



PRODUCTION STANDARDS

FOR THE USE OF DEMETER,
BIODYNAMIC[®] AND RELATED
TRADEMARKS

As at June 2017

- to be implemented by each member country by 1st July 2018 -

Demeter-International e.V.

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1. Principles

In life processes many diverse forces, which do not originate solely from material interactions, work together. All agricultural measures rely on activating processes which enhance and enliven these natural connections.

The Biodynamic method has largely to do with the forming of living interactions and cannot be defined in the way the production methods for an inanimate article can be. Work done by the human hand in caring for the fertility of the soil, the plants, the seeds and propagating material, and the animals, in harmony with local conditions, can develop the farm or garden into a living organism. The huge diversity of the natural world means that agricultural practices that are suitable in one place may be completely inappropriate in another. The inclinations and capabilities of the farmer need to be taken into account for the various farm organisational possibilities which meet these standards. The correct timing of those measures which affect living processes plays an important role. To this belongs in particular also the conscientious and regular use of the Biodynamic preparations, and the consideration of cosmic rhythms in plant production and animal husbandry.

The production standards for Demeter certification express an internal agreement covering the outwardly active Biodynamic agriculture. They set the framework for the guidelines which are formulated by the respective organisations for Biodynamic agriculture in the different countries (hereafter called the "respective organisation"). Products that are marketed with the Demeter trademark must have been produced within these standards. The legal requirements of these standards are equally applicable to all producing enterprises.

Biodynamic work requires that one is strongly connected with the essential nature of the Biodynamic method, its principles and aims. To this end it is necessary to live into the natural processes using observation, thinking and perception. An ever-deepening understanding of the connections in nature, based on knowledge, can be gained by constant striving. Cooperative work in the various advisory associations, public events, magazines and books are all important sources of aid and support.

The special body of knowledge which is the basis for Biodynamic agriculture, insofar as it extends beyond practical and scientific experience, is derived from Rudolf Steiner's "Agricultural Course" of 1924, and the spiritual context of anthroposophy within which this course was held.

The aim is always to practise agriculture in such a manner that structuring the farm as an integrated unit results in productivity and health, and that those inputs needed for production are generated out of the farm itself. If one however wants to use these standards in such a way as is often the case with laws, that the only concern is with adherence to formalities, or loopholes are sought for economic advantage, one should practise agriculture in some other fashion. It is the task of the respective organisations, with their representatives and the advisory services, to prevent such developments from occurring.

In the end it is important that each grower is increasingly able to act responsibly toward these standards from his own knowledge. Each individual can thank the greater Biodynamic activity for a part of his existence and success, and each local act, even when unseen, contributes to the wider community. Therefore everyone should at all times act in such a way that the trust of the consumer in the Biodynamic method and in Demeter products is confirmed and justified.

On the Structure:

In the present time there is a material world view arising from natural science which has as its basis the materialistic evolutionary principle which states that the next evolutionary step develops from a lower one through competition and selection. In Anthroposophy, developed by Rudolf Steiner, a starting point can be found in spiritual science because there the following evolutionary principle can be found: over the progress of world evolution the physical has been increasingly able to incorporate higher beings such as animals and man. The physical embodiment of much older, higher, world-beings is the newest step in world evolution

Agriculture is the expression of an active formative meeting between mankind and the natural world. The form of the landscape is determined by the needs of people living together in a particular culture. The products, which this agriculture yields, must speak to the being of mankind in order to be able to truly nourish. The keeping of cattle, with the resulting manure production, has been and still is the basis for arable production. Animal husbandry requires feed production, cattle in particular needing roughage, which is an important factor to consider when designing the crop rotation. Plant production is determined by the needs of both man and animal, and requires a conscientious approach to soil husbandry. Locally appropriate management acknowledges the needs of plant and soil, animal and

man. Therefore the section on arable and plant production including manure and soil considerations stands first in the standards, then the preparations are detailed, followed by the animal kingdom. Finally the legal regulations are summarised.

With the exception of the introduction, which puts the ideas in context, the text is laid out in two columns. In the right hand one are keywords and summarised descriptions, which are fully elaborated, in the left hand one.

On labelling:

The labelling of produce with the legally registered (and hence protected) word(s) and/or logos “demeter”, “In conversion to demeter”, “from the Biodynamic method”, or “from Biodynamic production”, as well as any other indications which state or imply a connection to this method legally requires that there is a certification contract covering the producer, processor and trader.

For the certification contract for agricultural, horticultural, orcharding, vineyard and forestry enterprises, the legal requirements, in particular those of EC reg. 834/2007 and 889/2008 governing organic agriculture (Organic Growing), The ‘Organic Foods Production Act’ dated November 1990 in the United States of America, or the “National Standard for Organic and Biodynamic Produce”, edition 3.4 version 1st July 2009 or later in Australia, must be met in addition to the following standards. The currently valid standards from Demeter-International are to be used for processing and labelling of both food and non-food production from Biodynamic agriculture. At all places in these standards where the word, stylised word, logo, or trademark “Demeter” appears, Biodynamic® is implied. These standards shall be the criteria for the use of “Demeter”, “Biodynamic®” and other related trademarks.

2. The Farm Organism – Farm Individuality

"Now a farm comes closest to its own essence when it can be conceived of as a kind of independent individuality, a self-contained entity. In reality, every farm ought to aspire to this state of being a self-contained individuality."

Rudolf Steiner (GA 327, "Agricultural Course", 2nd Lecture.)

All life is formed according to organic principles. Separately emerging organs unite together to give a living entity. This organism is more than the sum of its parts. Organisms are contained by a skin, allowing an inner life to develop which exists in relation to the outer terrestrial and cosmic environment. If this inner life is subject to a self-determined development, an individuality is formed.

If an agricultural enterprise is organised on these principles, and forms from its own resources a system of soil life, plant development and appropriate animal husbandry, then we can justifiably speak of a farm organism. Such enterprises produce healthy food because of the resultant soil fertility, the enhanced life forces in the plants, and animal husbandry compatible to the livestock type. At the same time the activities of these enterprises promote, through their environmental awareness, a landscape that is capable of development and regeneration.

Each locality is different from every other one. Every agricultural practice through its methods of working the soil, its rotations, and its fertiliser policies develops a particular soil flora and fauna. Which animals are kept, and the type of stabling chosen for them, determines soil fertility parameters. The human decisions and ways of working co-operatively give the enterprise a particular character. On top of that man can develop a greater harmony and order in the structure of the farm organism out of spiritual-scientific awareness.

3. Arable and Plant production

As plants are life forms that are particularly dependent on environmental influences, they require as well as a suitable growing location, sufficient light and warmth. The prerequisite for good development of leaves, flowers and fruit/seeds is a vital living soil that allows good root penetration. The design of this growing location is of greater importance for the health of the plant than are individual plant husbandry measures. Equally important is the choice of appropriate varieties and species. The one sidedness of various cultivated plants can be balanced out if a crop rotation appropriate to the local conditions is implemented. In this regard, the development of sustainable soil fertility requires that

consideration be given to including sufficient legumes (if possible not only annuals) as well as a high proportion of leaf crops in the rotation.

"To fertilise means to enliven the soil". This dictum leads us towards a method of fertility building that has its origins in the connections between the life spheres of plant and animal. In any fertility programme, the appropriate use of the Biodynamic preparations is of prime importance.

An important aim when working the soil is the intensification of soil biological processes. Energy efficient methods should be given priority.

3.1. Seed and propagation material

The inner qualities and the outer characteristics of the seed influence on the one hand the resistance of the crop during its growth, and on the other the yield potential (as related to its growing location) and its nutritional qualities. In order to achieve the qualities set as goals for Biodynamic agriculture, particular care and attention to detail is required. Open pollinated varieties, propagated in Biodynamic agriculture, shall be used in preference.

Seed of genetically modified varieties may not be multiplied or sown on Demeter enterprises.

The use of seed, propagation and plant material produced by new plant breeding techniques (NPBTs) is prohibited in production on a Demeter enterprise. This comprises all NPBTs considered by IFOAM EU as techniques of genetic modification leading to GMOs according to the existing EU legal definition. As at June 2017 these are:

- Oligonucleotide directed mutagenesis (ODM)
- Zinc finger nuclease technology types I to III (ZFN-I, ZFN-II, ZFN-III)
- CRISPR/Cas
- Meganucleases
- Cisgenesis
- Grafting on a transgene rootstock
- Agro-infiltration
- RNA-dependent DNA methylation (RdDM)
- Reverse Breeding
- Synthetic Genomics

3.1.1 Seeds and Seed potatoes

Seeds and seed potatoes must originate preferably from Biodynamic agriculture, or else from organic agriculture, if Biodynamic seed is unavailable.

Seeds and seed potatoes from Biodynamic agriculture or from organic agriculture must not be treated with synthetic chemical seed treatment agents at all, including in storage. Irradiation with ionising radiation is excluded.

If seeds or seed potatoes are unavailable in Biodynamic or organic quality, untreated material of conventional origin may be used after approval by the respective organisation. (APP 1: see Appendix 7)

Hybrids of cereals, with the exception of corn (*Zea mays*), are excluded for the production of feed and food. Seeds and plant material produced using protoplasm and cytoplasm fusion techniques are prohibited.

Seed and seed potatoes must originate from Biodynamic agriculture if available.

Synthetic chemical seed treatment agents are not allowed at all.

Only measures conforming to these standards are allowed.

Genetically modified seed and plant materials are forbidden.

3.1.2. Propagation material

Propagation material must originate preferably from Biodynamic or if not available then from organic agriculture.

3.1.2.1. Propagation material for vegetables

The respective organisation can issue an exemption to use conventional propagation material (produced without the use of genetic engineering) in the case of unavailability of Biodynamic or organic propagation material. This exemption may not be given for vegetable seedlings and young plants for growing on that have a short time to maturity and sale (e.g. lettuce, etc.) (APP 1: see Appendix 7)

3.1.2.2. Propagation material for tree crops and perennial crops

If propagation material for tree crops and perennial crops can be documented as being unavailable in Biodynamic or organic quality, conventional propagation material may be imported. Post-harvest treatment with chemical synthetic pesticides (e.g. disinfectants) is not permitted (APP 1: see Appendix 7)

The unavailability of organic seed and/or propagation material must be proven to the respective organisation.

Imports of no more than two trees per year per farm are exempt.

3.2. Manures

Enlivening the soil, and the maintenance and development of soil fertility are basic objectives of the Biodynamic method. The greatest influence in this regard, besides the methods used to work the soil, and the structure of the crop rotation, is the careful use of prepared manures from domesticated animals, in particular the cow.

3.2.1. Amount of manure

The maximum amount of nitrogen that may be supplied by way of the manures used, averaged over the crop rotation, may not exceed the amount that would be produced by those animals which the farm could support from its own fodder production (Max. 1.4 manure unit/ha based on the total area of the farm; see Appendix 1).

The total amount of nitrogen may not exceed 1.4 manure units/ha based on the total area of the farm.

For perennial crops in tropical or sub-tropical climates it is allowed to import up to a maximum of 170 kgN/ha if nitrogen export is higher than 96 kgN/ha. The deficit has to be substantiated by a nitrogen balance, to be approved by the respective organisation.

Greenhouses are allowed a higher level of nitrogen if they can prove by a nitrogen-balance during inspection that total input of kg N equals total output of kg N with a margin of 5%.

Market gardens are allowed to import up to a maximum of 170 kgN/ha if nitrogen export is higher than 112 kgN/ha. The deficit has to be substantiated by a nitrogen-balance, to be approved by the respective organisation.

If the organic manures produced by the farm, together with other plant husbandry methods are not sufficient for the soils' requirements, commercial organic manures may be used. However, forced growth is to be avoided.

The use of commercial organic manures is limited.

The amount of nitrogen on the area in question, imported in commercial organic manures, may not exceed that which could be supplied by compost, stable manure and/or green manures, and in any case must be less than 0.5 manure unit/ha (exception: perennial crops).

Imported nitrogen In commercial organic manures must not exceed 0.5 manure unit/ha

The allowable manures are listed in appendix 4.

All manures must be handled with care and attention. The storage capacity must be adequate, and an appropriate method for spreading is required. Nutrient losses during storage and use by volatilisation and leaching are to be minimised.

Careful preparation and spreading. storage, and

3.2.2. Brought in manures and soils

Rock dusts (including those containing phosphate) and soils can be used. Synthetic nitrogen sources, Chile saltpetre, water soluble phosphatic fertilisers, as well as pure potassium salts with a chloride content of greater than 3% are totally prohibited. Municipal composts and sewage sludge are not allowed.

