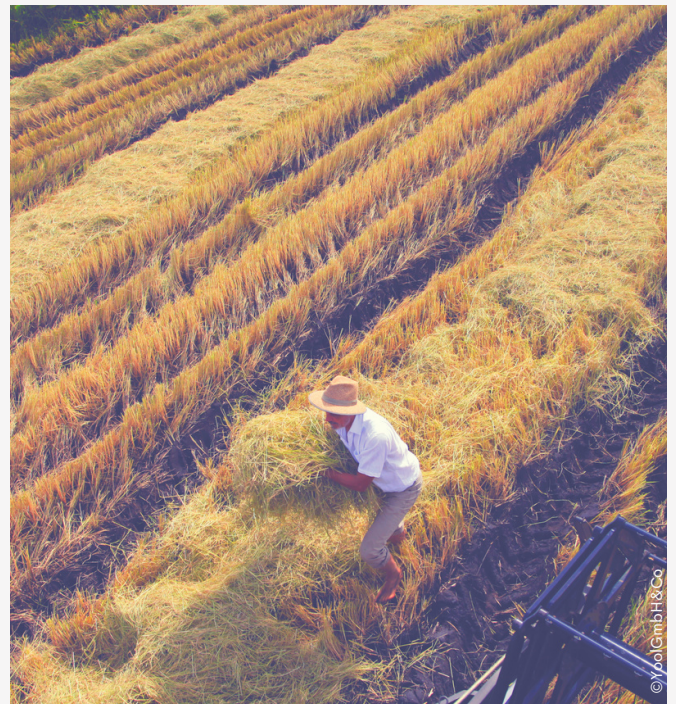


BIODYNAMIC AGRICULTURE

Biodynamics is a holistic agricultural system. Its origin comes from a series of lectures given by Rudolf Steiner in 1924 published later under the title, 'Agriculture Course'. These lectures were the response to a concerned group of farmers who perceived negative impacts on farming, mainly due to a monoculture approach and the use of chemical fertilisers. Farmers and gardeners developed the first indications to transform agriculture into a regenerative activity by putting them into practice and observing the results. This led further to the creation of the Demeter brand, with its own standards to certify products from biodynamic farming. The biodynamic approach can be described by the following principles, which have recently been formulated by the Biodynamic Federation Demeter International (BFDI):

- Regeneration – sustainability is not enough.
- Integrating the well-being of nature and humans – we are part of the picture.
- Creating a living context where humans, animals and plants can thrive and develop.
- Including animals in a way that respects their well-being while producing nutrient-dense food, nourishing the soil, and protecting wildlife.
- Agriculture is contextual regarding ecology, landscape, and culture.
- Ecological responsibility – Caring for resources, including packaging and transport.
- Social responsibility – Supporting community development and a cooperative approach throughout the supply chain.



Biodynamic farming is repeatedly accused of being esoteric and unscientific, mainly due to its cultural approach, which is not always fully comprehensible from a modern science-based perspective. However, there is scientific evidence for the effects of biodynamic management that acknowledge the great potential of biodynamic farming to contribute to the sustainable development of food and farming systems.

SOIL QUALITY

Biodynamic agriculture is the farming system with the most favourable effect on soil quality, followed by organic and conventional agriculture. As Christel et al. (2021) found in a meta-analysis of approximately one hundred articles, 52% of microbial indicators were higher in biodynamic farming when compared with organic farming.

ENVIRONMENTAL SUSTAINABILITY

Biodynamic agriculture favours circularity on farms, using animal manure and green manure produced on the farm instead of external organic fertilisers. Therefore, biodynamic farming tends to be more ecologically efficient since external inputs are lower than for other production systems to produce the same quantity (organic, conventional) (Santoni et al., 2022).

BIODIVERSITY

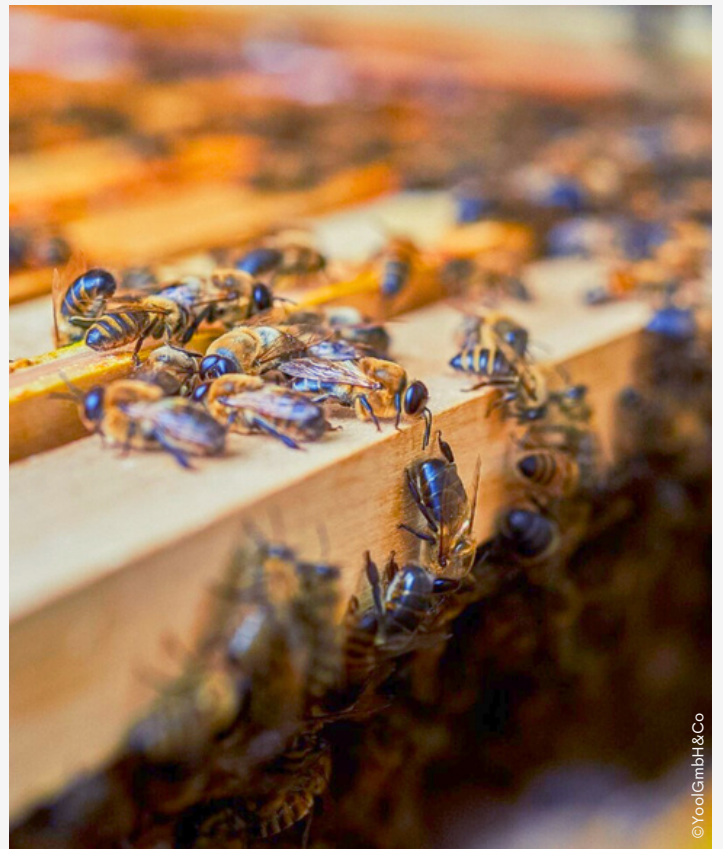
Until now, scientific studies of biodynamic effects on biodiversity have been rare. However, biodynamic principles favour structural characteristics of farms and farming measures that are known to promote the overall biodiversity of agroecosystems, such as vegetation buffer strips, riparian corridors, and hedgerows that provide shelter to pollinators and natural predators. (Santoni et al., 2022).

Get a detailed booklet on that theme:
<https://www.sektion-landwirtschaft.org/en/research/basics>



FOOD QUALITY

Biodynamic farming always strives for the best food quality. In fact, positive effects of biodynamic management on food quality have been reported. From the inventory of Brock et al., 17 out of 21 studies comparing food quality show a positive effect on food quality under biodynamic management. In several cases, specific effects of the biodynamic preparations on food quality could be observed.



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BIODYNAMIC PREPARATIONS

Initial results suggest that preparation 500 may have the potential to stimulate plant growth (Santoni et al., 2022). However, studies on the effects of biodynamic preparations are few and far between, and some results need to be revised.