

**BIODYNAMIC
FEDERATION** 

DEMETER BANANA FACTS

Biodiversity

Fertilization

Crop protection products

- Fungal diseases
- Insect protection
- Weed control

Drift

Legumes

Social responsibility

Monitoring and inspections

Agricultural differences in banana cultivation:

Conventional

EU organic

Demeter standard*

**Plans for the future are in italics*

BIODYNAMIC FEDERATION DEMETER INTERNATIONAL

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BIODIVERSITY

Conventional	Organic under EU regulations	Demeter
<p>Due to the heavy use of pesticides and fertilizers, conventional banana plantations have major negative impacts on flora, fauna and adjacent ecosystems, especially water bodies.</p>	<p>These negative impacts on flora and fauna do not occur because no pesticides or synthetic fertilizers are used.</p>	
	<p>The EU regulations refers to the preservation of biodiversity as one of the most important goals of organic farming, but refrains from defining concrete measures. As a result, organic banana plantations are also mostly monocultures.</p>	<p>Demeter farms must dedicate at least 10% of their land to biodiversity measures (such as hedges, tree patches and grass margin strips). These measures reduce the area available for bananas.</p>

FERTILIZATION

Conventional	Organic under EU regulations	Demeter
<p>Very high levels of soluble nitrogen (N) and potassium (K) fertilisers are used, which can leach into ground and surface waters. Studies from banana farming regions show massive eutrophication (over-fertilisation) of water bodies.</p> <p>N fertilisation in particular makes plants more susceptible to disease and pests.</p> <p>Numerous studies show a negative relationship between high N fertilisation and most aspects of food quality (with the exception of protein content, which increases with N fertilisation).</p>	<p>Nitrogen (N) may only be used in the form of organic fertilisers, potassium (K) only in the form of salts that have not been chemically prepared and are based on a soil analysis and only when necessary.</p> <p>There is no upper limit for N fertilisation. On intensively managed organic farms, up to 600 kg N per hectare per year are used in extreme cases. There are no specifications regarding the type of organic fertilisation. Often, only commercial fertilisers with 3 to 15% N are used, which supply the plant with nutrients, but do not contribute to building up humus in the soil.</p>	<p>N fertilisation is limited to a maximum of 170 kg per hectare per year.</p> <p>Only 60 kg of N per hectare (<i>40 kg in the future</i>) may come from commercial fertilisers with high N concentrations; the rest must be used in the form of compost made from animal and plant waste. Such composts have only between 0.3 and 1% N and are biodynamically prepared*. Compost contributes building humus in the soil and therefore to a long-term increase in soil fertility and the storage of carbon in the soil (thereby contributing to climate protection).</p>

CROP PROTECTION PRODUCTS – FUNGAL DISEASES

Conventional	Organic under EU regulations	Demeter
<p>Depending on the region, from 5 to 60 sprays of fungicides from aircraft, usually with a combination of up to 8 fungicides per application.</p>	<p>Fewer sprays. Very few substances are allowed (such as vegetable oils, sulfur, garlic extract, diatomaceous earth, aluminum silicate, chitosan). Healthy soil, more diversity and less nitrogen fertilization make the plants less susceptible. This general principle of organic farming unfortunately only works to a limited extent when it comes to some very aggressive fungal diseases in banana cultivation. This is one of the reasons yields are usually lower.</p>	<ul style="list-style-type: none"> • H₂O₂ is not permitted, as it also kills beneficial microorganisms. • Paraffinic oils only if vegetable oils are not available. • Maximum 3 kg of copper per hectare per year. <p><i>Demeter banana farmers in regions with heavy rainfall, and high rates of fungal infection, are experimenting with wider planting spacings to speed up leaf drying after rainfall.</i></p>
	<ul style="list-style-type: none"> • Hydrogen peroxide (H₂O₂) permitted • Paraffinic oils permitted • Copper preparations (no quantity limits) permitted 	

CROP PROTECTION PRODUCTS – INSECTS

Conventional	Organic under EU regulations	Demeter
<p>Regular spraying with insecticides. The plastic bags that protect the bananas on the plant are impregnated with insecticides.</p>	<p>Spraying with synthetic insecticides are prohibited. Very few inputs are allowed (microorganisms, vegetable oils, neem, pyrethrum, quassia, soaps).</p>	<ul style="list-style-type: none"> • Since Spinosad also kills beneficial insects, its use requires an exemption • Paraffinic oils only if vegetable oils are not available. • Plastic bags without impregnation permitted without restriction. <p><i>Some Demeter farms are experimenting with paper bags instead of plastic bags to reduce waste.</i></p>
	<ul style="list-style-type: none"> • Spinosad permitted without restriction • Paraffinic oils permitted without restriction • Plastic bags without impregnation permitted without restriction 	

WEED CONTROL

Conventional	Organic under EU regulations	Demeter
Regular spraying, usually with glyphosate.	Mechanical weed control only (machinery or manual).	