Synthetic nitrogen fertilisers, Chile saltpetre, water soluble phosphate, pure potassium salts with more than 3% chloride are strictly prohibited.

The fertilisers that may be imported are listed in appendix 4.

Imported animal manures may not originate from animals kept in intensive animal husbandry systems, or systems using no floor litter. In this section "intensive" includes any animals that do not have regular, reliable and effective access to the outdoors (e.g. hens kept in barns etc.); or subject to unethical practices (e.g. beak clipping of hens, tooth cutting of piglets etc.)

No animal manures from intensive animal husbandry systems.

Appropriate systems must be applied to prevent the contamination of certified land by residues of veterinary remedies, feed additives such as antibiotics, natural feed contaminants such as mercury in fish meal and other residues such as herbicides in the litter.

Animal manures from animals fed genetically modified fodder must not be brought in.

If proof that the manure is free from GMOs cannot be given or GMO free manure is not available, the respective organization can give an exemption

(APP 1A: see Appendix 7)

Criteria for issuing an exemption must include:

1. The manure must be composted for at least a year, or by using an intensive, fast composting method.
2. The compost must be identified and processed as a separate pile.

The origin, amount, and use (which area, which crop) of all brought in fertilisers must be adequately documented.

The origins and use of brought in fertilisers and soils are to be documented.

Soil pH is to be maintained and regulated according to soil and crop requirements. If necessary lime may be used.

pH-value to be maintained at optimal levels.

3.3. Plant care and protection

A high degree of resistance to fungal, bacterial and insect attack in the crops is the aim of using the many faceted Biodynamic method, (which includes aspects of landscape care and development), over the whole farm.

Natural crop resistance to be strengthened.

If these methods prove insufficient, the techniques and materials listed in appendix 5 may be used.

Synthetic chemical materials to control pests, fungal attack (including prophylactic usage), viral or other diseases, weeds, or to regulate growth in crops are prohibited.

Every usage of a non-permitted material leads to decertification of the farm, or at least the treated crops and

Any usage of a material not permitted by these standards leads to

decertification of the farm, or at least the treated crops and areas.

areas.

New materials and methods may be tested only with the agreement of the respective organisation (see appendix 5).

3.3.1. Protection in storage

Storage of Demeter products is to be carried out in the spirit of these standards, in such a way that any loss of quality is avoided (e.g. through the choice of storage containers, methods of protection against pests etc.)

If a significant pest problem arises the respective organisation is to be informed. It will decide how to implement control measures based on the principles in these standards. Product contamination during control measurements must be strictly avoided.

Requirement to notify a significant pest problem.

3.4. Market gardens and field vegetables, hops and other perennial crops

Production from market gardens, field vegetable production, hop production and other perennial crops are just as much organs in the farm enterprise as arable production. However farms with a large proportion of such production require a particular overall plan for the enterprise.

On intensive market gardens, which have different crops following each other frequently on the same area of land, particular care in the soil husbandry is necessary. A fertiliser programme based on animals kept on the enterprise itself is strongly recommended. If it is not possible to keep animals, co-operation with another Biodynamic enterprise that does, by exchanging feed or manure, is recommended. The preparation of manures using the Biodynamic compost preparations is to be given particular attention.

A further recommendation is to extend the crop rotation to include representatives of plant families not normally grown, (e.g. Phacelia or buckwheat) as break crops. Legumes and other plants useful for soil development or for beneficial insects should always be in the crop rotation.

As well as the methods described in the sections above, market gardens, intensive field vegetable production, orcharding and other perennial crops must meet the following requirements:

Biodynamic soils, which are highly active, will have a high rate of metabolism when they are worked intensively, and hence measures to build the humus content require particular attention.

Humus content is of particular importance. Market gardens and farms with animal husbandry should co-operate as one unit.

Manure from conventional animal husbandry can only be obtained when it is not available from organic enterprises and needs approval from the respective organisation.

The soil however may not be kept free of vegetation through the whole year. Mulching is allowed (see 3.4.4.).

3.4.1. Seed, propagation material and seedlings

The regulations in Section 3.1 – Seed and propagation material - apply.

3.4.2. Manures, soils and potting mixes

Well rotted, prepared manure from ruminants, which are part of the farm herd, form the most important basis for fertilising. If manures have to be brought in, special care has to be taken that they are residue free, and that the animals are not from enterprises using intensive animal husbandry methods.

Manure imported only from non-intensive animal husbandry.

Soils and potting mixes should be produced from a mixture of on farm materials if possible. At least 25% by volume of such materials should consist of prepared composts made from plant material or animal manure.

At least 25% by volume of soils and potting mixes shall be prepared compost.

Plant materials for composting, and finished compost made from bark, leaves, wood shavings etc. that comes from community areas may be used if a residue test proves that they are acceptably clean. The use of commercial potting mixes requires the agreement of the respective organisation.

Fertilisers, crop rotation and growing techniques used are to be arranged so as to minimise nitrogen leaching to the ground water, or the enrichment of nitrates in the vegetables.

Peat is only allowed as a constituent for propagation beds and potting mixes. The proportion of peat is to be kept as low as possible, and may not exceed 75%. The use of synthetic soil improving agents is not allowed. All fertilisers must meet the requirements of these standards (see appendix 4).

Soil-less growing techniques (hydroponics, thin soil layer etc.), crops grown on inert substrates (e.g. scoria) and container crops are not allowed. Thin soil layer techniques (with the exception of cress, and sprouts grown on a base that is sold with the sprouts) are not allowed.

Chicory roots should be forced in soil. If water techniques are used, the water must have no additives, which are prohibited in these standards. If water-forcing techniques are used, the chicory must be marketed with a declaration to this effect.

Potting mixes and growing substrates may be steam sterilised. After sterilisation, the Biodynamic compost preparations, liquid compost extracts, the horn manure preparation or the cow pat pit preparation are to be promptly used to guide the microbial re-colonisation of the soil.

3.4.3. Plant care and protection

The regulations in section 3.3 "Plant care and plant protection" apply.

Production under cloth or film especially plastic which covers the soil, should be kept to a minimum. Perforated materials suitable for reusing are to be preferred.

3.4.4. Weed control

Crop rotation, how the soil is worked and crop husbandry are of decisive importance for weed control. Mechanical measures are to be preferred over thermal techniques. Steaming of the soil in the field is not permitted.

The use of industrial mulching materials, such as mulching paper or weed suppressing mats, is restricted to soils heavily covered with weeds, because of the wider ecological effects of complete weed suppression and the difficulty of spraying the field sprays. The use of such materials requires the agreement of the respective organisation.

3.4.5. Production under glass and plastic

The energy usage for heating crops under glass or plastic should be kept as low as possible.

Energy saving techniques, such as the use of special heating systems (e.g. ground or vegetation heating) must be introduced to the enterprise wherever possible.

In glasshouses, shallow soil steam sterilisation/heat treatment is not permitted. Only in case of emergencies can an exemption be given by the national certification organisation. (APP 1B : see Appendix 7)

A residue analysis is required for compost from communal areas.

Nitrogen leaching and nitrate deposition in vegetables to be minimised.

The proportion of peat in propagating beds and potting mixes must not exceed 75%.

Soil-less and thin soil layer techniques are not allowed.

Water forced chicory must be declared as such.

After steam sterilising measures must be taken to ensure microbial re-colonisation.

The use of industrial mulch materials is allowed with restrictions.

Energy used to heat to be kept to the minimum.

Energy saving techniques must be used in preference.

After steam sterilising measures must be taken to ensure microbial re-colonisation.

After sterilisation, the Biodynamic compost preparations, liquid compost extracts, the horn manure preparation or the cow pat pit preparation are to be promptly used to guide the microbial re-colonisation of the soil. The first harvest after sterilisation cannot be marketed as Demeter.

3.4.6. Harvest and preparation for sale

The high quality of biodynamically produced products is to be maintained by careful harvest, preparation and storage techniques.

3.4.7. Exceptions for market gardens with vegetables and ornamental plants

Enterprises growing ornamental plants as well as vegetables must convert the areas in ornamental production at the same time if there is no clear, permanent, spatial separation of the production areas and glasshouses. Fertilisers, plant protection, soils and potting mixes must meet these standards requirements.

If no clear separation exists the ornamental production area must be part of the whole conversion.

If there is clear, permanent, spatial separation of the production areas and glasshouses as separate production units, the respective organisation can approve the ornamental section to be converted in steps. The aim is to convert the entire enterprise inside five years.

If clear separation exists the ornamental production area may be converted in steps.

During these five years, the use of conventional soils and potting mixes is possible on the ornamental section. Origin, type, amount, and usage, must be documented.

The plant protection materials used must however meet these standards.

Plant protection materials used must meet these standards.

The separation of the production areas must be defined by careful documentation (plot history cards, plot layout, farm diary, and/or other similar records).

Organic wastes from the ornamental production areas which are not yet fully converted must be composted separately, and used only on this area.

Separate composting is necessary.

Conventional raw and ready to use materials may be imported on to the ornamental production area. Here again, exact records are to be kept.

Requirement to document the importation of conventional raw and ready to use materials.

The varying production methods between the ornamental plants and vegetables, as well as conventionally produced brought in ornamentals must be declared to the consumer as such by labelling in a clear unambiguous fashion.

Unambiguous labelling of Demeter and conventional produce.

3.5. Perennial crops

All the available measures of mixed planting, green sward, inter-planting and soil husbandry are to be used. These measures can be supported by intensive husbandry of the perennial crop. That perennial crops remain rooted in the one locality demands better husbandry of the immediate environment. Creating harmony here can help to reduce the requirement for particular treatments.

The green sward should suit the locality and consist of many different plant species. The soil may not be kept free of vegetation or natural cover throughout the whole year. The establishment year may be an exception to this regulation if necessary. (APP 2: see Appendix 7)

The aim is a wide variety of species in the green sward. The soil may not be kept bare all year.

Exemptions for orchards in semi-arid climates require approval of the respective organisation.

3.5.1. Plant material

If plant material of the required varieties is available from Demeter production, then this must be used in preference. If plant material is available only from organic production, then this must be used.

Demeter or organic plant material is to be used.

The regulations in Section 3.1 – Seed and propagation material - apply.

3.5.2. Manures and soil husbandry

In orchards that have no animals of their own, the amount of outside organic fertiliser that may be imported is limited to 1.2 manure unit/ha of orchard area. The total amount of fertiliser used may not exceed the equivalent of 96 kg N/ha of orchard area. In grapes for wine the total amount of fertiliser in 3 consecutive years shall not exceed 150 kg N/ha.

Maximum organic fertiliser import is 1.2 manure unit/ha, and 96kg N/ha of orchard area.

3.5.3. Plant care and protection

Recognising the particular conditions in orcharding the regulations in section 3.3 - Plant care and protection – apply

3.5.4. Support stakes

In northern climates no tropical or sub tropical woods are allowed to be used as support stakes for reasons of environmental degradation. The tropical grasses, bamboo and tonkin, may be used.

In northern climates tropical and subtropical woods are not permitted.

3.6. Mushrooms

3.6.1 Origin of spores / cultures / mycelium

It is recommended that own mycelium/inoculum material will be developed according to these standards and that this will take over as the starting culture.

Spawn may be bought in from organic sources or derived from the wild. When spawn is produced on the Demeter farm the ingredients of agricultural/forestry origin must be Demeter certified, if available.

3.6.2 Origin of growing substrate

Mushroom substrate must consist of materials derived from organic farming or those permitted for use in organic farming, such as mineral products. Farmyard manure from organic farms containing uncertified straw residues and uncertified agricultural materials e.g. green waste and manures from extensive animal husbandry may be used as substrate provided they have been composted on an organic or biodynamic holding for at least 6 months prior to use as mushroom compost. At the start of this period biodynamic compost preparations must have been added.

Straw harvested in the second year of conversion may be used in the substrate.

In the case of imported wood e.g. oak logs (for shitake), chippings or sawdust, no insecticidal treatments must have occurred since original felling.

Peat as a covering material is permitted in mushroom cultures. Other permitted inputs are listed in the appendices.

3.6.3 Biodynamic measures

The compost preparations must be introduced into the substrate at an appropriate stage prior to inoculation. If sterilisation is used, the sets of compost preparations should be applied after this has occurred and before subsequent incubation. Mushrooms growing on sterilised wood substrate shall have the compost preparations inserted in the sawdust during aging prior to the heat treatment if they are not used after it. The horn manure (500) preparation must be applied at least once per crop

cycle. This must be after the substrate has been inoculated. The horn silica (501) preparation must be applied at least once per crop cycle.

