



PROCESSING STANDARDS

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

As at June 2016

- to be implemented by each member country by 1st July 2017 -

Demeter-International e.V.

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Introduction

The Processing Standards for the use of DEMETER, Biodynamic® and related trademarks describe the framework inside which products certified with these trademarks are subject to processes, which maintain value and which are continually being improved. 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.

They provide a legal basis, equally binding on all contracted parties, to assure the quality and integrity of DEMETER and Biodynamic® products.

Each processed DEMETER product covered in the relevant part of the Processing Standards for the use of DEMETER, Biodynamic® and related trademarks consists of products that have been grown using the Biodynamic method. The task when processing plant and animal products grown biodynamically is to maintain the inherent high DEMETER quality of these raw materials, and develop them to be even better suited to human requirements.

In the anthroposophical view of nutrition, attention is directed both toward the material, and the forces that are housed in it. The aim of a quality oriented processing method is to maintain these forces, and where possible tap them to make them available. It is known today that, as well as the generally recognised importance of wholefoods for physiological nutrition, food is especially nourishing when its inner quality is appropriately and harmoniously developed. Processing to yield DEMETER products must recognise this fact.

The Processing Standards for the use of DEMETER, Biodynamic® and related trademarks should not only limit and exclude. They consciously attempt to ensure that definite processing qualities are included. In the end, the point is that every processor must be able to act responsibly from his own knowledge, based on the following Standards. 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. In the long term the consumer's experience of the dependable, first class quality of DEMETER products is the best and most important advertising.

The Processing Standards for the use of DEMETER, Biodynamic® and related trademarks have to be developed together with industry representatives in the respective working groups and are then ratified by the executive bodies responsible. Each contract holder has the possibility, and is requested, to take part in the further development of the standards. The working group and the regional representatives will accept proposals for amendment.

Principles of Processing

DEMETER products are grown and processed according to the Production and Processing Standards for the use of DEMETER, Biodynamic® and related trademarks and inspected and certified by the responsible authority in the respective countries.

1. Aim

DEMETER products contribute to the nutrition, care and clothing of mankind. Therefore man stands at the centre of, and provides the yardstick for, whatever actions one may take.

The aim of processing to yield DEMETER products is the maintenance and, if possible, the enhancement of those qualities originating in the Biodynamic method.

DEMETER food provides the basis not only for bodily nutrition but also for the soul and spiritual life. This wider view of the effects of food means that the needs of mankind should also be considered on this level.

2. Basis

The basis of DEMETER product quality is the spiritual science of Rudolf Steiner (1861-1925). The ideas and methods of Biodynamic agriculture stem from it, as do the tenets of anthroposophical nutrition. Included with the normal quantitative considerations, there is the added qualitative dimension of life, soul and spirit.

3. Processing

During processing the quality of DEMETER products should be maintained and enhanced. Processing is a further refining of the Biodynamic qualities of the raw materials.

The processing methods affect the product quality. The aim therefore is to choose methods appropriate to the product and to the overall needs of mankind.

Additives and processing aids should be largely dispensed with. Some are no longer required as high quality biodynamically produced raw materials are used. Others can be replaced by the use of appropriate technologies, or by craftsmanship.

4. Assessment of DEMETER food

Both the ingredients and the processing method affect the quality of food.

For that reason the assessment of DEMETER food is carried out using analytical, microbiological, and sensory tests, as well as methods to depict the life forces (i.e. pictorial methods).

5. Description of the product

An honest product is one whose composition and life history is transparent for all traders and consumers to see. A clear declaration is the first step.

6. Ecological considerations

Production and processing of DEMETER products and their trade should be carried out in a manner which is as environmentally as friendly as possible. Responsibility toward mankind and the environment should be in the foreground at each step.

Part A

General Rules and Standards

1. Directions for Use

1.1 General

The Demeter International Processing Standards for the use of DEMETER, Biodynamic® and related trademarks were first ratified by the Members' Assembly of DEMETER International e.V. on June 25th 1999 in Sabaudia, Italy. They are compulsory for each licensee in every member country of DEMETER International in their most current version.

These standards are in addition to the respective legal requirements for organic products. For exports to the EU-countries please comply with EEC regulations 834/2007 and 889/2008

1.2 Jurisdiction

The Demeter International Processing Standards for the use of DEMETER, Biodynamic® and related trademarks are the basis for the national processing standards in each country. They are valid for all processors and traders who produce or trade in DEMETER products. The DEMETER organisation in each country is responsible for the licence contracts for the DEMETER, Biodynamic® and related trademarks. The DEMETER Organisations are the contracting party of all companies registered in their country and all processors and traders must have a valid contract with their respective organisation.

Cosmetic companies with an international contract for ingredient labelling may sell through distributors, who themselves are not required to have a contract with the respective organisation.

Use of the registered names and/or logos without a contract with the DEMETER organisation responsible for that country is forbidden and may result in prosecution.

1.3 Implementation in each Country

The DEMETER organisation in the country is bound to adopt these processing standards no later than one year after receipt of the version accepted by the Members' Assembly.

The Processing Standards for the use of DEMETER, Biodynamic® and related trademarks are minimum standards, exemptions are handled as follows:

- 1.3.1 On the basis of a well-founded application by a country the Members' Assembly can grant an exemption to a particular point of these standards. This exemption is valid for a maximum of three years and for the applying country only.
- 1.3.2 Copies of all exemptions granted by the countries' DEMETER organisations to processors and traders are to be sent to the secretary of DEMETER International by April 30th. The secretary will send them to the Accreditation Council.
- 1.3.3 The exemptions granted by the countries' DEMETER organisations are discussed by the Accreditation Council. Its report with a detailed list of all exemptions is to be sent at the latest 3 weeks before the Members' Assembly to all countries, either by fax or by email.

1.4 Binding nature of the Demeter International Processing Standards for the use of DEMETER, Biodynamic® and related trademarks

The Demeter International standards provide a minimum framework of rules which products must meet in order to use DEMETER, Biodynamic® and related trademarks. The national processing standards may be more stringent; they are the basis for certification.

2. Composition and form of products using DEMETER ingredients

2.1 General

The processing standards primarily regulate the composition and production of the products. It is a matter of ingredients, additives, processing aids, and methods of processing. The allowable aids and additives in this standard for DEMETER food items are listed under 5.3 and 5.4; a description of the fundamentally unacceptable processing methods in 5.1

Only those aids and additives or processing methods, which are expressly listed are allowed to be used.