DRIFT

Conventional	Organic under EU regulations	Demeter
In addition to the pesticides farmers apply to their own land, land is exposed to spray-drift from neighbour farms.	Unlike all other international organic standards, the current EU directive includes no requirements to protect organic farmland from drift. The new regulation, which will take effect in 2022, contains only general provisions to “avoid contamination.”	Demeter farmers must actively prevent their land from chemical pesticide drift. For banana plantations, this often means planting lines of trees for protection, or marketing bananas affected by drift conventionally.

LEGUMINOUS PLANTS

Conventional	Organic under EU regulations	Demeter
<p>The unique symbiosis of the leguminous plants with root nodule bacteria, and their ability to make atmospheric nitrogen available for the plant, plays virtually no role in modern conventional agriculture.</p>	<p>The use of legumes is one of the general goals of organic farming. However, in practice it is often not required by the certification bodies. It does not play a role in banana production, because it is believed that legumes would compete too strongly with the bananas for light and water.</p>	<p><i>Some Demeter farmers are experimenting with growing legumes between and under the banana plants. This so-called green manure is then incorporated into the soil. This not only enriches the soil with humus, but also saves fossil energy needed for producing N fertilizers.</i></p> <p><i>In the future, these processes will not only play a role on an experimental level, they will increasingly form part of the guidelines.</i></p>

SOCIAL RESPONSIBILITY

Conventional	Organic under EU regulations	Demeter
<p>As a result of pressure from distributors, many banana farms (conventional, organic, Demeter) are certified under GLOBALG.A.P. GRASP, Rainforest Alliance® or similar standards, which ensure compliance with minimum social requirements.</p>		
<p>The aforementioned standards often lead to a stagnation in the development of the farm once the minimum requirements have been met.</p>	<p>The EU regulation does not address “social responsibility.”</p>	<p>In its guidelines, Demeter already requires compliance with ILO standards (ILO =International Labor Organization, a sub-organization of the UN). Based on risk, or in the event of complaints, compliance with these guidelines is verified during social audits.</p> <p><i>In the future, the standards in this area are to be further developed. Demeter farms will then set goals for improving working conditions and employee participation as part of farm development plans and in a dialogue with regional stakeholders. The implementation of these goals will in turn be reviewed through audits.</i></p>

MONITORING AND INSPECTIONS

Conventional	Organic under EU regulations	Demeter
<p>Almost all banana plantations have GLOBALG.A.P. certification. GLOBALG.A.P. inspections involve a large amount of documentation.</p>		
<p>Apart from GLOBALG.A.P. inspections (and sometimes Rainforest Alliance or the like), no inspections take place on conventional farms.</p>	<p>In addition to the GLOBALG.A.P. inspection, there is also the organic inspection. The two are often combined. The high demand for organic bananas has also attracted fraud to this market. Organic certification bodies should have a keen interest in detecting fraud, even if a possible suspension would mean a loss of income for the certification body.</p>	<p>Certification by the Biodynamic Federation Demeter International is committed to the goals of the Federation and the credibility of the Demeter seal, not to our own business development. We actively seek out potential fraud cases to ensure our high quality standards.</p> <p>Demeter inspectors are very well trained to inspect to both organic and Demeter standards.</p> <p>Some farms are even inspected twice, once by the EU inspection body and once by Demeter. This also results in reciprocal supervision of the inspectors.</p>

Slide 4 *Biodynamic preparations are something very special in biodynamic agriculture. They are made from yarrow, chamomile, nettle, oak bark, dandelion and valerian. Each of these medicinal herbs is transformed through a unique process, enabling them to unleash their powers and stimulate, for example, the growth of beneficial bacteria and fungi in the soil. They stabilize nitrogen and other nutrients in the soil. They help multiply microbial diversity, and help protect against pests.

Demeter farmers make them themselves (or source them from partners), and spray them on soil and plants.

Read more here:

<https://www.demeter.net/biodynamics/biodynamic-preparations>

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