Timing work activities using astronomic rhythms is encouraged.

3.6.4 Illumination

Mushroom species which are known to react to light, e.g. Shii-take, are to be cultivated with light. An exemption may be given by the responsible organisation if climate requires insulated growing sheds.

3.6.5 Health of crop

Prevention is the overriding principle for maintaining the health of the cultures through hygiene, climate control, mechanical pest repellents and the biodynamic preparations.

Salt may be used to control fungal diseases. Other products for plant pest and disease control are listed in Appendix five.

3.6.6 Cleaning and disinfection of growing sheds

For cleaning mushroom growing rooms / sheds, physical procedures must be used, together with water or steam. Permitted detergents, disinfectants, sterilants and other sanitizers are listed in part A section 8 of the processing standards. They must be DDAC/BAC free.

Equipment may be sterilised with 70% alcohol or with agents based on peracetic acid. Formaldehyde must not be used.

After cleaning all interior space, surfaces must be rinsed with potable water. This is not required only where the mushroom substrate is introduced after complete biodegradation of the cleaning / sterilising agent.

3.6.7 Recycling of spent mushroom compost

There must be a plan for the routine recycling of all spent mushroom compost. Licensees are encouraged to find Biodynamic operations which can benefit from such material.

3.7. Sprouts and shoots

The production of sprouts and shoots must use seeds, roots and rhizomes, which have been multiplied biodynamically.

Material of conventional origin is not allowed.

The water used in the production of sprouts and shoots must be of drinking quality. If used, all substrates and carriers must meet the requirements of these standards. In cases of doubt, Demeter-International subcommittee for production standards will give a ruling.

Seeds, roots and rhizomes from conventional production are not allowed.

Water of drinking quality only must be used.

3.8. New crops and production techniques

New crops or production techniques not covered in these standards, and which are not usual practice in organically managed enterprises, may only be trialled with the permission of Demeter-International or the respective organisation. (APP 3: see appendix 7)

3.9 Clearing of virgin rainforest

The clearance of virgin rain forest for agricultural usage is forbidden. Other high value conservation areas must also be protected, and may only be cleared after an exemption has been approved by the respective organisation. (APP 4: see appendix 7)

High value conservation areas must be protected

3.10 Care must be taken with the use of irrigation water.

The water must not be contaminated with pesticide residues, disease causing bacteria or parasites, or contaminate the end product in any way. In cases of doubt water quality tests are required. Irrigation must be scheduled so that the amount of water and/or the frequency of application does not lead to soil degradation (e.g. salination, erosion). All ground or river water abstraction must have the required official approval and the use of fossil water is permitted only when a plan detailing the impact of the usage is approved by the respective organisation.

3.11 Biodiversity reserve

The farm must show a commitment to the maintenance of farm biodiversity. If the Biodiversity reserve on the farm and in areas directly adjacent to it does not reach 10% of the total farm area, a biodiversity plan that documents how this will be achieved, with a clear time frame, must be approved by the respective organisation. This plan can include other cultural elements such as the maintenance of rare or endangered breeds of plants and animals, fostering bird/insect life by providing habitats, utilisation of Biodynamic plant and animal breeding, etc.

Biodiversity reserve shall be 10% of the total farm area. If this is not achieved with the listed elements, the respective organisation may approve a biodiversity plan

Areas counting as Biodiversity reserve

- Lightly grazed fields that allow for some vegetation to flower and go to seed.
- Forested fields (agro forestry)
- Undisturbed forest
- Headlands
- Land seeded to annual/ perennial plants that are allowed to go through flowering
- Fallow land as part of the rotation or otherwise
- Undisturbed grasslands (No mowing in the courses of a year)
- Fence lines (width of undisturbed land can be counted)
- Native trees, single trees appropriate to the location (100m² per tree) and tree lined avenues
- Hedges, field and stream bank tree groves
- Water races, ponds, wet lands, riparian areas
- Ruderal areas, (e.g. landslips), stone windrows and heaps
- Dry stone walls
- Unsealed natural paths and tracks
- Other biodiversity reserve contributions, including husbandry of rare or endangered plant and animal species
- Other elements approved in the Biodiversity plan

Those member countries who do not implement Biodiversity as a standard are to include biodiversity as an obligatory issue for farm talks or similar instruments of quality management, which focus on the development of the farm and the motivation of the people.

4. Biodynamic Preparations (see Appendix 10)

All the measures used on a biodynamically managed enterprise must be evaluated according to holistic principles. In a living totality, it is of real importance not only to balance out the material requirements of the system, but also as Rudolf Steiner explicitly indicated in the Agriculture Course, to balance the depletion of life forces. Conscientious attention to detail in the production, storage and usage of the preparations is of huge importance in this regard.

Spiritual scientific knowledge indicates that components of mineral, plant and animal origin can be metamorphosed by the effects of cosmic/earthly influences during the course of the year, into preparations imbued with forces. When used in the soil, on plants and manures, these preparations contribute to enlivening the earth, stimulating yield and quality in plants, and health, vitality and production of animals on the Biodynamic farm.

The preparations should be made on the farm, or in co-operation with other farms, if possible. The plants and animal sheaths for their production should come from the farm, or if possible from another biodynamically managed enterprise. The experience and knowledge gained to date from observation and experimentation is to be used in their production and usage.

If possible, on-farm production of the preparations.

The full effect can only be expected when all the preparations (compost, and spray preparations) are used in manures and for plant care throughout the year using appropriate methods and times (such as stirring for one hour). An effective method of stirring the preparations, or a contract with a stirring and spraying service, must be present on the enterprise, and inspected as part of the annual inspection.

Preparations are most effective when used collectively.

The spray preparations are to be used as appropriate to the crop type:

- Cow-horn manure or prepared cow horn manure (500P) is to be spread at the start of the vegetative phase, or after harvest of the certified crop, but in any case at least once a year. Horn silica is to be sprayed as the plant stage of development dictates, however at least once a year.
- The spray preparations must be applied with clean equipment.

All organic manures (stable manure, compost etc.) are to be treated with the compost preparations. It is recommended to spread a composite preparation (such as cowpat prep, barrel compost, prepared 500 etc.) as a substitute on those areas, which receive no prepared manure in the course of the year.

A prerequisite for the certification of the farm as "In Conversion to **demeter**" after 12 months of farming to these standards is at least one application of the cow-horn manure and the horn silica, as well as the spreading of prepared manures (or the cow pat preparation produced with the compost preparations as a substitute) on all areas of the enterprise. This applies equally to new areas to be converted.

Preparation usage is a valuable aid in the conversion phase

All farm manures must be prepared with the compost preparations. Intensively managed areas (arable, vegetables, vineyards and orchards) including those in mountainous regions and all land producing fodder must be completely covered with the spray preparations every year. This requirement does not apply to unused or other permanently non-productive areas.

All farm manures are to be prepared. All intensively managed areas including those producing fodder must receive the spray preparations

An exemption can be granted for steep slopes in mountainous regions (providing they are not intensively managed, or mown), and for areas that cannot be driven on. This exemption can be considered by the respective national organisation when the licensee produces a preparation management plan describing the planned preparation usage (areas incompletely or not covered and with what frequency, stirring and spraying machinery available on the farm, proposed improvements to the coverage in the future, etc.) The exception has a time limit, but may be renewed.

(APP 4A: see appendix 7)

5. Animal Husbandry

These standards indicate intentions for animal husbandry, giving mostly only the minimum requirements.

Domesticated animals, as ensouled beings, are particularly dependent on our care. Daily management should be carried out in such a way that the animal receives all due care, as well as provision for carrying out its innate behavioural traits. Imbalances at either the physical or soul level need to be recognised in time and carefully rectified. Continuous observant care of the animals is a prerequisite. Animal husbandry, with the accompanying fodder production is an important part of the agricultural enterprise. With respect to the development of the enterprise, the farm organism cannot do without live stock. This applies to the ruminant in particular. The fodder plants and the well-balanced manure that comes into being because of cattle, contribute considerably through the enlivening of the soil, to the long term flourishing of a farm. The harmonious co-operation of mankind with the three kingdoms of nature can lead to a living, ensouled farm organism.

"You must know, for instance, that the cosmic influences that come to expression in a plant, come from the interior of the earth and are led upwards. Thus, if a plant especially rich in these cosmic influences is eaten by an animal, the manure that the animal's digestion system provides as a result of consuming such fodder, will be just the right thing for the soil where that plant grows."

Rudolf Steiner

Experience shows that animals which are born and reared on a farm, which cares for their feed and husbandry needs in a loving way, have good health and fertility with a high lifetime production.

Therefore every effort must be made to organise optimal living conditions for the animals in each given situation, and to bring animals into the farm only from other equally well run enterprises.

5.1. Requirement to have livestock

Demeter certification of agricultural enterprises without the incorporation of ruminants or Equidae on the farm is not possible.

Exemptions from this requirement have to be regulated by the respective organisation.

(APP 5: see Appendix 7)

In market gardens and in enterprises having solely perennial crops, the requirement to have their own animals is not obligatory if manures, compost, green manures, and preparation usage is particularly intensive.

Demeter certification for agricultural enterprises without the incorporation of ruminants or Equidae is not possible as a rule.

5.2. Stocking rate

The stocking rate is determined by the possibilities for fodder production, as dictated by climate and the local conditions. It is to take into account the maintenance and development of soil fertility.

The minimum stocking rate has to be defined by the certification organisation in each country. The maximum stocking rate may not exceed 2.0 livestock units/ha, corresponding to a maximum of 1.4 manure units/ha, if feed is brought in.

Stocking rate :

2.0 livestock units/ha maximum if feed is brought in

5.3. Co-operation between farms

Co-operation between certified Biodynamic farms (e.g. the exchange of fodder or animal manures) in the sense of a biological unit is possible. The standards are to be applied to this new unit as a whole.

In cases where no biodynamic farm is sufficiently close by, co-operation can be organised between the certified Biodynamic farm and an organic farm. In either case, however, there must be a legal contract, which must be lodged with the respective organisation.

Before co-operation with an organic farm is permitted, the following conditions must be fulfilled:

- a) The co-operating partner farm must feed the animals with 100% organic fodder,
- b) The co-operating partner farm must be converted entirely to organic production.
- c) An exemption must be requested from the respective organisation.

(APP 5A: see Appendix 7)

- d) Farmyard manure has to be prepared on the farm where it originates (ideally in the stable), or at least six weeks before application.
The equivalent manure for the complete area may not exceed 1.4 mu/ha year.
- e) Fodder-cooperation with organic farms is only possible in cases of perennial fodder plant cultivation (at least three years). Application of preparations has to start at least one year in advance and has to be executed by the fodder absorbing biodynamic farm. If crop rotation enables food crops on the cooperation area, application of preparations has to be continued, if the fodder production is continued in the following years. Food crops produced in co-operation cannot be marketed as Demeter.
- f) Fodder-production in cooperation under the previous conditions can be treated as on farm production and Demeter amount for the purpose of 5.5 Feeding.

Co-operation between farms is to be regulated by contract.

5.4. Management

The management of animals is to follow principles of organic husbandry as well as those relating to the animal type and its being. Care for the animals showing respect and love promotes well being, health and their production capabilities.

The stable style and the other management conditions must be organised such that the animals can express normal behavioural characteristics and movement; e.g. they must be able to stand and lie down unhindered, and have a dry resting place. Stables in which the animals have freedom of movement are therefore preferred.

If stable construction advisory services make a sound argument justifying an extension to the conversion period, this may be extended.

The management system should allow the animals free contact with their natural surrounding (sun, rain, earth under foot etc.) if at all possible. This should be guaranteed in particular by access to pasture, or at least to the open air. Care must also be taken to provide sufficient light, a good stable environment and protection from the wind.

The management conditions shall follow principles appropriate to the being of the animal and its type.

Access to pasture, or at the very least access to the open air is necessary.

To tie up animals in housing is forbidden. For security or welfare reasons a limited exemption may, after approval by the respective organisation, be issued by the inspection-body for certain animals.

In stables which were built before the 24th August 2000 tying up may only be allowed provided that the animals are comfortably littered, that individual management is guaranteed and that regular exercise is provided. (APP 6: see Appendix 7)

Small farms must also respect the innate needs of their animals. This means providing access to pasture and exercise as frequently as possible, ideally daily in summer and a minimum of twice a week in winter. Tethering must be restricted to a minimum.