2.2 Origin of the raw materials and aids or additives

Fundamentally only agricultural products (including animals) which originate from Biodynamic farms which have a contract with the DEMETER organisation in their country, and Demeter certified additives and aids may be used for processing or further processing. That applies too, to DEMETER products based on alcoholic fermentation (according to Section XII, XIII and XIV). If the product, aid or additive is not available in DEMETER quality, the following priorities must be observed:

- products inspected and certified by recognised organic certification bodies.
- products inspected and certified to EEC regulations 834/2007 and 889/2008 or other valid organic laws
- uncertified products listed in Annex IX of EEC regulation 889/2008 or other valid organic laws

2.3 Partially processed products

If partially processed products are used as ingredients, they may contain no additives that are disallowed in the Processing Standards for the use of DEMETER, Biodynamic® and related trademarks. They may be produced using only those processing aids that are allowed in the Processing Standards for the use of DEMETER, Biodynamic® and related trademarks. The maximum amount of conventional ingredients (i.e. those not allowed under these standards), which may be included is governed by EEC regulations 834/2007 and 889/2008 or other valid organic laws.

2.4 Labelling

The requirements for labelling are specified in the Labelling Standards for the use of DEMETER, Biodynamic® and related trademarks.

The list of ingredients is a complete declaration which includes the quality of the raw materials. Special attention is to be given to ingredients and partially processed products.

The calculation of the percentage of each ingredient is by weight at the time of the inclusion of that ingredient in the production process. Water, salt, micro-organisms and cultures (i.e. yeast, moulds for cheese), when used according to these standards, are not included in the calculation of ingredient percentages.

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.

3. Quality Assurance

It is the responsibility of every contracted party to guarantee the quality of DEMETER products by using optimal operational methods and well thought out measures and processes. Often the regulations governing food demand a management system to ensure internal controls in the business (e.g. Quality management, HACCP).

It is recommended that regular staff training be used to instil good production practice, and promote motivation for the Biodynamic content and its special character.

3.1 Processing

If a business produces conventional and/or organic products as well as DEMETER products a separation, purging/flushing protocol is to be approved by the respective authority. It must ensure that all contamination of the Demeter product is excluded, whether as incoming raw materials, during processing, or subsequently. Therefore it must cover the cleaning of equipment and containers, strategies to prevent mixing of Demeter products with uncertified material as well as addressing all other areas of potential contamination. As a rule the DEMETER production run should precede the organic run which should precede the conventional one.

All staff involved in any step of the process are to be fully informed about the separation protocol.

A quality manager shall be named who is responsible for seeing that the protocol is correctly implemented.

3.2 Storage

The business is to be organised in such a way that the mixing with conventional or other organic raw materials, with technical aids or with other finished products (of different quality) is impossible. Separate storage areas and clear labelling is required for all raw materials, partially processed and finished products. The protocol mentioned in 3.1 above shall define these separation procedures.

Storage and stored item pest management is regulated in Section 8 of the standards (Pest control).

3.3 Product flow and documentation in the business

Every business must be organised such that the flow of goods, (from buying in the raw materials until sale of the end product) is transparent.

Further, the products that are traded must be documented, e.g. in product lists. The recipes used, the processes employed, as well as the ingredients, the processing aids and the additives must also be documented.

3.4 Statutory Health Department Requirements

Every business must meet all statutory requirements regarding cleanliness, health and hygiene.

4. Application for New Products, and the Approval Process

New products must be approved by the DEMETER organisation in the respective country before they are offered for sale.

5. Regulation of Processes and Ingredients

In principle the only processes and ingredients which are permitted are those which are expressly described in the standards.

The desired product is made from the raw materials which, together with various ingredients, are subjected to a processing method. Here it is important that in making use of such technologies, product quality is preserved as much as possible. The high nutritional qualities originating from the Biodynamic agricultural method should be largely maintained. At the same time qualities such as smell, taste and visual appearance, as well as hygiene, are to receive attention. In choosing specific processing steps, consideration is to be given to minimising the environmental impact, and the use of resources such as energy and water.

5.1 Processing procedures

5.1.1 Permitted processing procedures

5.1.1.1 UV light can be used to disinfect process water or process air

5.1.2 Procedures expressly prohibited on DEMETER products

5.1.2.1 Irradiation with ionising radiation of DEMETER food or ingredients for DEMETER products

5.1.2.2 Production of DEMETER products with the aid of genetically modified plants and animals, or using additives/processing aids that result from genetically manipulated organisms or from derivatives of such organisms.

5.1.2.3 Fumigation of DEMETER products to prevent sprouting, or for pest control, or the use of fumigated ingredients in the production of DEMETER products (Exceptions are the use of CO₂ or N₂)

5.1.2.4 Treatment of DEMETER products with microwave.

5.1.2.5 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 nanometers 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.

5.1.2.6 The use of varieties generated by cell fusion technology (cytoplasm and protoplasm). Until a maximum contamination limit is determined, Demeter International requires contamination to be less than 3 %. If organic ingredients are used, the processor is also obliged to exclude material of cell fusion technology origin. This must be documented by a declaration from the organic source.

5.2. Regulation for the use of flavourings

Pretending taste by adding flavours is not allowed. Pure extracts as well as herbs and spices may be used to round off the products.

5.3. List of allowable additives and processing aids for DEMETER products

| Product groups with their abbreviations* | | | |
|--|--|-----|--------------------------------|
| BB | Bread and Bakery | FV | Fruit and Vegetables |
| MI | Milk and Milk Products | Oil | Fats and Oils |
| S | Sweetening agents, chocolate and ice-cream | IMF | Infant Milk Formula |
| MS | Meat and Sausage | HS | Herbs and spices |
| COS | Cosmetics | G | Grain products, pasta and tofu |
| W | Wine | B | Beer |
| A | Alcohol | | |

Table of additives and processing aids which are generally permitted, or permitted with restrictions, for Demeter products. In general it is necessary to use the additives according to the described order of priority (see chapter A, 2.2 origin of raw materials).

