agriculture means a renewed orientation in research, consultancy and professional training.

The biodynamic farmer learns, within the work process, to be a researcher himself, learn to participate and transmit their experience to others and make their establishment a place of professional training for future generations.

A renovation of this nature arouses the interest of people living in cities. They connect to this farm or place, support and help as they can, becoming loyal customers. They collaborate in the formation of regional markets, becoming mutually supportive associates. There are new initiatives of fundamental importance everywhere so that agriculture can face the globalization of the world market with its regional autonomy, such as the CSAs (Community that Sustains Agriculture) that have spread in Brazil and other countries along with the impulse of biodynamics.

In more than 50 countries, biodynamic agriculture is practiced in the service of cultivating the environment and healthy food for human beings. Worldwide, biodynamic products are uniformly marketed under the “Demeter” brand. The Demeter brand guarantees an agricultural culture based on new measures in the cultural (spiritual, political), legal, economic and ecological fields.

### **The biodynamic preparations**

Biodynamic preparations were developed by Rudolf Steiner, based on anthroposophy, before and during the Agricultural Course in 1924. Steiner states that “fertilizing consists of enlivening the Earth” and, based on this statement, brings the preparations as being mediators between the Earth and the Cosmos, helping plants in their task of being Earth's organs of perception.

Biodynamic preparations are similar to homeopathic remedies with regard to the natural substances used, the dynamization processes, the action through forces and not substances, and because they are used in minimal amounts, however, they are not tied to theory or practice of medical homeopathy. They are made from medicinal plants, dung and silicon (quartz), wrapped in animal organs, buried in the ground and subjected to the influences of the Earth and its annual rhythms.

One of their functions is to harmonize the environment where they will be, acting through a dynamic balance between the various components of the agricultural organism. An agricultural organism is understood as a structure formed by soil, plant, animal and human being. Therefore, it works with the interaction of the components of the property.

### **Horn-Dung Prep – 500**

The horn-manure preparation is intended for the soil and all the formative processes of root development, as well as favoring the interaction of the roots with the soil and all living organisms present and active. This preparation has a vertical action, which will allow the establishment of the roots and later the development “upwards” of the plants; it brings strength to the soil, allowing the correct formation of the plants. The horn-manure preparation must be applied at the time of soil preparation, sowing, and

transplanting, that is when you want to give a boost to root development. After dynamization, it should be applied in thick drops, directed to the ground at dusk. It is important to point out that the water used for the dynamization of the preparations comes from rain or a well. Treated water is not used.

### **Horn-silica preparation – 501**

The application is directed to the plant. It acts directly on the photosynthetic functions of the plant, favoring the processes of light and heat. This is the “preparation of light”, which brings forces from the cosmic periphery intensifying the action of sunlight. This preparation is essential for the internal structure of plants and their development, as well as for the nutritional quality of the plants and resistance to diseases. Do not recommend using it in the initial stage of plant development until the roots are well established. It is advisable to use it mainly in pre-flowering and fruiting. Rhythmic application is recommended to strengthen the leaves against fungi and insects, three days in a row at the same time, with repetition every two to three weeks. For fruit maturation, apply in the afternoon.

### **Preparations for compost/biofertilizer – 502 to 507**

The six preparations made from the medicinal plants Yarrow (502), Chamomile (503), Nettle (504), Oak Bark (505), Dandelion (506) and Valerian (507) serve as a supplement to the compost, manure, manure and biofertilizer, leading and organizing the processes of fermentation and decomposition. By means of the prepared compost, they place the plants in a condition in which the forces of the cosmos are more active.

According to practical experiments, it has been proven to be efficient to use Valerian individually in case of frost. This preparation works with the forces of heat and processes in which the element phosphorus is active. For this purpose, the Valerian preparation should be sprinkled over the frost-affected area to strengthen the plant in case of damage. It can also be used preventively the night before frost.

### **Fladen**

It is a form of compost to which medicinal plant preparations are applied and which acts as a conductor/guide in the decomposition processes. It is recommended to use it on mowed plant material, in pasture recovery, after green manuring or on any material to be decomposed in the cultivation field, enriching the humic matter, as well as in agroforestry areas, on the pruned material of tree species and shrubs used as system fertilizers. It is a way of using compost preparations in larger areas, increasing the influence of their action.

### **Dynamizing**

It is a very special movement and of great importance for the ownership and success of the action of the preparations; therefore, it must be done consciously. In this process, the forces contained in the preparations are transmitted to the water through continuous agitation. The dynamizing should preferably be done in wooden barrels, but it can also be made in ceramic or stainless steel. Start by moving the water with the preparation to one side, first on the periphery, and then towards the center to form a vortex; when this vortex is formed, and you can almost see the bottom of the barrel, the movement is reversed, causing chaos and restoring order again with the vortex to the new side. In this way, the association and dissociation polarity is developed. This movement must be repeated for one hour, and the dynamized preparation must be applied within 3 hours.

### **Scientific studies**

Reganold and Palmer (1995 apud Castro, 2005), analyzing soils on conventional and biodynamic properties in New Zealand, demonstrated that soils from biodynamic properties showed higher biological, physical and chemical quality than soils from conventional properties.

Piamonte (1996), in comparative experiments with mineral, organic and biodynamic fertilization on carrots, demonstrated that the dry mass, texture, conservation, vitamin A and beta-carotene contents were superior in carrots with organic and biodynamic fertilization.

Miklós et al. (1999), working with composting of residues from the sugar cane industry, demonstrated that, with the use of biodynamic preparations,



there was a considerable reduction of nutrient losses during the composting process.

Biodynamic agriculture has a recent history in Brazil, starting mainly from the 1970s, with the beginning of Estância Demétria in Botucatu-SP, and following a path of development and adaptations to tropical socio-environmental conditions, expanding and awakening interest of both farmers and consumers involved in the pursuit of healthy food production. There are still many challenges that, due to feelings and experiences, go through social inclusion strategies, in the sense of disseminating the acquired knowledge, making production more accessible to farmers, mainly family farmers, and that the food generated in this way can also be accessible to all people, in which case solidary and fair certification and commercialization processes are necessary. From the point of view ecologically, we see the importance of looking at the dynamics and structure of the local ecosystem, which involves observing the role of the tree component in the agricultural organism, as proposed by Rudolf Steiner in his fundamental course in 1924: "Earth needs clusters of plants, forests, to be alive and cosmically conscious. She has accomplished this mainly with trees, with their straight trunks, a segment of rays that go from the center of the Earth to the periphery of the cosmos, whose sphere is mirrored in its crown." (Steiner, 2001)

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## References

1. KOEPF, H.; PETTERSSON, B.D.; SCHUMANN, W. Biodynamic agriculture. São Paulo: Nobel, 1983. 316p.
2. KLETT, M.; MIKLÓS, A. A. W. Biodynamic agriculture and human nutrition. In: MIKLÓS, A. A. W. The dissociation between man and nature. Reflections on human development. São Paulo: Anthroposophical; 2001. p. 215-59.
3. MIKLÓS, A. A. W. et al. Evaluation of the effects of biodynamic preparations on nutrient losses in composting. Biodynamic Agriculture, year 16, n. 82, p. 27-32, 1999.
4. PIAMONTE, P. R. Yield, quality and postharvest conservation of carrot (*daucus carota* l.) under mineral, organic and biodynamic fertilization. 1996. Dissertation (Master in Agronomy/Horticulture). Faculty of Agricultural Sciences, Paulista State University, Botucatu, 1996.
5. STEINER, R. Fundamentals of biodynamic agriculture. 3rd ed. São Paulo: Editora Antroposófica, 2001.