Changes to the construction which are necessary from an appropriate animal husbandry viewpoint (e.g. the building in of access to pasture, bays for rearing groups of calves, rebuilding of fully slatted floors etc.) are to be completed inside a maximum five year conversion period. (APP 7: see Appendix 7)

A conversion period is allowed for the construction of suitable designs to meet the animal husbandry requirements of these standards.

Limited exemptions from the requirements governing housing and outside access may be issued by the respective organisation if the following conditions exist:

- Insufficient access to pasture
- Stable is too small
- access to stream lake or pond for water fowl is lacking
- poultry houses which do not fulfil all requirements
- open air run for poultry which is not covered with grass
- Shelter plantings or artificial shelter not available in the exercise area

(APP 8: see Appendix 7)

The above requirements apply only for farms whose stables were built before the 24th August 2000 and which conformed to the Demeter production standards at that date.

5.4.1 Cattle management

The horns of ruminants have significance for the development of life forces. They provide an opposing balance of forces to the intensive digestion and absorption processes. They are a part of the total being of the cow. In comparison to other animal types, cattle manure has a particularly stimulating effect on soil fertility. The horns also have a large significance as a sheath in the production of the Biodynamic preparations.

Dairy cattle and cows suckling calves are to have access to pasture during the summer half-year. Where this is not possible, access to the open air must be available all year round. Young stock (breeding replacements) has the same requirement for freedom of movement reasons. To tie up young replacement or fattening stock in housing all year round is not allowed. Cows should be given freedom of movement at calving. A calving bay should be provided for if stable renovations occur.

In those enterprises where, because of their situation in the village, or the distance to/size of their outlying fields, or for other practical reasons, access to pasture land or open air ranging is not possible, an exemption may be approved.

(APP 9: see Appendix 7)

Dairy cattle and cows suckling calves must have access to pasture in summer or access to the open air all year round.

To tie up young and fattening stock all year round is not allowed.

Access to the open air has to be available where ever possible.

The stable type and the internal arrangement and fittings must meet the following requirements:

- The sleeping stalls for cattle are to have appropriate bedding.
- Fully slatted floors (more than 50%) are not permitted and the slatted area may not be calculated as resting-place.
- Cow trainers are not permitted.
- Sufficient area to be provided and the herd managed to allow the expression of social behaviour and unhindered feeding.

There must be at least as many feeding/sleeping stalls as there are animals in the stable. In stables with ad lib feeding, fewer feeding stations may be offered.

Calves are to be given contact with each other as soon as possible. They are to be reared in groups from the second week on if there are sufficient numbers of animals of the same age. Boxes for calves are permitted only through the first week.

Dehorning of animals and dehorned animals are not permitted on the farm. In well-justified cases, an exemption may be approved by the respective organisation but must be reviewed annually.

Species of ruminants polled by prohibited forms of genetic engineering cannot be used to produce Demeter milk, meat and fibre; historic, land race and heritage breeds of naturally polled ruminants are permitted.

(APP 11: see Appendix 7)

It is permitted to castrate calves to improve the health, welfare or hygiene of the animals. The operation must be carried out at the most appropriate age by competent personnel and any suffering of the animals must be reduced to a minimum.

5.4.2. Management of sheep, goats and horses.

The conditions for cattle apply to sheep, goats and horses accordingly. In addition, operations such as castration, attaching elastic bands to the tails and tail docking must not be carried out systematically in Biodynamic farming. Some of these operations may be carried out to improve the health, welfare or hygiene of the animals. Such operations must be carried out at the most appropriate age by competent personnel and any suffering of the animals must be reduced to a minimum.

5.4.3. Management of pigs

Sleeping stalls are to be spread with straw (or other organic litter). Fully slatted floors (more than 50%) and management where animals are tied up are not permitted. Access to the open air where rooting is possible must be offered where ever possible.

(APP 10: see Appendix 7)

Sows may be contained for farrowing for the shortest time only until 14 days at the latest). They may not be tied up in housing. Sows must have access to the open-air wherever local conditions allow. Open sows, gilts and young sows are to be kept in groups.

Confining pens with narrow slatted floors or cages are not allowed for weaned piglets. Tooth cutting or other preventative tooth filing of piglets is not allowed and neither is tail or ear docking.

Nose rings or hog rings, which prevent the pigs from rooting, are forbidden.

Sleeping stalls for cattle are to have appropriate bedding.

Fully slatted floors are not permitted.

Cow trainers are not permitted.

Calves are to be reared in groups from the second week on.

Dehorning of stock and dehorned animals are not permitted on the farm.

Sleeping stalls are to be spread with organic litter. Fully slatted floors are not permitted.

Access to the open air must be provided where ever possible.

It is permitted to castrate piglets for health, welfare or meat quality reasons. The operation must be carried out at the most appropriate age by competent personnel and any suffering of the animals must be reduced to a minimum.

5.4.4 Management of poultry

Basic regulations for species-appropriate Demeter poultry husbandry.

All poultry species require management that allows their natural behaviour. For the improvement of the social structure in poultry flocks, two roosters should be kept for every 100 layer hens.

Sufficient feeding troughs and water-bowls must be provided.

For poultry that normally perches, elevated resting places appropriate to the species must be provided. Sufficient sand-bath area and areas for sun-bathing must be supplied, and water poultry must have an adequate water supply. Ducks need to have water areas for swimming; geese need a supply for plunging their heads and necks.

Stables, buildings and housing must be constructed and maintained in a way that meets the natural requirements of the birds. Sufficient daylight, good climatic conditions in the housing as well as low dust exposure are indispensable preconditions for the health and welfare of poultry. Any mutilations of poultry such as beak cutting, trimming, or castration are excluded. The keeping of capons is excluded as well.

In their active phase during the day, a maximum of 4.4 layer hens, parent stock or 7.1 young layer hens or a maximum of 16 kg of live weight (max. 18 kg live weight in mobile coops) per m² can be housed. The minimum slaughter age for all kinds of poultry is given in appendix 8.

Daylight can be extended by illumination to a maximum of 16 hours a day. In the scratching area and in the area for feeding and water supply there must be sufficient daylight. For illumination only lamps without a stroboscopic effect are permitted.

The aforementioned requirements are obligatory for all operations regardless of the number of poultry kept.

The following requirements are not obligatory on farms with a total number less than 100 layer hens, 100 chickens for fattening, 20 turkeys, geese or ducks.

The housing may contain a maximum of 3.000 layer hens (preferably held in flocks of 1000 hens), or parent animals for layer hens or fattening animals, 6300 young layer hens and young parent animals separated into flocks of no greater than 4800 birds each), 10 x 200 layer quails; max. 1.000 turkeys, 2.500 cockerels or guinea fowl, 1000 geese, 1000 ducks and 10 x 500 quail for fattening. Exemptions may be approved by the respective organisation for existing buildings. All new facilities must comply with this standard.

(APP 12: see appendix 7)

Caged systems are prohibited

Open-air runs are required for young birds and laying hens

Other poultry are to have access to an outside run, water-fowl also having access to open water.

Nest boxes are to be provided for egg laying.

Beak cutting is not permitted.

At night there must be at least eight hours of darkness.

Depending on the local climate of the country, it makes sense to offer stables with different climate areas (warm inner area and an outer area called winter garden, with an adjacent poultry run. Such a poultry run, which counts as open run area (pasture area), fenced in but not roofed, with pop-holes to the pasture, and covered with scratchable, humidity absorbing material, protects the pasture close to the housing from high input of manure.

For pasture for geese and ducks a shelter is sufficient.

In housing with different climate areas it is possible to keep layer hens during the night in the warm climate area at a higher stocking rate.

When a winter garden is offered, the maximum stocking rate per square meter is: 10 layer hens or parent animals or 16 young hens or 48 kg live weight of poultry for fattening.

In the inner part of the housing (warm climate area), when the pop-holes to the outer part of the structure (winter garden) are open, a maximum of 8 layer hens or 13 young layer hens or 24 kg live weight of poultry for fattening per m² can be kept. In this case the pop-holes must be self-opening (automated). Only under these preconditions is the winter garden estimated as stable area.

Stocking rate, number and width of pop-holes, equipment for feeding and water supply, higher perches and nests with litter or with a smooth inlay must be adjusted to the weight of the animals.

During the active phase the animals must not be hindered in their access to the different housing zones. Both the winter garden and the housing must be illuminated.

The width of the pop-holes between the different zones/areas must be a minimum of 1 m per 150 layer hens, 250 young layer hens and 500 kg live weight of poultry for fattening. The height of the pop-holes is to be adjusted so that animals can walk through upright. Raised slatted floors

must have pits for the manure. There must not be more than three slatted floors one upon the other. At least one third of the accessible housed area must be covered with litter.

The open air run area shall meet the natural requirements of the respective poultry species. For chickens at least 40% of the area must be evenly covered with perennial crops to provide protection, for example with bushes and trees. Annual crops or artificial protection can be used until permanent crop cover reaches 40% of the area. Mobile stables are exempted. The minimal area required per bird is: 4 m² for layer hens and breeding animals, 1 m² per kg live weight of poultry for fattening, but at least 4 m² per animal, 10 m² per turkey, 5 m² per duck. Geese need a minimum of 4 m² pasture area per kg live weight, and a minimum of 15 m² per goose and there is no limitation of fence distance to the stable.

Pasture must not be further from the housing than 150 m for layer hens, animals for fattening and turkeys, and 80 m for ducks. For geese the distances are unrestricted.

To minimise the risk of an infection with pathogens like Salmonella, Campylobacter, etc., during the rearing of young layer hens, a large open air run can be an alternative to pasture access.

The breeding and hatching has to be included in the inspection process.

5.5. Feeding

Feeds must be appropriate to the class of animals, its age and its physiological needs, with care also being given to providing sufficient mineral nutrition. The necessary minerals and trace elements should be of natural origin as far as possible (Herbs, leaf forage etc.)

Fodder produced on the farm forms the basis of animal nutrition. At least 50% of the feed (DM) must originate on the farm or in co-operation with another Demeter farm.

(APP 14: see Appendix 7)

Each enterprise should strive for full self-sufficiency. Concentrates should comprise mainly grain and legumes. The feeding of by-products of industrial extraction is not permitted. Animal products are not permitted (except milk, milk products, whey and eggs).

Antibiotics, sulphonamide drugs, coccidiostats, hormones, synthetic compounds from organic chemistry and pharmaceuticals are not permitted as additives to feed. Isolated amino acids, growth promoters, production enhancers (feed antibiotics and enhancers) and synthetic chemical feed additives (except vitamins) are not allowed.

5.5.1. Brought in feeds and in conversion feeds

If fodder is to be imported onto the enterprise, particular care in choosing feed quality suitable to Demeter production is to be taken.

Brought in feed should originate from Demeter production if possible.

- At least two thirds of the annual fodder requirements DM (dry matter) offered to the animals must originate from Demeter production
- With regard to fodder supplied in the feed ration and calculated on a **daily basis**:
 - Certified Demeter in conversion feeds, either brought in or from on-farm production (2nd year of conversion and above) can be fed up to a maximum of 50% DM of the feed ration.
 - Feeds from on-farm production which is in the first year of conversion to Demeter can be fed up to a maximum of 20% DM of the feed ration.
 - Organic feeds and feeds in conversion to organic (2nd year) can be fed up to a maximum of 20% DM of the feed ration.
 - For a transition period, until supplies of Demeter feeds are more widely available, the limit on organic feeds can be increased to 50% DM of the feed ration if an exemption is obtained from the respective organisation.

(APP 13: see Appendix 7)

- Certified Demeter in conversion feed, feed from land on the holding in the first year of conversion to Demeter, and organic feed may together not exceed 50% DM of the feed ration.

Fodder produced on the farm is the starting point for a feeding regime appropriate to the animals carried on that farm.

Feeding of extraction by-products is not allowed.

Limits on the use of feed additives.

Imported fodder if possible from Demeter production.

At least two thirds of the annual feed requirement from Demeter sources.

With regard to grazing of Demeter in conversion land by Demeter certified livestock (i.e. when a Demeter farm brings additional land into conversion):

- Grazing of Demeter in conversion land by Demeter livestock is limited by the requirement that at least two thirds of the annual fodder (DM) must be from Demeter production (see above), and by the relevant organic standards.
- Fodder produced on the farm from the first year of conversion to Demeter (the stand down year in which no certification exists) can comprise up to 20% of the annual fodder requirement for roughage consuming animals and 10% for other animals.
- Grazing of land that is Demeter in conversion should be restricted to young stock, dry cows and dry ewes wherever possible. Milking cows, ewes in milk, livestock within three months of finishing, and laying hens should be grazed on fully Demeter certified land wherever possible.