| Additive/processing aid | E-No. | Product group* | Restriction/note |
|--|-------------------------|----------------|---|
| Calcium carbonate CaCO_3 | E170 | All | As free flowing agent for salt |
| | | W | Acidity regulation |
| | | MI | Only for sour milk cheese |
| | | HS | As free flowing agent for herbs and spices |
| | | A | |
| Carbon Dioxide CO_2 | E290 | All | As inert gas/processing aid for all product groups. |
| | | | CO_2 as an ingredient in the production of Italian soda (flavoured soda water) and non-alcoholic beverages. |
| Nitrogen N_2 | E941 | All | As inert gas/processing aid for all product groups. |
| Argon Ar | E938 | All | As inert gas/processing aid for all product groups. |
| Ozone O_3 | | | Limited to treatment of cool store atmospheres; not to be used on products. |
| Lecithin | E322 | S, OIL, COS | In organic quality for chocolate |
| Citric acid $\text{C}_6\text{H}_8\text{O}_7$ | E330 | OIL | only for removal of mucilage |
| | | S | Clarification (hydrolysis of starch) |
| | | A, COS | |
| Sodium citrate $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$ | E331 | MS | Only for scalded sausage if it is not possible to process the meat warm. |
| Calcium citrate $\text{Ca}_3(\text{C}_6\text{H}_5\text{O}_7)_2$ | E333 | FV | |
| Tartaric acid $\text{C}_4\text{H}_6\text{O}_6$ | E334 | W | Acidity regulation, processing aid |
| | | FV | |
| Potassium bitartrate $\text{KC}_4\text{H}_5\text{O}_6$ | E336 | W | Tartar stabilisation |
| Agar-Agar | E406 | FV, S, G | Only for spreads based on fruit and sweet milk products e.g. ice-cream |
| | | MI | Only for puddings |
| Carob bean Gum | E410 | All | |
| Guar gum | E412 | All | |
| Gum arabic | E414 | S | |
| Pectin | E440i | BB, MI, FV | |
| Tartaric acid baking powder $\text{KHCO}_3/\text{NaHCO}_3/\text{C}_4\text{H}_6\text{O}_6$ $\text{KC}_4\text{H}_5\text{O}_6/\text{NaC}_4\text{H}_5\text{O}_6$) | E500/ E501/ E334/ | BB | (Sodium or Potassium bicarbonate, with Tartaric acid, sodium or potassium tartrate in any combination); Grain starch is the only permitted carrier. |

| Additive/processing aid | E-No. | Product group* | Restriction/note |
|--|---------------|-------------------------------|---|
| | E335/ E336 | | |
| Sodium bicarbonate NaHCO_3 | E500 | S | |
| Potassium bicarbonate KHCO_3 | E501 | W | Acidity regulation |
| Potassium carbonate K_2CO_3 | E501 | BB | Gingerbread only |
| | | Cocoa production | |
| Sodium carbonate Na_2CO_3 | E500 | B | Softening water for brewing |
| | | S | Sugar production |
| Calcium sulphate CaSO_4 | E516 | B G | Grain products – tofu production |
| Magnesium Chloride | E511 | G | Tofu production |
| Sodium hydroxide (lye) NaOH | E524 | BB | Lye bakery products only |
| | | S | Sugar production |
| | | G | To adjust the pH in the production of starch |
| | | COS | Soap production |
| Potassium hydroxide KOH | E525 | COS | Soap production |
| | | S | |
| Lime water/Calcium hydroxide Ca(OH)_2 | E526 | S | Sugar production |
| Calcium Chloride CaCl_2 | E509 | MI | Only for cheese production |
| Carbonic acid H_2CO_3 | | S | To precipitate out excess calcium |
| Salt | | All | Sea salt, rock salt or refined salt without the addition of iodine or fluorine. Permitted free flowing agent Calcium carbonate |
| Gelatin (at least of organic quality) | | BB | Only for bakery products containing yoghurt, cottage cheese or cream. |
| | | FV | For clarification (cosmetic reasons) of fruit and vegetable juices. |
| | | All categories except wine | As ingredient, listed on label |
| 'Native' Starch, pre- gelatinised starch | | All | At least organic quality |

| Additive/processing aid | E-No. | Product group* | Restriction/note |
|---|-------|----------------|--|
| Smoke | | MI MS | From native, untreated wood e.g. Juniper, conifer, also spices. |
| Aroma extracts | | All | Pure etheric oils or pure extracts identical with the parent material and made using permitted extracting agents. |
| Bees wax Carnauba wax Vegetable oil | | BB | Non-stick agents |
| Rennet | | MI | Also chemically preserved |
| Bees wax Natural hard paraffin wax Micro-crystalline Wax Plastic films | | MI | As a coating only on cheese, uncoloured and without fungicide treatments (also without additives such as short chain polyolefin, polyisobutylene, butyl or cyclic rubber) |
| Lactic acid $C_3H_6O_3$ | | MS | Only for preparation of natural casings |
| Starter cultures | | All | No genetically engineered cultures (documentation required), not chemically preserved. |
| Ethylene C_2H_4 | | FV | Only for ripening bananas |
| Alum $KAl(SO_4)_2 \cdot 12H_2O$. | | FV | For organic banana production to stop latex flow from the cut surface of the banana hands |
| Enzymes | | FV | Enzymes can be used for pressing and clarification of juices. |
| | | S | Grain starch invert sugar production: Xylose (Glucose) Isomerase |
| | | COS | All naturally occurring enzymes |
| | | A | Enzymes can be used for the production of alcohol. |
| | | | All enzymes (including additives and carriers) used must comply with the following requirements: - GMO-free - Free from preservatives (an exemption can be approved, based on a non-availability declaration by 3 suppliers). - Glycerine may be added to the enzymes, but must be produced from sustainable sources. |
| Yeast | | BB, W, A, B | GMO free |
| Oil | | S | To prevent foaming |
| | | FV | As non-stick agents for dried fruit and vegetables |
| Filter materials | | All | Asbestos free, Chlorine free |

| Additive/processing aid | E-No. | Product group* | Restriction/note |
|-----------------------------------|-------|----------------|--|
| Diatomaceous earth | | All | |
| Perlite | E599 | All | |
| Bentonite | | All | |
| Activated carbon (carbon filter) | | All | |
| Plant proteins (e.g. pea protein) | | FV | For cosmetic reasons, clarification and fining |
| Tannic acid | | S | Natural origin |
| | | A | |
| Organic ester sucrose | | S | Organic quality |
| Sulphuric acid | | S | pH control in sugar production |
| Inulin and other oligosaccharides | | S | In Organic quality only for ice-cream |

5.4 List of the allowable types of sugar and salt

Sugar type

Table (no manufacturing) honey
 Whole cane sugar
 Raw sugar
 Maple syrup
 Coconut and palm sugars
 Fruit juices
 Concentrated fruit juices
 Agave juice concentrate
 Jerusalem artichoke syrup
 Malt extract, malt syrup
 Grain and starch sugars

Product Group*

FV, NS, BB, G, MS, MI
 FV, NS, BB, G, HS, MS, MI
 FV, NS, BB, G, HS, MS, MI
 FV, NS, BB, G, MS, MI
 FV, NS, BB, G, HS, MS, MI
 FV, NS
 FV, NS, BB, G, MI
 FV, NS, BB, G, MI
 FV, NS, BB, G, MI
 FV, NS, BB, G
 FV, G, MS, BB

Salt type

Sea salt, rock salt or refined salt without the addition of iodine or fluorine All

Salt may contain Calcium Carbonate or magnesium carbonate (E504) as an anti-caking or free flowing agent. For other anti-caking or free flowing agents a written approval by the respective organisation is necessary. It has to be substantiated that it is impossible to use salt with Calcium Carbonate or without anti caking in the specific production process.

6. Packaging and packing materials

Packaging is an important issue. The specific Biodynamic quality of the Demeter products has to be maintained and protected by the materials. Environmental aspects are to be also taken into account when developing a packaging strategy for Demeter products. In many cases the packaging is an important part of the product's appearance. Therefore, the packaging materials, as well as aspects related to them, are to emphasise the Demeter quality. Packaging is becoming more and more an important marketing tool.

Developments in packaging materials, such as fully compostable bio-plastics are penetrating the organic market. On the other hand, there might be very specific demands for the packaging of certain Demeter products. Packaging machines and packaging materials often require major, long-term investments.

For these reasons there are few specific norms and standards for packaging and packaging materials, but packaging strategies for Demeter products are to be assessed by the respective organisation.

The minimal requirements are:

It is not permitted to use materials containing chlorine (such as PVC) for the packaging of Demeter foodstuff.

For the packaging of Demeter products, the use of aluminium is to be avoided. If it is necessary then it should be of recycled origin. Pragmatic packaging solutions that do not meet the principles of Demeter processing can only be approved for a limited time.

The information is assessed on the following criteria:

Where possible packaging should be avoided.

The product quality needs to be guaranteed. The respective organisation can request research.

The specific Biodynamic quality should also be maintained.

Possible adverse health effects on the consumer need to be taken in consideration (e.g. toxicological effects of the products). Where possible:

The packaging should be taken back (e.g. return system).

The materials have to be certified (EN 13432, DIN V 54900) for full composting (breaking down to C and O₂)

The materials used are to be suitable for full recycling.

If the above-mentioned criteria cannot be met, an exemption can be approved by the respective organisation for the best possible environmental solution. The exemption has to be based on information on the packaging materials (full specifications of the materials and production processes), as well as a plan for development of a more suitable packaging strategy. An exemption can be approved for a maximum period of five years.

Note: The exemptions for approval of "the best possible, environmental solution" have to be sent to the Accreditation Council.

7. Changes to existing rules

Fundamentally the rulings detailed in the general and specific standards are not immutable. If it becomes sensible or necessary to seek amendments, a written application, including justification, is to be made to the Members' Assembly of DEMETER International Inc.

The same course of action is available if these standards do not cover important specific requirements in a particular country.

8. Standards for pest control

8.1. Basis and jurisdiction

The jurisdiction of these standards extends to the storage, inside work areas and outside areas of the processing business. There is a specific chapter (8.3.2) dealing with the treating Demeter-products themselves.

8.2. Preventative measures

Preventative measures have absolute priority over all types of control. All procedures and substances listed here are approved for both prevention and monitoring.

8.3 Pest control measures

8.3.1 General control measures

- High level of hygiene, tidiness and cleanliness
- Traps (catch-alls, traps with bait, traps with anti-coagulant poison baits for rodents, UV-traps, traps with alcohol, sticky papers, inert atmospheres)
- Natural oils with a repelling effect (Citrus, linseed, animal oils)
- Ultra sound generators
- Parasitic or predator insects (e.g. Lariophagus)
- Diatomaceous earth
- Thermal treatment (heating, freezing).
- Pyrethrum (without Piperonyl-butoxide). The respective organisation can issue an exemption if PBO is present in materials legally required to be used.

8.3.2. Treating affected products (as appropriate to the product)

- Washing with water or steam
- Sieving or beating
- Aspiration
- Compressed air
- Thermal measures (Cooling, blast freezing, heat)
- Inert gas treatment e.g. with nitrogen or carbon dioxide.

8.4. Treatment protocol

Many processors outsource pest control to professional companies. These companies keep a log-book of their activities and findings. This log-book must be available for inspection. The licensee must have a contract with the pest control company confirming that the company will comply with this standard.

If pest control is not outsourced, all measures using substances need to be protocolled (date, material, dosage, location of bait stations).

8.5 Control measures in acute cases

If the preventative measures are not sufficient, and other control measures are necessary, then physical methods are to be used in preference to chemical ones. As a rule, when using chemical agents, only empty rooms may be treated. Any DEMETER products are to be removed in advance.

In acute cases of outbreaks a professional subcontractor may be hired to take control measures with other means or substances than the ones mentioned above.

Approval of the respective Demeter-organisations is required, before application. To apply for an approval, the following must be submitted:

- Advice and substantiation by a professional in pest control.
- Description and specification of means and materials.
- Description of the measures to avoid contamination of products.
- Measures to improve prevention in order to avoid repetition.

Agreements to improve preventative measures in the long term may be part of the procedure to approve control measures in acute cases.

8.6 Cleaning

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

- Potassium and sodium soap
- Milk of lime
- Lime
- Quicklime
- Sodium hypochlorite (e.g. as liquid bleach)
- Caustic soda
- Ionised water
- Caustic potash
- Hydrogen peroxide
- Natural essences of plants
- Citric, peracetic, formic, lactic, oxalic and acetic acids
- Alcohol
- Nitric acid (dairy equipment)
- Phosphoric acid (dairy equipment)
- Sodium carbonate

9. 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.

Part B

I

Standards for the certification of DEMETER fruit and vegetable products including potatoes and potato products

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3. Fruit vinegars, tomato paste, horse radish preparations

- 3.1. Fruit vinegar
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1. **Fruit** (in principle all DEMETER fruit can be used)

1.1. **Storage of the fruit**

Chemical preservation such as surface treatment or fumigation with chemical preservatives is prohibited, as is irradiation of the fruit.

Acceptable methods are cool storage, modification of humidity, and controlled atmosphere storage.

1.1.1. Ripening of bananas

Ethylene can be used for the ripening of bananas.

1.2. **Ingredients and additives**

1.2.1. Ingredients

All DEMETER raw materials can be used as ingredients.

1.2.1.1. Sweeteners as described in table 5.4 Part A.

1.2.2 Additives and technical aids

1.2.2.1 Additives

- Pectin E 440a for spreads based on fruit.
- Agar-agar E 406 for spreads based on fruit (These may not contain phosphates or calcium sulphate, and may not be preserved with sulphur dioxide).
- Carob bean gum E 410 for spreads based on fruit.
- “native” starch and pre-gelatinised starch in certified organic quality
- Enzymes, also in dried form (amylolytic, pectolytic, proteolytic, not chemically preserved, and not from genetically modified organisms - this must be certified in writing by the supplier) may only be used in difficult pressings, e.g. blackcurrants, blackberries, gooseberries, or in the production of juice concentrates.