Conventional fodder may not be purchased

Each purchase of feeds, feed-preparations, feed additives minerals- and vitamin mixtures and silage making processing aids has to be registered according to the Demeter indications. In the same way it has to be checked that there are no genetically manipulated agents or their derivatives in the product. Proof of unavailability from Biodynamic sources is to be included as part of the annual certification process. Documentation showing the origin, designation, amount and how the feed was used must be supplied for every importation of feed.

The importation of approved fodder is regulated in appendices two and three

5.5.2 Feeding of dairy cows, sheep, goats and horses.

The fodder must be appropriate and contain as high a content of roughage (green-feed e.g. pasture, hay, silage) as possible, but at least 60% DM throughout the entire year. The majority of summer feeds must be green material, preferably grazed from pasture.

In winter the animals should get as much hay as possible (cows three kg per animal per day with small ruminants getting correspondingly less). If climatic conditions do not allow the harvesting of good quality hay, exemptions may be given by the respective organisation to feed silage of grass (clover) mowed after the start of flowering as a substitute.

The base fodder ration may not consist solely of silage over the course of the whole year.

The maximum amount of brought in feed from certified organic sources is limited to 20% (calculated on an annual dry matter basis).

Feeds of animal origin are excluded. This restriction does not apply to milk and milk products.

For purely pastoral farms, where grain growing because of climatic conditions is not practical, and for very poor or extreme locations, the respective organisation can make exceptions on documented reasons in the permissible amount of brought-in feed.

(APP 14: see Appendix 7)

5.5.3. Feeding of beef cattle

The feed ration must be appropriately constituted for ruminants, with a proportion of at least 60% roughage in all seasons e.g. hay, silage or feed straw. Silage can form the majority of the feed ration, but summer feeding must include fresh green material.

5.5.4 Feeding of replacement calves, calves for fattening, foals, lambs and kids

The following feeds, as far as possible from on-farm production, can be used: milk, if possible mother's milk, roughage, milled grains. Calves and foals should get milk at least three months, sheep and goats 45 days. Fattening on milk alone without the addition of some form of roughage is prohibited.

Feeds of animal origin – except milk and milk products - are forbidden to be fed to ruminants.

Enterprises without their own dairy production must rear brought in calves on milk from a farm which is certified organic or buy in weaned animals from such farms.

5.5.5. Nomadic livestock and grazing on uncultivated areas

Products from nomadic livestock may be marketed as Demeter if two thirds of the fodder is from own production and half of the fodder comes from farm areas that are biodynamically managed. The balance may come from extensively managed areas, including nature reserves, which must have had no use of synthetic fertilisers or plant protection chemicals, where the preparations cannot be sprayed because of steep slope or inaccessibility. (APP 4A: see Appendix 7)

Animals reared in this way may only be marketed using the Demeter trademark six months after weaning, at the earliest, providing they have been fed and managed to the standards during this period.

A grazing diary must be kept.

5.5.6. Guest animals

Animals of conventional origin can be kept on Demeter pastures for grazing as long as there are no Demeter animals present at the same time. An approved exemption is required from the respective organisation (APP 15: see Appendix 7)

5.5.7. Community pasture

Animals from Demeter enterprises may be kept on community pastures if the pasture has not been managed conventionally for at least three years and if the conventional animals are from extensive conventional management. No conventional fodder supplements may be fed. Milk and meat maybe certified Demeter when the animals return to Demeter fodder. Exemptions are required from the respective organisation.

(APP 16: see Appendix 7)

5.5.8. Feeding of pigs

The aim is to produce all the feed requirements for the pigs on the farm. They have to be offered a daily ration of roughage or possibly feeds of high moisture content (e. g. herbage, beets).

Average ration see chapter 5.5.1

- No brought in feed from conventional production is allowed.
- The total amount of brought in feed including biodynamically grown feed is limited to 50% (DM) in cases where more than 5 livestock units of pigs are held on the farm.

Fattening on milk alone is not allowed.

Milk and milk products are the only feeds of animal origin that are permitted.

The feeding of nomadic livestock must follow the same principles as for livestock reared on the farm.

Guest animals of conventional origin may be kept on pastures alone

Animals have to be kept separate for Demeter marketing

Pigs are to be offered a daily ration of roughage or feeds of high moisture content.

The daily ration may not contain conventional feed

- The respective organisation may allow the purchase of certified organic fodder for pigs in amounts up to 50% if no Demeter fodder is available. The unavailability has to be proven.
- Self produced fodder from the first year in conversion with the certification status "in conversion to organic, but not yet certified", can be fed to the animals in amounts up to 10% of the averaged ratio. This regulation is restricted to newly acquired areas on certified Demeter farms.

Fodder from the first year in conversion can be fed in amounts up to 10% of the averaged ratio.

5.5.9. Feeding of poultry

A part of the diet must be given so that the animals can forage for food. Fowl-like birds must have 20% of their fodder as whole grains. At least 5% of the total fodder must be given in the litter or in the open air run so that they may forage for the food. Structured raw material has to be provided; for poultry for fattening as whole grain in the compound feeds.

Species specific feed requirements must be respected.

All poultry must get some grit. The animals must be able to drink from open water sources, at least cups. Geese and turkey need green pasture during the vegetation phase. Demeter pasture geese need at least 35% of the feed dry matter as fresh pasture. Ducks must be able to dabble to take up feed.

Fodder from the first year in conversion can be fed in amounts up to 10% of the averaged ratio

The respective organisation may allow the purchase of certified organic fodder for poultry in amounts up to 50%, if no Demeter fodder is available. The unavailability has to be proved.

Self produced fodder from the first year in conversion with the certification status "in conversion to organic, but not yet certified", can be fed to the animals in amounts up to 10% of the averaged ratio. This regulation is restricted to newly acquired areas of certified Demeter farms. An exemption may be granted by the respective organization to allow conventional feeds up to a maximum of 10% DM to be fed to turkey chicks, for fattening, up to the 10th week. (APP 17 : see Appendix 7)

No other feeds from conventional production are allowed.

5.6. Breeding and identification

5.6.1. Breeding

The animals should be born and reared on a certified Biodynamic farm, if possible as part of a permanent herd. Poultry chickens should hatch after natural incubation.

A principle of the Biodynamic method is the keeping of male sires on the farm, and is therefore highly recommended. Artificial insemination cannot fully replace the effect of the male influence in the farm herd, and is not recommended. It is not permitted to produce animals using genetic manipulation, or by the use of biotechnology (embryo transfer, sperm separation for sex determination).

Embryo transfer and genetic manipulation are not allowed.

5.6.2. Identification of stock and record keeping

All farm-bred and brought in stock must be unequivocally and permanently identified with an earmark, or other marking. For poultry and other small live stock, group identification is adequate. Brought in animals must be accompanied by a certificate stating their origin. It must be possible to trace the animals back to the farm on which they were born, and to their parents.

A stock management diary is to be kept (see also section 5.8 Veterinary treatment of animals) which allows reconstruction from birth to the point of sale. Documents, which contain the same information (for instance a herd book), can replace the stock management diary.

A stock management diary or equivalent recording system must document all stock movements onto or off the farm, as well as exact identification and details of the origin of individual animals.

5.7. Origin of animals, brought in stock and marketing

A) Brought in stock for breeding or herd expansion should in preference come from certified Biodynamic enterprises. Only if they are not available may animals from certified organic farms be brought in. When animals from organic farming are not available the respective organisation can allow animals from conventional farms to be brought in (up to a maximum of 40% of the herd), but only in the following cases:

Conventional animals can only be brought in if an exemption has been approved.

- rare breeds
- to increase herd size
- when a farm leases land complete with all the animals on it
- sires (male breeding animals)
- when a breed is changed
- when a new livestock specialisation is developed

(APP 18 : see Appendix 7)

If the brought in animals come from certified organic farms, they may be marketed as **demeter** after being managed and fed to these standards (see tables).

Animals which were brought in from conventional farms or which were born before the conversion, with the exception of goats and pigs for breeding cannot be marketed as **demeter**.

Animals sourced from conventional farms cannot be marketed using the Demeter trademark.

B) Animals brought in for fattening to yield meat for sale with the Demeter logo shall come exclusively from Demeter enterprises, and only if unavailable may be sourced from certified organic enterprises.

Animals of organic or Biodynamic origin only may be brought in for fattening.

Smallholders who have a few animals for home consumption beside their main crop may bring in animals of conventional origin only for that reason. This is allowed in cases where no certified young animals from Demeter enterprises or certified organic enterprises are available. The animals should be fed and kept according Demeter Standards as much as possible. It is not allowed to market these animals under the Demeter trademark.

5.7.1. Milk, dairy cows and calves

Milk may only be marketed under the label "In Conversion to **demeter**" if the dairy cows are fed from areas of the farm, which have this certification level.

Milk: The labelling is determined by the certification status of the feed.

In case of an application not conforming to the standards the label "in conversion to **demeter**" may be used only if the feed has been harvested at the earliest 18 months after the incident. Demeter certification of the milk is possible as soon as the feed comes from Demeter certified areas (see section 5.5.1.).

If single dairy cows of conventional origin are brought in their milk may be marketed as **demeter** or "In conversion to **demeter**", depending on the certification level of the feed, after 6 months of feeding and management to these standards.

6 months withholding period before the milk from brought in dairy cows of conventional origin can be sold as demeter.

Brought in animals for breeding from certified organic farms may be marketed as *demeter* after feeding and management to these standards for at least 12 month.

Calves brought in for rearing on nurse cows should be drawn preferably from Demeter farms. If this is not possible, they must come from certified organic farms. Calves for breeding that come from conventional management brought in only with an exemption to be approved by the respective organisation.

(APP 18: see Appendix 7)

5.7.2. Beef cattle for fattening

Brought in beef cattle for fattening, of organic origin, must be fed and managed for at least 2/3 of their lives according to these standards if they are to be marketed as **demeter**.

Bovines, which were born on the farm before conversion began, or which have been brought in from conventional origin cannot be marketed as Demeter or "In conversion to Demeter".

LABELLING OF PRODUCTS FROM ANIMALS BROUGHT IN FROM ORGANIC OR CONVENTIONAL SOURCES

Product for sale Cattle	Certification status of the animal on arrival	Fed and managed to the standards	Labelling of the sale product
Milk	Organic	—	Demeter
Milk	Conventional	6 months	Demeter
Beef from fattening cattle	Organic	At least 2/3 of their lives.	Demeter
Beef from breeding/fattening cattle	Conventional		No marketing with Demeter or in conversion to Demeter
Beef from breeding cattle	Organic	At least 12 months	Demeter

5.7.3. Sheep and goats

The order of rank described in section 5.7 (second paragraph) regulates brought in stock.

Milk from brought in conventional breeding stock may be marketed under the Demeter trademark after 6 month.

Meat from brought in conventional stock can be marketed as "In Conversion to **demeter**" after six months. Meat of goats from brought in conventional stock can only be marketed as "**demeter**" after one year.

6 month withholding period before the milk from brought in animals of conventional origin can be sold as demeter.

LABELLING OF PRODUCTS FROM BROUGHT IN ANIMALS OF ORGANIC OR CONVENTIONAL ORIGIN

Product for sale	Certification status of the animal when brought in	Feed and management conforming to the standards	Labelling of the sale products
Sheep and goats			
Milk	Organic	-	Demeter
Milk	Conventional	6 Months	Demeter
Meat	Organic	At least 6 Months	Demeter
Meat	Conventional	From 6 to 12 Months	In Conversion to demeter
Meat (only goats)	Conventional	More than 12 Months	Demeter
Wool	Organic or conventional	More than 12 months	Demeter

5.7.4. Pigs

The order of rank described in section 5.7 restricts the purchase of female “young stock” and the other basic requirements.

Bringing in of piglets should preferably be from Demeter enterprises. If unavailable, animals from farms certified organic may be obtained.

Piglets for the purpose of fattening only of Demeter or organic origin may be brought in.

Piglets of conventional origin may only be brought in if no animals of organic origin are available, and then only with an exemption approved by the respective organisation.

(APP 19: see Appendix 7)

Newly weaned piglets of conventional origin weighing less than 25 kg may be brought in to start a new herd. Pigs which were brought in as conventional piglets may only be sold with the labelling “In Conversion to **demeter**” on the carcass if they have been fed and managed on the farm to these standards for at least 6 months. The piglets must weigh less than 25 kg; i.e. they have to be brought in directly after weaning.

Only piglets from management systems using floor litter and with undocked tails may be brought in.

Bringing in conventional piglets when piglets of Demeter or organic origin are unavailable requires an approved exemption. Piglets for fattening only of Demeter or organic origin may be brought in.