1.2.2.2 Technical aids

The following are permitted:

- Plant oils and fats (non-hydrogenated) as non-stick agents for dried fruit.
- CO₂ and N₂ as cooling agents and for controlled atmosphere storage.
- Alum for organic banana production to stop latex flow from the cut surface of the banana hands.

The following aids can be used only with the written permission of the respective DEMETER organisation:

- Food grade gelatine for cosmetic reasons
- Bentonite for eliminating proteins
- Plant proteins (e.g. pea protein) for cosmetic reasons, clarification and fining

The approved processing aids for filtering and their restrictions are listed in 5.4

1.3. Processing methods according to product groups

1.3.1. Preparation

1.3.1.1. Washing of fruit

Preliminary washing can be with tap water. Final cleaning of the fruit must be done with pure drinking water.

1.3.1.2. Chopping of fruit

Chopping of fruit is done mechanically.

1.3.2. Preserving of fruit

1.3.2.1. Dried fruit

Drying is the oldest and often the gentlest preservation method for fruit.

Lemon juice or lemon juice concentrate is used for the treatment of fruit to prevent browning. The treatment of fruit with sulphur dioxide, or sulphate solution is not permitted. A short treatment with boiling water is used to remove a waxy layer e.g. plums.

Freeze drying is only allowed for certain applications and only with an exemption issued by the respective organisation. Plant oils and fats (non-hydrogenated) may be used as non-stick agents.

1.3.2.2. Frozen fruit

Only fresh, impeccable fruit may be used for freezing. Treatment of the fruit with natural acids e.g. lemon or lemon juice concentrate is permitted. Fruit may be blanched before freezing. The addition of saccharose in dried form, or as syrup is not permitted. The use of ascorbic acid as an antioxidant is not allowed.

1.3.2.3. Sterilised fruit preserves

Only impeccable raw fruit may be used for the production of fruit preserves. Natural acids e.g. lemon juice or lemon juice concentrate may be used to treat the fruit. The bottling liquid may be prepared using food grade honey, whole cane sugar or raw sugar. For nutritional reasons these additives should be used in the lowest concentrations possible. High temperature short time (HTST) methods should be used for sterilisation where at all possible.

1.3.3. Fruit juices, nectars and juice concentrates

1.3.3.1. Fruit juices and unrefined juice extracts

Fruit juices and unrefined juice extracts are mechanically made from ripe, healthy, fresh DEMETER fruit. They may not be reconstituted from concentrates. Additives and ingredients other than pure fruit juice are not allowed. Enzymes, also in dried form (pectolytic, proteolytic and amylolytic), not chemically preserved, may be used for difficult pressings e.g. black currants, black berries, gooseberries. The addition of sulphur dioxide is prohibited in the production of juices. Pasteurisation, cooling and carbonic acid pressure treatment are allowed as preservatives. The removal of material causing cloudiness can be achieved, where necessary, by centrifuging. The approved processing aids for filtering and their restrictions are listed in 5.3

- Diatomaceous earth for fine filtration
- Bentonite for the elimination of protein
- Gelatine for cosmetic reasons.

In principle, the aim is to produce as far as possible naturally cloudy juices. Mechanical chopping is allowed. The pasteurisation and bottling of juices is to be carried out in the gentlest manner, which least degrades the quality of the juice. Aseptic bottling is possible and desirable.

1.3.3.2. Nectars (Diluted sweetened juices)

Nectars can be produced from stone fruit and pip fruit (as well as wild fruits and berries), using the sweeteners listed in 5.4 Part A, and drinking water, in as far as it is necessary to add the water in order to obtain drinkable beverages. The highest proportion of fruit juice (fruit pulp) to added food grade honey and /or sugar is to be the aim. Pasteurisation and bottling of the juices is to be carried out in the gentlest manner which least degrades the quality of the product. Aseptic bottling is permitted.

1.3.3.3. Juice concentrates

The production of juice concentrates begins with the fruit juices or unrefined juice extracts (see 1.3.3.1.). Juice concentrates are produced without additional sweetening. Evaporation should take place in a multi-stage downdraft evaporator and/or a thin layer evaporator, where possible under vacuum. Enzymes also in dried form (pectolytic, proteolytic and amylolytic without chemical preservatives) may be used to produce juice concentrates. Regulating the acidity with calcium carbonate is prohibited.

Clarification (see 1.3.3.1 and 1.2.2.2 above) is allowed with written permission.

1.3.3.4 Fruit syrups

Syrups are undiluted sweetened fruit concentrates that will be diluted for drinking – sweeteners see Part A 4. For nutritional reasons these additives should be used in the lowest concentrations possible. Pasteurisation and bottling is to be carried out in the gentlest manner which least degrades the quality of the product. Aseptic bottling is permitted. High temperature short time (HTST) methods should be used for sterilisation where at all possible.

1.3.4. Fruit pulp, paste, fruit cheeses, spreads based on fruit, and partially manufactured products

1.3.4.1. Partially manufactured products (pulp and fruit paste)

The partially manufactured products may not be chemically preserved. During extraction of the paste, care must be taken that as much core material as possible is removed.

1.3.4.2. Fruit juice setting agents

The production of traditional fruit juice setting agents from DEMETER fruit is possible and desirable. Its use can replace other thickeners, giving a better product.

1.3.4.3. Fruit pulp and paste

Paste: to be prepared without sweeteners e.g. apple to apple paste.

Pulp from sourer fruits e.g. apple pulp may be sweetened with honey, whole cane sugar or raw sugar.

Plum pulp: an unsweetened product made from fresh or dried plums, or pulp. Other additives are not allowed. Pulp from other, sweet fruits e.g. mango, pear: no other additives are allowed apart from the fruit.

1.3.4.4. Fruit cheeses

The addition of any sweetener is prohibited. Fruit cheese is made from fruit by steaming or boiling, pressing and evaporating. Evaporation takes place, where ever possible, under vacuum. If fruit juices are used in preparing fruit cheese, they must fulfil the requirements set out in 1.3.3.

1.3.4.5. Spreads based on fruit (fruit preparations)

If fruit pulp or fruit paste is used in preparing spreads, they must fulfil the requirements of 1.3.4.1 and 1.3.4.3. Pectin E 440a, and agar-agar E 406 as setting agents; carob bean gum E 410 as a thickener; and “native” starch and pre-gelatinised starch are permitted. The maximum amount of naturally available pectin should be used for setting. Naturally occurring acids e.g. lemon juice or lemon juice concentrate are permitted to regulate acidity or as anti-oxidants. Sweeteners are listed in table 5.4 Part A. The evaporation of spreads, if carried out, is to be done under vacuum. Agave juice concentrate or Jerusalem artichoke syrup is recommended as sweeteners for diet-spreads.