Pigs of conventional origin may be marketed as “In conversion to demeter” after feeding and management to these standards for 6 months.

LABELLING OF PRODUCTS FROM BROUGHT IN ANIMALS OF ORGANIC OR CONVENTIONAL ORIGIN

Product for sale	Certification status of the animal when brought in	Age when brought in	Feed and management conforming to the standards	Labelling of the sale products
Pigs				
Meat	Organic		At least 1/2 of life	demeter
Meat	Conventional	Piglets less than 25kg, directly after weaning	At least 6 months	In Conversion to demeter
Meat	Conventional (Breeding animal)		At least 2 years	Demeter

5.7.5. Poultry

Day old chicks (a maximum of 3 days old) and pullets may be brought in. Purchase of conventional pullets is not possible.

Marketing of the eggs using the Demeter label after feeding and management according to the standards.

Eggs from brought in organic pullets or conventional day old chicks may be marketed under the Demeter trademark if fed and managed according to the standards

Cockerels for meat or other meat poultry, are to be brought in as “day old chicks” that means they must have left the breeding house at the latest 3 days after birth. Brought in poultry comes in preference from certified Biodynamic enterprises. Only if they are not available may animals from certified organic farms be brought in. When not available also from organic farming the respective organisation can allow “day-old” chicks for meat to be brought in from conventional farms. (APP 20: see Appendix 7)

Meat cockerels of conventional origin are to be brought in as three days old chicks.

Meat poultry of conventional origin which is fed and managed to the standards can be marketed as **Demeter**. The minimum time limits for slaughtering are to met. (see Appendix 8)

Other meat poultry must be younger than three days when brought in.

Slow growing breeds are to be preferred.

Slow growing breeds are to be preferred.

LABELLING OF PRODUCTS FROM BROUGHT IN ANIMALS OF ORGANIC OR CONVENTIONAL ORIGIN

Product for sale Poultry	Certification status of the animal when brought in	Age when brought in	Feed and management conforming to the standards	Labelling of the sale products
Eggs	Organic pullets	18 Weeks maximum	The same certification status as the feed	Demeter/ <i>In conversion to demeter</i>
Eggs	Conventional day old chicks	3 days maximum	The same certification status as the feed	Demeter/ In conversion to demeter
Meat cockerels	Conventional day old chicks	3 days maximum	Hens: 81 days Cockerels: 150 days	Demeter
Other meat poultry	Conventional	3 days maximum	From arrival to slaughter	Demeter

5.7.6. Bee products

The production and certification conditions for honey and hive products are regulated in Standards for Beekeeping and Hive Products for the use of Demeter, Biodynamic® and related Trademarks.

5.8. Veterinary treatment of animals

Animal health is primarily to be assured by observant animal husbandry, breeding and feeding, choosing the right breed, as well as through the use of prophylactic measures such as management appropriate to the livestock species. If however health problems occur, treatment to alleviate the condition must be given immediately. If the treatment is under direction of a vet, and documented exactly, the remedy chosen may deviate from these guidelines in order to find the best solution for animal health, management of resistance and environmental aspects.

Remedies containing organophosphate materials and treatments with hormones to synchronise oestrus or to increase the growth rate or production of animals are not permitted.

Use of antibiotics: Large and small Bovidae, Camelidae, Equidae, deer and sows. The aim is to be largely free of antibiotics, with use occurring only in pure emergencies. Individual animals may receive a maximum of three courses of treatment per year. They may not be used prophylactically and only under the direction of a vet. Antibiotics of critical importance for human medicine may only be used as a last resort. In cases of persistent herd problems, it is highly recommended to consult with a professional in order to improve herd strength through the breeding programme

Ecto-parasites: Individual animals may receive only one application per year of Ivermectin/Doramectin for the treatment or prevention of miasis and scabies. Whole herd treatment is permitted only with other remedies for ecto-parasites.

Pyrethroids, as local applications (no whole animal dipping), are permitted for ticks, horn flies, dermatobia etc. Other solutions must be integrated into control measures. Spinosad for lice and/or miasis control in sheep/goats is permitted.

Internal parasites - Anthelmintics may only be given in conjunction with a diagnosed presence of parasites, and an appropriate clean-pasture grazing regime. Whole herd treatment is permitted but the use of Ivermectins and doramectins are generally excluded as remedies for internal parasites with the exception of liver fluke and oestrus ovis if there are no alternative materials available. Oral administration is preferred, pour-on or injectable administration is permitted only as a last resort under the direction of a vet.

Additional requirements for poultry, fattening pigs, rabbits and other small animals: In the case of an outbreak of disease in poultry, small animals and fattening pigs, the whole flock may be treated. Fattening pigs and rabbits may receive only one application per year of Ivermectin/doramectin for the treatment of scabies.

Animals with a productive life of less than one year may have only one course of treatment.

Other treatments must be limited to not more than 3 per year.

Routine and/or prophylactic treatment with materials that are not termed natural remedies (e.g. synthetic allopathic medicines, antibiotics, anthelmintics) is not permitted unless legally required. An exception to this is the use of permitted anthelmintics (see above) in those cases where parasitism is endemic in the area in which the farm is located.

Every treatment given to an individual animal, or to the herd as a whole, no matter what the treatment was, is to be recorded in detail in the appropriate farm records. This record must state, for each treated animal, the treatment, the method, the medicine used, the withholding time and the date of treatment. These records are to be kept and made available when requested.

Natural treatment methods are to be used as first preference.

The treatment with hormones to synchronise oestrus or to increase growth rates of animals is not permitted.

Synthetic chemical veterinary remedies, including antibiotics must be given by a vet, or following his/her direction.

Antibiotics may not be used as a routine or prophylactic treatment

Anthelmintic usage only in conjunction with faecal analysis and a clean pasture grazing regime.

Ivermectins and doramectins are not permitted against internal parasites and for any whole herd treatments.

When using veterinary allopathic remedies, twice the legal withholding period, at least 48 hours if there is no waiting period mentioned, is to be observed. (Except in the case of a negative bacteria inhibiting test following the use of antibiotics.)

Withholding times to be doubled.

If any animal receives more than the permitted number of treatments, or is treated with a non-permitted material, it is not to be marketed as Demeter.

5.9. Transport and slaughter of stock

The slaughtering of animals requires particular care and attention. One must be conscious, that all processing of meat begins with the death of a living being with a soul. Ethical and moral considerations require that the animal is handled all the way from transport to slaughter such that stress, fear, thirst and pain are avoided as far as possible. Transport distances should be kept as short as possible and therefore animals should be slaughtered in the region in which they were reared.

The driving of animals with electric prods is forbidden. Transport distances shall be kept short, if possible not more than 200 kilometres.

5.10 Cleaning and disinfecting

Allowable measures are detailed in Appendix 9

6. Exclusion of genetically modified organisms and nanotechnology

The use of genetically modified organisms (GMO), or products from them, is not allowed. All products used in certified production have to be produced without GMOs or products from them. Particular feeds and seeds of conventional origin require a declaration from the supplier confirming that the product contains no genetic modification (see appendix 2).

The use of genetically modified organisms or their products are prohibited.

Because the impact on the environment and on human and animal health is unclear Demeter-International adopts the precautionary principle concerning man-made nanoparticles. It does not permit their usage in Biodynamic agriculture, or in any Demeter certified products. Particles less than 100 nanometres in size shall be excluded from farm inputs, ingredients, aids and additives as far as practicable. However, this requirement cannot guarantee freedom from man-made nanoparticles due to the pervasiveness of these materials, the lack of a legal obligation to label them and the difficulty of analytical determination.

7. Conversion, Certification, Contract

Conversion is a process of change encompassing the many developmental steps that the enterprise goes through on the way to a new state of equilibrium.

7.1. Conversion and the production manager

Essential agricultural knowledge and skills based on interest in the Biodynamic method, its background and principles, are important prerequisites for successful farming. Membership in a Biodynamic working group is recommended to guarantee the exchange of ideas, communal work assistance and support.

7.2. Conversion of the enterprise

To convert an enterprise into a Biodynamic one, an individual guiding template, defining the developmental direction of the enterprise, should be drawn up. Following this guide a conversion plan can be produced in conjunction with advisors, which contains a description of the fields belonging to the enterprise (size, crops), a detailed picture of the farm organism, a rotation plan, a fertiliser plan, a picture of the animal husbandry intentions, as well as measures to minimise the effects of environmental contamination (e.g. from industry, or roads with heavy traffic densities) or spray drift from conventionally farmed neighbouring land.

Description of the farm organism and the conversion plan.

The detailed picture of the enterprise is to contain a description of the conditions of the soils and the most recent usage of materials prohibited in these standards as well as an exact farm map.

The respective organisation can request tests for residues from agricultural chemicals, or investigate other exceptional environmental influences.

The enterprise is to be converted in its entirety, in one step, to the Biodynamic method. Where it can be justified, certification of the individual areas can follow the crop rotation as long as the whole farm is managed organically. (APP 21: see appendix 7)

Total conversion of the enterprise;

The areas that have not yet been certified are to be managed as a fully separate unit during this period. Parallel production is not allowed. Production of the same crop on areas carrying differing levels of certification leads to downgrading to the lower status of the whole crop. In cases where a comprehensive protocol defining separation procedures exists, the respective organisation can allow the planting of different varieties of the same crop in the case of cash crops, cereals and grain legumes for fodder. Exceptions for perennial crops require approval.

No parallel production

(APP 22: see appendix 7)

Exact documentation is required in all these cases. The entire enterprise must reach full Demeter certification no longer than five years after the first conversion certification. Conversion over a longer period requires approval.

Conversion in five years at the most

(APP 23: see appendix 7)

One and the same farm manager may not manage a Demeter farm and a conventional farm.

Jurisdiction of the farm manager

7.3. Demeter certification and use of the trademark

“Demeter certification” is granted to an enterprise annually if it has been farmed to these standards, and that has been confirmed by the relevant approved organic inspection body as well as the “Demeter-inspectors” and the certification committee of the respective organisation (in consultation with the Demeter-International). The enterprise then has the right to label all its produce with the Demeter trademark (“In conversion to Demeter” and “Demeter”) according to its certification status.

The farm manager applies annually to be recertified. An annual farm inspection comprising of a full organic inspection as well as a full Demeter inspection is a pre-condition for continuing certification. The Demeter inspection shall be carried out by an inspector approved by the respective organisation. Part of the certification is the filing of a farm report. A certification committee or certification officer grants certification. A stock management diary is to be kept which records all animal movements onto or off the farm, what fodder is brought in, and what veterinary remedies are used. Representatives of the respective organisation must be part of the initial certification. The forms to be completed will be sent out automatically. Any intended management changes, or other measures, which could have a substantial influence on the farm as a whole, must be discussed with the representatives of the respective organisation. Records of all the agricultural produce sold (type, amount, buyer, or if it is to end consumers - daily sale volumes), must be kept. If written confirmation of the farm management

conforming to these standards is not provided after two written requests, the respective organisation may immediately cancel the contract.

7.3.1. Certification in conversion

The prerequisite for conversion certification is management of the whole enterprise to these standards, as defined in the section "Conversion". The use of the trademark is then governed by the following time line:

- Marketing of produce from the first conversion year with labelling that implies that it is a product of organic agriculture e.g. "from organic production" or "from Biodynamic production" or similar wording is not allowed.
- Produce harvested 12 months after the start of conversion, may, if certification has been granted, be marketed as "In conversion to **demeter**". Crops harvested more than 36 months (perennial crops), or sown more than 24 months after the start of conversion can be marketed as "**demeter**" once certification is granted.

These time periods may be extended in exceptional cases: If an enterprise or part of an enterprise has been intensively conventionally farmed, a so called zero year may precede the above listed times.

These time periods may be shortened in exceptional cases:

- If an enterprise can be shown to have been managed extensively, products after the first conversion year can be labelled "In conversion to **demeter**". After the second conversion year, full Demeter certification is possible.
- If an enterprise or part thereof is certified organic for a minimum of one year, products in the first conversion year can be labelled "In conversion to demeter". In the second conversion year, full Demeter certification is possible.
- If an enterprise or part thereof is certified organic for a minimum of three years full Demeter certification can be given for the first harvest, provided that all provisions of these standards have been implemented.
- Partial conversion and new areas follow the above regulations with the additional requirement for documentation.

For animal products, certification corresponds to the certification status of the fodder. See the tables see tables listed in 5.7

7.3.2. Contract

The farm manager applies to the respective organisation for certification which must be accepted in writing. If all the conditions are met, the enterprise receives a contract for the use of the trademark, and an additional agreement to take up membership in the regional working group. Only when the contract and the agreement have been signed are the rights to use the trademark given to the applicant for one year.

The manager of the enterprise itself must be a member of the respective organisation, which in turn must be a co-operating member of Demeter-International. The conversion contract must document, because of the current situation, in particular the origin of cattle.

7.3.3 Sales of Demeter products.

Sales to a processor or trader require that the processor or trader has a valid contract with a Demeter certifying organisation. If not, the products may not be marketed using Demeter or Biodynamic labels or logos, or be implied to be Demeter or Biodynamic products. A Demeter licensee may sell products to single retail shops without restriction.

7.3.4 Principle of social responsibility

Social responsibility, which includes respect for and observance of human rights, is one of the basic principles of the Demeter standards. The requirements of the International Labour Organisation (ILO), enshrined in the legal framework of many countries, are valid for all people and govern all human resource relations also in Demeter certified enterprises. People working on a Demeter operation receive equal opportunities independent of their ethnic background, creed and gender.

Management is responsible that health and security of all persons is guaranteed on the enterprise and that no one is endangered through their work. All co-workers have the possibility to avail themselves of

their rights. They have the right to congregate, to participate in collective bargaining and to make representation to management without discrimination. Demeter enterprises aim to eliminate social inequity including lack of social rights, forced or inappropriate child labour, below standard working conditions and/or wages, occupational safety and health issues etc. As part of the annual inspection and certification process all licensees shall make a self- declaration confirming that these guidelines have been met.

Appendix 1 Calculation of the stocking rate

The manure units determine the stocking rate.

One manure unit corresponds to 80 kg N and 70 kg P₂O₅. One livestock unit (e.g. a cow with a nominal live weight of 500kg) excretes 0.7 manure units in a year.

<u>Animal type</u>	<u>Livestock Unit/Animal</u>
Breeding bulls	1.2
Cows	1.0
Cattle over 2 Years old	1.0
Cattle 1-2 Years old	0.7
Calves	0.3
Sheep and goats up to 1 year old	0.02
Sheep and goats over 1 year old	0.1
Horses under 3 Years old, ponies and small breeds	0.7
Horses, 3 years and older	1.1
Pigs for meat production (20-50 kg)	0.06
Pigs for meat production over 50 kg	0.16
Breeding boars	0.3
Breeding sows (including piglets to 20 kg)	0.55
Breeding sows without piglets	0.3
Piglets	0.02
Laying hens (without replacement stock)	0.0071
Pullets	0.0036
Table birds (chickens, Cockerels for meat)	0.0036
Ducks for meat	0.005
Turkeys for meat	0.0071
Geese for meat	0.0036

For those animals which produce differing amounts of manure because of their breed or production level, adjustments up or down are to be made.

The manure units are to be calculated on the average number of animals stocked on the farm during the year.

Appendix 2 Allowable brought in feeds (only feeds of certified organic origin may be brought in)

Fodder produced on the farm forms the basis of animal nutrition; complete self-sufficiency is the aim. If, however, fodder must be imported, particular care must be exercised that the choice is appropriate to the production of Demeter quality products. Brought in feeds are to be chosen in the following priority: 1) fodder from certified Demeter enterprises, 2) from enterprises certified organic which is a member of a certified organic organisation, 3) from enterprises inspected to the EC reg. 834/2007 and 889/2008 (or comparably controlled enterprises) 4) from extensively managed areas including nature reserves, which must have had no use of synthetic fertilisers or plant protection chemicals.

Up to 50 % DM of the fodder in an average ration may come from areas not yet certified fully, but farmed biodynamically, and up to 20 % DM from organic areas. Imported Demeter in conversion feed and organic feed may together not exceed 50% DM of the daily intake. **The bringing in of feeds of conventional origin is not allowed.** The respective organisation is allowed to approve the import of a maximum of 50% of organic feeds for pigs and poultry, if Demeter feeds are not available. This non-availability has to be substantiated.

Imported feeds must be documented and be declared as part of the annual return proving that the standards have been followed.

- a) Ruminant diets:
 - Basic staple feeds like hay, straw, silage, maize and beets
 - grain, bran, Grain offal
 - Pulses
 - Hay made from foliage
 - Herbs
 - Molasses
 - Grassland and arable products not mentioned elsewhere
 - Fodder mixes containing the above mentioned ingredients
 - Litter of fruits and vegetable
 - By-products of processing (products of animals are excluded)
- b) pigs :

In addition to a) above the following may be used:

 - Skim milk powder without additives, and milk products
 - Plant oils of natural origin(providing there is no concern about residue levels)
 - Clean vegetable litter
- c) poultry:

In addition to a) and b) above the following may be used:

 - milled dried herbage
 - Paprika powder
- d) The following brought in conventionally produced basic, staple feeds to meet structural and energy requirements may be used in cases of need (e.g. unforeseeable occurrences such as natural catastrophes, damage due to fire etc.) with approved exemptions from the inspection body and not genetically modified:
 - Staple fodder such as hay, grass silage, as far as possible from enterprises of low production intensity
 - Grain and by-products from grain processing and grain offal's from milling
 - Legumes; (no extraction cake)
 - Oil seeds, oil press – cake, expeller cake
 - Fodder beet

This procedure under d) is subject to approval as an exemption by the respective organisation

(App 24: see appendix 7)

Appendix 3 Allowable feed extenders and additives

- Stock salt
- Calcified seaweed, feed lime, lime from seashells
- Seaweed
- Mixtures of minerals and vitamin preparations (= Premix: no individual amino acids, preferably of natural origin)
- Rock flour, Cod-liver oil (Non-herbivores only), carob
- Plant oil, bran, brewers yeast, molasses as a carrier in mineral concentrates or as an aid to reduce dust, or as an aid in pressing (max. 2% of the production ration)
- For beekeeping: sugar (refer to Standards for Beekeeping and Hive Products for the use of Demeter, Biodynamic® and related Trademarks. for the allowable limits).

Premixes must not contain any genetically modified substances, or be produced with the help of gene technology. Written proof to this effect must be supplied to the inspection body.

The following are allowed as aids in the silage making process:

- Feed grade sugar
- Grain meals from grain produced to these standards
- Lactic acid promotion agents
- Whey
- Molasses, salt, wet and dry cuttings

To ensure the quality of fodder in years with bad weather conditions:

- Organic acids (GMO-free)

Appendix 4 Permitted/Restricted Fertilisers and Soil Conditioners

In principle, the enterprise is to aim for self-sufficiency in its manures and fertilisers. Importation of the brought in fertilisers listed in 1. to 4. below may only be as demand dictates. The use of brought in materials requires particular care with respect to their effects on the quality of Demeter products. The Biodynamic preparations are to be used if possible. Brought in materials are to be declared in the annual certification procedure. In some cases the results of a residue test are to be supplied (e.g. for compost from green material). New fertilisers may be trialled only with the agreement of the Demeter-International, or other authorised organisation.

1. Fertilisers and Soil Conditioners brought in from Demeter or Organic certified sources:

- Compost
- Stable manure, semi liquid manures from animals (even after biogas extraction)
- Liquid manures from plants
- Organic wastes (harvest residues etc.)
- Straw

2. Fertilisers and Soil Conditioners brought in from non-certified sources:

- Manures as far as possible prepared at the place of origin (no liquid or semi liquid manures of conventional origin).
- Straw and other plant materials.
- Processing by-products (fertilisers made from pure horn, bone meal or meat-bone meal, dried blood, where possible from organic or Biodynamic certified stock*, hair and feather, and other similar products) as an addition to the farmyard manure that is composted with the preparations.
- Fish, composted or fermented with the preparations. Testing for heavy metals maybe required. Factory fishmeal or fish wastes from fish farming are excluded.
- Seaweed products
- Fresh wood products: saw dust, bark, and wood wastes (as long as they are not contaminated with fungicides and insecticides) and wooden ash from untreated wood
- Peat without synthetic additives for growing seedlings, in as far as no alternatives are available;
(Seaweed products and peat are to be used sparingly for reasons of resource depletion)
- Fermented molasses*. Bruised castor seeds

3. Fertilisers and Soil Conditioners of natural mineral origin:

- Rock dusts (composition must be known)
- Pulverised clays (e.g. bentonite)
- Calcium chloride (CaCl₂; against bitter pip in apples)
- Lime fertiliser, slow release types to be used in principle (dolomite, calcium carbonate, seashells, calcified seaweed - only from dead marine deposits or fossil forms on land). Fast release: quicklime* is permitted for disinfection purpose only

3.1. Only if the results of soil testing, tissue/leaf analysis or other deficiency symptoms prove the need may the following materials be used:

- Natural phosphate rock, low in heavy metals
- Ground basic slag
- Potassium salts, Potassium magnesium sulphate and potassium sulphate (Chloride content max 3%), only minerals from natural sources (only physical separation of the salts is allowed).
- Magnesium sulphate
- Sulphur
- Trace elements

4. Miscellaneous:

- Water soluble seaweed extracts
- Extracts and preparations from plants
- Microbial or plant based compost activators
- Soil inoculates (e.g. alga extract, grain ferments, N-fixing bacteria, Mycorrhiza, Rhizobia bacteria)
- Seed aids (e.g. rock flour, naturally occurring polymers)
- Fertilizer additives (e.g. calcium carbonate, zeolite)

5. Substrates, soils, pots and technical aid material

- Degradable pots
- Degradable binding material
- Substrate for pressed pots (according to these standards)
- Cultivation substrate (according to these standards)
- Substrate additives (vermiculite, lava rock, perlite)

*) In as far as it meets the requirements of Annex I EC regulation 834/2007 and 889/2008 or in the case of bone meal or meat-bone meal fulfils the requirements of the EC Regulation 1069/2009 for Category 3.

Appendix 5 Allowable materials and methods for plant care and protection

The material listed here, especially under 3. and 4., may only be used in cases of proven need, and only if the Biodynamic measures (e.g. rhythmical use of horn silica for insect control, peppering) can't bring the problem under control. It should be kept in mind that use of some materials (e.g. Microfine sulphur, pyrethrum) could possibly endanger predator insect populations. New materials and methods may be trialled only with the agreement of the Demeter-International Standards Group. If commercial preparations are bought in, care must be taken that they are free from constituents prohibited in these standards and are not produced by transgenic methods.

1. Biological agents and technologies
 - Encouragement and use of natural control agents for plant pests (predator populations of mites, parasitic wasps etc).
 - Sterilised male insects
 - Insect traps (Coloured boards, sticky traps, attractants).
 - Pheromones (Sex-attractants; attractants in traps and dispensers)
 - Mechanical repellents (Mechanical traps, slug and snail fences and such methods)
 - Repellents (non synthetic agents to deter and expel pests). Application only on plant parts not for consumption by humans and animals
 - Painting (e.g. insect lime)

2. Adhesion aids and materials to promote plant health.
 - Preparations that promote plant disease resistance, and inhibit pest and diseases: Plant preparations (Stinging nettle liquid manure, equisetum tea, wormwood tea etc.), propolis, milk and milk products, homeopathic preparations
 - Waterglass* (sodium silicate, potassium silicate)
 - Quartz sand, aluminium silicate
 - Chitosan
 - Additives: Adhesion aids, wetting aids, emulsifiers, oil
 - Additional products approved and published by the Demeter International Standards Committee

3. Agents for use against fungal attack
 - Wettable sulphur and flowers of sulphur
 - Waterglass* (sodium silicate, potassium silicate)
 - Potassium bicarbonate*

4. Agents for pest control
 - Microorganisms, Virus, fungal and bacterial preparations (e.g. Bacillus thuringiensis, Granulose virus) spinosad with approval of the respective organization.
 - Pyrethrum extracts, and powder, but not for mushroom production (no synthetic pyrethroids). The use as protection in storage is allowed only if no chemical synergists are included in the formulation. The same regulation applies in agricultural production if materials with equally effective natural synergists are available.
 - Quassia tea
 - Oil emulsions (without synthetic chemical insecticides) based on vegetable (all crops).
 - Oil emulsions (without synthetic chemical insecticides) based on mineral oil in the case of perennial crops only before flowering and only if effective plant oils are not available.
 - Potassium soaps (Soft soap)*, fatty acids
 - Gelatine* hydrolysed proteins
 - Fe(III) Orthophosphate (Molluscicide)*
 - Azadirachtin (Neem - insecticide)*
 - Anti-coagulant rodenticide for use in stables or other housing. (only in baitboxes or similar such that predators are not jeopardised)
 - Rock flour*, coffee*
 - Agents for use in stables and on animals: Diatomaceous earth, sticky fly-tapes, etheric oils