2. Vegetables, including potatoes

(That which is specified here for vegetables, applies also to potatoes).

All DEMETER vegetables and potatoes can be used.

2.1. Storage of vegetables

It is prohibited to treat vegetables with chemical preservatives (e.g. ethylene or acetylene) for storage. Irradiation is also prohibited. The recognised storage methods in store rooms or pits (according to the vegetable type) as well as storage in controlled atmosphere storage rooms are permitted.

2.2. Processing of vegetables

2.2.1. Ingredients and additives

All DEMETER raw materials can be used. In addition the following are permitted:

- Starter cultures (not genetically modified; a written certificate to this effect must be provided by the supplier).
- Salt see table 5.4 Part A.

Permitted sweeteners:

- See table 5.4 Part A. All sugars as to table 5.4. part A may be used as part of the fermentation process for acetic acid and lactic acid products.

2.2.2. Processing aids

- Filter materials for vegetable juices, see 5.4 Part A
- Diatomaceous earth for clarification (only with a granted exemption)
- CO₂ and N₂ as coolants and for controlled atmosphere storage.

- Plant oils and fats (unhydrogenated).

2.3. Processing according to product groups

2.3.1. Preparation of vegetables

2.3.1.1. Washing

Preliminary washing can be done with tap water. Final cleaning must be done with pure drinking water.

2.3.1.2. Cleaning and peeling

Mechanical cleaning methods are permitted in general. Mechanical peeling methods are allowed for those vegetables whose skin is not suitable for eating. Steam may be used for peeling.

2.3.1.3. Chopping and sorting

The usual methods are used for chopping and sorting.

2.3.1.4. Blanching

Blanching is to be carried out where possible with steam because of better nutrient retention.

2.3.2. Preserved vegetables

2.3.2.1. Dried vegetables (including mushrooms)

The usual processes (see section 2.3.1. Washing, sorting, cleaning - if necessary cutting and dicing) are used in the preparation of vegetables. Treatment with naturally occurring acids, (e.g. lemon juice and lemon-juice concentrate) is allowed, in order to prevent browning. Freezing after blanching in order to lower the water content is not permitted, nor is the treatment with sulphur dioxide or sodium sulphite. Plant oils and fats (unhydrogenated) may be used as non-stick agents. Drying should be done in the gentlest manner possible, e.g. using dehumidification.

The following methods are prohibited: High frequency drying, chemical moisture extraction (apart from salt) and direct drying by burning fossil fuels. Freeze drying is only allowed for certain applications and only with an exemption issued by the respective organisation.

2.3.2.2. Vegetables in cans and glass (including mushrooms)

The usual processes (see section 2.3.1. Washing, sorting, cleaning - if necessary cutting and dicing) are used in the preparation of vegetables. Treatment with naturally occurring acids, (e.g. lemon juice, apple juice, sauerkraut juice) is allowed for light coloured vegetables. The use of calcium chloride on tomatoes is prohibited.

Vegetable preserves are to be adequately heat treated (sterilised).

2.3.2.3. Preserving vegetables by making them sour

- Lactic acid preservation of vegetables.

Starter cultures are permitted for vegetables preserved with lactic acid. Up to 1% food grade honey, whole cane sugar or raw sugar may be added. Preservatives are not allowed. Olives preserved with lactic acid may not be treated with sodium hydroxide. Pasteurisation of vegetables preserved with lactic acid is allowed, but should only be used when it is unavoidable.

- Acetic acid preservation of vegetables (use of vinegar)

The bottling liquid is made with vinegar, food grade salt and honey, whole cane sugar or raw sugar, as well as herbs and spices. The addition of lemon juice is allowed. Isolated natural acids and chemical preservatives are not permitted. The finished product may be pasteurised.

2.3.2.4. Frozen vegetables

The usual processes (see section 2.3.1. Washing, sorting, cleaning - if necessary cutting, dicing and blanching) are used in the preparation of vegetables. The vegetables are frozen without extra liquid. The freezing process should take place as quickly as possible, using rapid-freeze methods (e.g. cold air convection processes, freezing in liquids, cold steam methods, blast freezing with liquid nitrogen).

2.3.3. Vegetable juices

To acidify vegetable juices, naturally occurring acids (e.g. DEMETER cider vinegar, sauerkraut juice) can be used. Sauerkraut juice is to be pressed from DEMETER sauerkraut. Filtration with diatomaceous earth is allowed only with the express permission of the DEMETER organisation in the respective country. According to the pH value, juices will be pasteurised or sterilised. Pasteurisation, being less destructive of quality, is to be preferred. Mechanical chopping of juices is permitted.

3. Fruit vinegars, tomato pulp, horse radish preparations

3.1. Fruit vinegars

Starter cultures are permitted.

Fruit vinegar (also wine vinegar and beet vinegar) is to be produced from DEMETER fruit. Demeter alcohol is permitted as an ingredient in vinegar production. Vinegar essences are not to be produced. Both traditional and rapid vinegar processes may be used. The addition of caramel colouring and sulphurous acid is not permitted, nor is the use of E536 (potassium hexacyanoferrate). Synthetic vinegar production methods are prohibited.

3.2. Tomato pulp

Tomato paste is produced from pulp by water reduction using heating. To adjust the content of dry matter, fresh pulp may be added back in. Chemical preservatives are prohibited.

3.3. Horse radish preparations

The production of horseradish preparations such as grated horseradish, table or delicatessen horseradish may not include the use of sulphur dioxide (SO₂). The addition of lemon juice or lemon juice concentrate is allowed.

II

Standards for the certification of DEMETER nuts, seeds and kernels as processed products (Nut butter and spreads for bread)

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- 3. **Processing**

- 1. **General**

Oils and fats, which originate from nuts, seeds and kernels are covered in section IX .

Nut butter may contain all types of nuts and seeds, but the types must be declared on the label.

- 2. **Ingredients**

- 2.1 Ingredients

In principle all raw materials of DEMETER quality may be used.

- 2.2 Sweetening agents and Salt

As defined in table 5.4., Part A

- 3. **Processing**

Only mechanical methods such as washing, drying, roasting, peeling, mixing, chopping are approved for all steps in the processing.

III

Standards for the certification of DEMETER bread, cakes and pastries

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- 2.6. Baking tins and trays

3. Labelling (additional information)

1. Ingredients and additives

1.1 Ingredients

In principle all DEMETER raw materials may be used as ingredients.