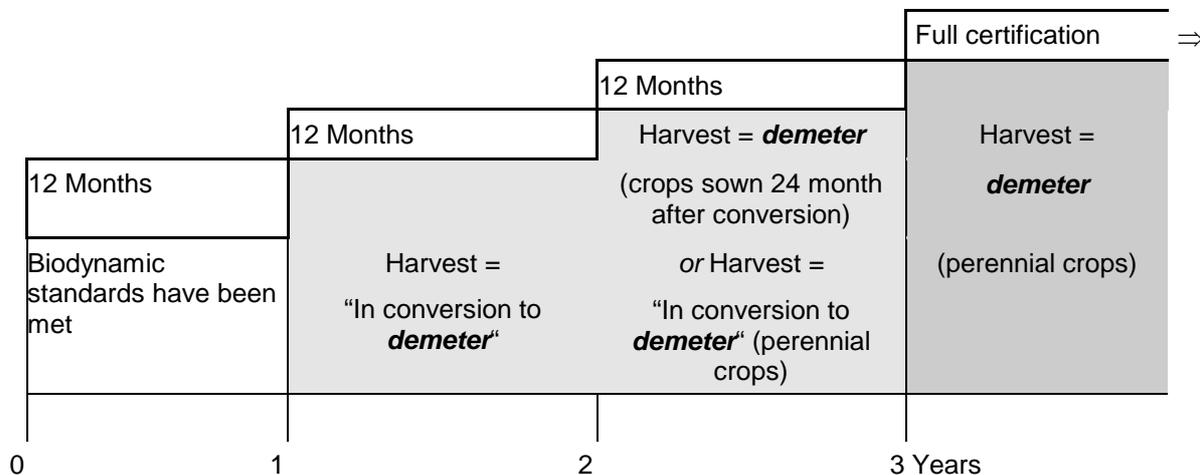
5. Allowable aids on specialised crops, perennial crops and ornamental plants
 - Diatomaceous earth*
 - Calcium hydroxide

- In cases of need, copper may be used such that the amount averaged over 5 years shall not exceed 3 kg/ha/year, preferably with a maximum of 500g/ha/spray.
- Sulphur preparations such as Hepar Sulphuris*, lime sulphur (fungicide, insecticide, acaricide). *
- Ethylene for flower induction in pineapples.

*) In as far as it meets the requirements of Annex II, EC regulation 834/2007 and 889/2008.

Appendix 6 Example of progress through the conversion phase

The usual time for areas of land, or crops to be in conversion can be seen in the following diagram. If the land had been previously farmed intensively using conventional methods, conversion may take longer. In favourable cases the conversion period can be shortened (see section 7.3.1.).



Point of time 0: The clock begins i.e. the last use of materials prohibited in these standards. From this point on the enterprise is managed to the requirements of these standards. In the first year, counted from the start of the clock, all produce harvested has no certification.

Point of time 1: 12 Months after the clock begins; products harvested from this time on can carry the certification "In conversion to **demeter**"

Point of time 2: 24 Months after the clock begins; products sown 24 month after the start of conversion can be marketed as "**demeter**" once certification is granted. Perennial crops harvested from this time on can carry the certification "In conversion to **demeter**".

Point of time 3: 36 Months and longer after the clock begins; Products harvested from perennial crops can carry the "Demeter" certification.

Example 1. Grain:

Rule of thumb: The third harvest has Demeter certification.

Example 2. Milk:

If milk or milk products (e.g. from on-farm processing) are to be marketed with the label "In conversion to **demeter**" at least 80% of the feed fed to the animals must be certified "In conversion to **demeter**". A maximum of 20% of the feed ration fed may come from the first year of conversion.

Appendix 7 Approval of exemptions (APP)

The following exemptions are foreseen in the International Demeter Standards, and can be approved by the national organisation. All approved exemptions are to be listed and reported annually to the AC.

APP No.	Description	Page
1	Bringing in seeds of untreated, conventional origin or propagation material of conventional origin	7,8
1A	Bringing in manure from animals fed GMO fodder	9
1B	Heat treatment of glasshouse soils.....	12
2	Soil kept free of vegetation	13
3	New crops and production methods (e.g. new fertilisers, plant protection and plant care agents)	15
4	Clearing of high value conservation areas	15
4A	No preparations used on steep and inaccessible land	17
5	No animals carried by the enterprise (ruminants or equidae)	17
5A	Cooperation between farms.....	18
6	Tying up of livestock	19
7	Renovation of buildings taking longer than five years (Stable construction, stable renovation, fully slatted floors)	19
8	Stock has access to pasture	19
9	Lack of open air runs for cattle	20
10	Lack of open air runs for fattening pigs.....	21
11	Dehorning and dehorned stock.....	20
12	Poultry housing existing prior to June 2013	22
13	Limit on imported organic feeds.....	24
14	Brought in feeds.....	23,25
15	Guest animals.....	25
16	Community Pasture.....	26
17	Conventional feed for poultry	26
18	Brought in stock	27,28
19	Bringing in piglets of conventional origin	30
20	Bringing in meat cockerels of conventional origin.....	31
21	Progressive conversion of farm areas	33
22	The same variety on certified and conventional areas of the enterprise (parallel production): only for perennials.....	34
23	Longer conversion time (more than five years).....	34
24	Bringing in conventional fodder in cases of need.....	37

An application for an exemption that is not foreseen must comply with the "Procedure to gain a country exemption" contained in the Directions

Appendix 8 Minimum age at slaughter for poultry

species	Minimum age (days)
chickens	81
Peking ducks	49
female Muscovy ducks	70
male Muscovy ducks	84
Mallard ducks	92
guineafowl	94
Turkeys and roasting geese	140

Appendix 9 Products authorised for cleaning and disinfection of livestock buildings and installations (e.g. equipment and utensils)

Potassium and sodium soap

Water and steam

Milk of lime

Lime

Quicklime

Sodium hypochlorite (e.g. as liquid bleach)

Caustic soda

Caustic potash

Hydrogen peroxide

Natural essences of plants

Citric, per-acetic acid, formic, lactic, oxalic and acetic acid

Alcohol

Nitric acid (dairy equipment)

Phosphoric acid (dairy equipment)

Cleaning and disinfection products for teats and milking facilities

Sodium carbonate

Appendix 10 Biodynamic preparations

Quality assurance for the production of the biodynamic preparations. This appendix gives guidelines for preparation production and use. It is a recommendation only. The Biodynamic measures which are required for Demeter certification are contained in Section four.

General aspects

The biodynamic compost and spray preparations (=“preparations”) created out of natural and organic substances are used in minute doses to enhance soil life, plant growth and quality and animal health. They act as a kind of “bio regulator”, forcing the self regulation of biological systems, e.g. the farm’s whole biological cycle (1).

They are essential to biodynamic agriculture and their use is a recognised requirement of the Demeter Standards.

The production of preparations takes place on the farm. The method of production involves taking certain plant materials (e.g. camomile flowers, grated oak bark and dandelion flowers), cow manure or quartz meal, placing them in selected animal organ parts and fermenting them in the soil for certain period of time, usually half a year. After the preparation has been dug out remaining residues of animal organs are disposed of according to the current regulatory requirements.

Application rates for the field sprays are 50-300g/ha (Horn manure) and 2.5-5g/ha (Horn silica) and 1-2 cm³ each of the compost preparations per 10 m³ of compost or deep litter manure/slurry.

For full details on the application and use of the biodynamic preparations see (2)(3).

Basic principles for making the preparations

The biodynamic preparations will be produced under the use of natural processes (e. g. winter soil rest and summer soil life) at the best in the farm on which they are to be applied. All the materials used for making the preparations should originate from this farm as far as possible.

Living biological processes are essential during production. The organs used are chosen for the unique properties they possess as a result of their former function within the animal organism. Their function is to concentrate the constructive and formative living forces into the substances of the preparations.

The animal organs used need to be of food quality standard. Disinfectants are deleterious to the process.

Produced in this special way, the preparations develop a strong yet subtle power whose effect may be compared to that of homeopathic remedies.

The materials required for the production of preparations

The following materials are used in the production of the biodynamic preparations and the estimated quantities of organ material required per acre.

Preparation	Material	Animal Organ	Quantity/year
Field Sprays			
Horn manure	Cow manure	Cow horn	1 Horn / ha (*1)
Horn silica	Quartz meal	Cow horn	1 Horn / 25 ha
Compost Preparations:			
Camomile	Flowers	Intestine (2*)	30 cm / 100 ha
Oak Bark	Bark	Skull (3*)	1 skull / 300 ha
Dandelion	Flowers	Peritoneum (4*)	30 x 30 cm / 100 ha
Not affected by Regulation (EC) 1774/2002:			
Yarrow	Flowers	Stag’s bladder (5*)	1 bladder / 250 ha
Stinging nettle	whole plant	none	
Valerian	Flower extract	none	

Annotation: (1*): if 5-time used; (2*): Bovine intestine, from BSE free countries (3*): Skull (only bone) from cows (< 1 year old), pigs or horses; (4*): Bovine peritoneum; (5*): Stag's Bladder (not originated from North America)

The origin and treatment of the animal organ material

The required animal organ material should be taken from fully certified organic animals originating from the farm wherever possible. The origin of other horns used in the production of Horn Manure is possible too.

Currently bovine intestines can only be used from BSE free countries.

All animal organs (except of stag's bladder and horns) are material of category 3 qualified for food according to Regulation (EC) 1774/2002.

The organs are used either fresh or dried.

The skull is before filling with oak bark placed in a closed container filled with saw dust and left for a period of time during which it is cleaned of any fleshy remains by means of a process of microbial maceration. After the skull is removed waste material is disposed of in accordance with current regulatory requirements.

During the production process, the filled organ material is carefully protected from disturbance by wild animals (through the use of unglazed pots, careful fencing etc.)

After the production of preparations is completed all remaining animal residues are disposed of in the required way.

Record keeping

Careful records are kept of the entire production process so that checks can be made of the following:

- The origin of the organ material (abattoir, type and origin of the animal, quantities)
- Site where preparations are being made (sketch of site)
- Date of insertion in the soil and of its extraction
- Confirmation of the disposal of any remains.

Control

Records will be checked as part of regular Demeter inspection.

Risk assessment

The application of the biodynamic preparations presents no additional risk, because

- the organ material used is of food standard quality (skull, bovine intestine, peritoneum) or permitted fertiliser (horn),
- Remaining material is removed and disposed of when production is complete,
- Biological stabilisation and the neutralisation of pathogens takes place during the half-year fermentation period,
- The amounts of prepared substance applied is extremely low (very few grams per acre),
- The compost preparations are applied to the manure and compost and not directly on the plants.

Considering the extremely small quantities used and the natural micro-biological breakdown processes involved, the production and application of these preparations is virtually risk free.

Recommended literature:

Raupp, J. & U. J. König (1996): Biodynamic preparations cause opposite yield effects depending upon yield levels. *Biol. Agric. & Hort.* 13, 175-188

Wistinghausen, C.v.; Scheibe, W.; Wistinghausen, E.v.; König, U.J. (2000): *The Biodynamic Spray and Compost Preparations Production Methods*. Booklet, Vol. 1, Stroud; 1st Ed.

Wistinghausen, C.v.; Scheibe, W.; Heilmann, H.; Wistinghausen, E.v.; König, U.J. (2003): The Biodynamic Spray and Compost Preparations Directions for Use. Booklet, Vol. 2, Stroud; 1st Ed.

The use of the Biodynamic preparations are permitted under article 12 (1) c) of EC regulation 834/2007.

Postscript

The Demeter Production Standards have been developed by members of Demeter International. Advisors as well as the regional working groups for Biodynamic agriculture and every practising Biodynamic farmer had the possibility to contribute to this development process through attendance at meetings of the respective organisations.

The Standards become the prerequisite for Demeter certification after adoption by the Members' Assembly of Demeter International e.V., ratification by the International Biodynamic Association (IBDA) and adoption by the respective organisation of each country.

The current version of these Standards arose from co-operation between those involved in practical work, advisory activity and science. They reflect the state of knowledge at a particular point in time. Therefore, development of the Standards is a continuing process.

Suggested additions or changes should be sent to the co-ordinator of the Standards Committee at Demeter International:

The Standards Committee

Demeter International production standards

Attention: Ian Henderson

ian.henderson@demeter.net

These Standards are valid for all production enterprises - farms, market gardens, and orchards – that have, or seek, Demeter certification, until they are superseded by the adoption of an amended version.