1.1.1 Milk and milk products

As a blanket rule dried milk products may not be used

1.1.2 Sweetening agents

See table 5.4 Part A

1.1.3 Raising agents

1.1.3.1 Micro-organism

The following raising agents may be used:

- Baking ferments
- Sour dough produced by the bakery. Culturing acid may be used as a starter only in the first stage.
The aim is to develop a multi-stage process without the use of yeast.
- Yeast. Organic yeast, or if unavailable, yeast grown on organic substrates. Only if neither is available may conventional yeast be used. Written confirmation that the yeast is not genetically modified is required

1.1.3.2 Chemical raising agents

The following raising agents may be used:

- E 501 for ginger bread and honey bread
- Tartaric acid baking powder (Sodium or Potassium bicarbonate, NaHCO_3 (KHCO_3), together with Tartaric acid). Grain starch is the only allowable carrier which may be mixed with it.

Raising agents containing phosphates are prohibited.

1.1.4 Salt

See table 5.4 Part A

1.1.5 Fats for deep-fried bakery products

Peanut and palm oils at least in organic quality are permitted only for deep-frying

1.1.6 Chocolate coating

Chocolate coating of certified organic quality can be used. If lecithin is present as an additive then it must not have originated from a genetically modified organism.

1.1.7 Fruit preparation

See Part B I Section 1.3.4

1.2 Additives

1.2.1 Approved setting agents

- E 406 Agar-agar
- E 440a Pectin. The pectin may not contain phosphates, calcium sulphate or refined sugars and the solution may not be preserved with sulphur dioxide. E 440b Potassium pectate is prohibited
- Gelatine may be used only for yoghurt and cottage cheese and for cream preparations.

1.2.2 Alkaline brines

A four per cent solution of sodium hydroxide, E 524, is allowed in the production of Brezel and salt-bakery products.

1.2.3 Flavouring

Flavourings for use in fancy baking are to be solely pure etheric oils or pure extracts identical with the parent material. These flavourings and extracts may be obtained using the following extraction methods:

Pressure, water and steam, vinegar, oil, ethanol or CO₂.

1.2.4 Baking improvers

Basic principle: each country has to decide on the basis of the baking quality of the wheat whether baking improvers are needed and can be used.

The following materials may be used as baking improvers in the production of small bakery items, baguette, rusks, and toast:

- Wheat gluten, but only in DEMETER bakery products containing wheat (it is prohibited in wheat free bakery products).
- Acerola powder, accompanied by a declaration that the malt -dextrin carrier contains no genetically modified organisms, and has not been produced with the aid of genetically modified organisms.
- Fruit juices, malt and soya flour are permitted, and must be of DEMETER quality if available. Conventional baking improvers may contain only those ingredients and additives which are listed in sections 1.1 and 1.2. All baking improvers used in DEMETER bakery products require approval by the DEMETER organisation in the respective countries i.e. confirmation that they meet the standards.

All ingredients and additives in the baking improvers are to be included in the complete declaration as required for the labelling of wrapped or loose DEMETER bakery products.

1.3 Aids

1.3.1 Non-stick agents

Suitable non-stick agents are flour (from grains), plant oils and fats, butter and other animal fats. Wood flour, magnesium oxide and non-stick emulsions are not permitted. Wax is allowed until a more suitable replacement material is found.

1.3.2 Baking paper and baking foils

Baking in foil is prohibited.

Baking paper and baking foil may only be used to prevent sticking of small bakery items (e.g. salt pretzel, buns, biscuits etc.).

2. Processing methods

2.1 Milling

The use of hammer mills is prohibited because of the danger of high rotation speed causing temperature affects, which reduce quality. If the mill is based on hammer technology but equipped with an effective internal cooling system, use is permitted. Mills made with natural or artificial stones, or steel rollers may be used. When buying a mill, stone mills should be preferred.

2.2 Age of the flour

The baker can decide whether to bake freshly milled flour, or flour that has been stored for some time.

2.3 Prolonging or interrupting the rising process by cooling or freezing

For reasons of working technique the prolonging or interrupting of the rising process in the production by cooling or freezing is allowed. It should be declared.

2.4 Freezing

Fruit can be frozen to give independence from the seasons. Microwave ovens may not be used for thawing. Baked bread and bakery products may not be frozen. Specialities such as biscuits and similar baking can be baked through and then deep-frozen. They are to be sold as frozen food.

2.5 Ovens

Baking in high frequency infra-red ovens is not permitted. When acquiring a new baking oven, gas fired is preferable to electrical or oil fired, from an environmental point of view.

2.6 Baking tins and trays

Baking tins and trays made of steel, stainless steel, or glass may be used. If coated tins or trays are used, before using the first time the recommendations for the pre-treatment of the coated surface must be followed carefully. Even small imperfections in the surface mean that such coated steels may no longer be used.

Single use baking forms made of aluminium are prohibited.

3. Labelling (additional information)

DEMETER Bread and bakery products, whether wrapped or loose, must be accompanied by a list which is available to all customers, retailers and distributors

IV

Standards for the certification of DEMETER grain, cereal products and pasta

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| 4. | Tofu production |

1. General

This guideline covers:

- Grains, milled grain, grain flakes, including buckwheat, quinoa, amaranth.
- Products made from the above e.g. breakfast cereal (muesli), baking mixtures, dry mixtures with a substantial grain percentage (Rissoles, patties, risotto), coffee substitutes from grain, “native” starch and pre-gelatinised starch, gluten malt
- Pastry products (including filled pastries)

2. Ingredients and additives

In principle all DEMETER raw products may be used as ingredients.

Allowable sweetening agents – see table 5.4, Part A

Salt – see table 5.4, Part A

2.1 Ingredients for pastry products

2.1.1 Ingredients for noodles:

- Grain or milled grain products such as flour, semolina

- Eggs
- Herbs and spices
- Vegetables

2.1.2 Ingredients for filled pastry products

- All of 2.1.1 above, and additionally:
- Milk and milk products
- Meat and meat products
- Vegetable and vegetable products
- Soya products (from DEMETER or certified organic soya only)

2.1.1 Micro-organism cultures, additives, flavours

- For ready to use baking mixtures, the following micro-organism cultures (not genetically modified), if available grown on certified organic substrates are allowed: sour dough, dried sour dough granules, yeast, yeast products.
- Baking improvers for ready to use baking mixtures is limited to the product group: small bakery items, baguette, rusks and toast, and is regulated in the standards for bread and bakery products.
- For ready to use mixes, tartaric acid baking powder as the raising agent.
- Flavours are to be extracts from certified organic production e.g. etheric oils.

Other additives are not permitted. The use of antibiotics to prevent the natural build up of acid in the production of starch is prohibited.

3. Processing

3.1. Processing methods

The processing of parboiled rice from DEMETER rice is permitted.

The following method is **NOT** permitted (negative list)

- Production of modified starch using chemicals or enzymes

Extrusion techniques, for the production of puffed cereals for example, is allowed only under the following restrictions:

- The product is made from DEMETER raw materials
- The labelling follows the provisions of Section 4.1.3 of the Standards for Labelling with Biodynamic and the Demeter Logo - DEMETER ingredient in the ingredients' list (without use of the logo)

3.2. Processing aids

- Nitrogen (N₂)
- Carbon dioxide (CO₂)

- Sodium hydroxide (NaOH) to adjust the pH value in the production of starch
- Isolated enzymes are not permitted

4 Tofu production

- 4.1 Tofu is processed from soya beans that originate solely from certified Biodynamic enterprises, without exception.
- 4.2 Nigari (Magnesium chloride) and Calcium sulphate are permitted coagulants (for setting the curd) for tofu and tofu products. Sodium bicarbonate is permitted as an aid/additive.
- 4.3 Starter cultures (not chemically preserved) are permitted for the manufacture of soya products.
- 4.4 Only hardwoods (as wood, shavings or sawdust) may be used for smoking soya products. Tropical hardwoods are excluded. 'Liquid' smoke is not permitted.
- 4.5 Extrusion technologies are not permitted in the manufacture of soya products.

V

Standards for the treatment and processing of DEMETER herbs and spices

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1. Harvest

At harvest, impeccable cleanliness is of paramount importance. This means the harvested products should be free from obvious disease, dead tissue, damage, decay, etc. In order to prevent microbial contamination, it is important to ensure that the herbs and spices do not come into contact with the soil during harvest. If cleaning is required, water of drinking quality, without any additives, is to be used. This cleaning water must be removed from the herbs and spices as completely as possible before further processing.

2. Ingredients, additives and processing aids

2.1. Ingredients and additives

In principle all DEMETER raw materials may be used as ingredients.

In addition the following is permitted:

- Salt (see table 5.4 Part A)
- Sweetening agents (see table 5.4 Part A)
- E 170 Calcium carbonate

2.2. Processing aids

- Carbon dioxide for sterilisation and cold grinding
- Nitrogen for sterilisation and cold grinding

3. Drying and other preserving methods

Drying should be as gentle as possible, maintaining the maximum quality and be carried out using the optimum conditions for each particular product. The drying temperatures are to be determined by the product. The process is to be controlled such that impeccable hygiene is maintained.

3.1. Drying

Direct drying by sunlight in the field or on the ground as a way of reducing the harvest time by wilting the swathe is permitted only for fruit and medicinal seeds (e.g. caraway, fennel, etc.) The actual drying is not to be done in the field for hygienic reasons.

A drying facility using indirect sun, or air drying, in a shady place protected from pests and other sources of contamination, is possible e.g. on drying racks. Artificial drying processes on conveyor belts or shelves, using vacuum, freeze drying, or condensation methods are permitted.

In principle direct drying using fossil fuels, or chemical water extraction are prohibited (Exceptions are detailed in 3.2: Other preserving methods). Reliance on solar energy and the use of energy saving processes is expressly advocated.

The products being dried may not be coated with extracts such as amino acids, fatty acids, sugars, or emulsifiers. Natural materials (e.g. oils) of DEMETER quality, or of certified organic quality meeting EEC regulations 834/2007 and 889/2008 or other valid organic laws are allowed to be used as surface treatment agents.

The use of high frequency drying is prohibited.

3.2. Other preserving methods

Pickling in plant oils or vinegar of DEMETER quality or of certified organic quality meeting EEC regulations 834/2007 and 889/2008 or other valid organic laws is permitted.

Drying with electrolytes is allowed, but the only permitted electrolyte is salt (see 2.1)

Deep freezing is permitted.

4. Further processing

4.1. Chopping and cutting

Chopping of herbs and spices is always accompanied by a loss of etheric oils. Whenever possible, therefore, the herbs and spices should be marketed either whole or coarsely chopped. The usual milling and slicing machinery and methods may be used for size reduction. If dust is produced in the process, then this must be extracted, with the air stream being cleaned before release into the environment.

Size reduction processes, which use nitrogen or carbon dioxide as cooling agents, are permitted. Closed cycle, nitrogen- cold milling processes are preferable for reasons of energy conservation.

4.2. Cleaning

Physical methods of cleaning the product are allowed e.g. Sieving, sorting, use of stone removal machines and magnets, filtering.

4.3. Mixing

The production of herb and spice mixtures is permitted. The only allowable free flowing agent that can be added is E170 Calcium carbonate.

5. Disinfection and sterilisation

The bacterial loading is determined by the harvesting and processing of the herbs and spices. Therefore attention should be paid to the optimisation of the methods employed.

Businesses which produce sensitive products should choose particularly those herbs and spices that have been harvested, processed and stored in the best possible fashion. In many cases this will already guarantee a sufficiently low microbial contamination.

Disinfection is only to be used when it is absolutely necessary. Allowable disinfection methods are the use of dry or moist heat. Disinfection using super-heated steam, in cases where this is technically possible, is preferable to other heat treatment methods. Generally, treatments using a high temperature for a short time are the most effective (e.g. 105-115 degrees C for 2-5 minutes). The use of ionising radiation and microwaves for disinfection are prohibited, as are all chemical methods.

For pest control, deep freezing after drying is permitted.

VI

Standards for the certification of DEMETER meat and meat products

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1. General

The slaughtering of animals requires particular attention. One should be conscious of the fact that the death of a living being with a soul precedes all meat processing. Ethical and moral viewpoints require that the animal in question be handled, during transport and slaughter, such that it doesn't

suffer fear and stress. Transport distances should be minimised by slaughtering animals locally. Animal slaughter will not be covered in detail in these standards. The endeavours of the individuals involved, who must act with insight, and the principles mentioned above, stand in their place.

The use of electrical goads is forbidden, as is the use of sedatives or other chemical or synthetic materials, before, during or after transport.

Waiting times at the slaughterhouse should be kept as short as possible. If waiting is required, sufficient covered space must be available.

The animals are to be given sufficient food and water during the waiting time.

The animals are to be quickly and effectively stunned. After stunning they must be allowed to bleed completely.

Throat cutting regulations that are to be found in some religions are allowed for that consumer group, providing the above mentioned standards are respected (with the exception of stunning).

2. Ingredients and additives

2.1 Ingredients

In principle all DEMETER quality raw materials may be used as ingredients.

2.1.1 Salt

See table 5.4 Part A

2.1.2 Sugar

See table 5.4 Part A

2.1.3 Herbs and spices

(Refer also to the DEMETER standards for the certification of herbs and spices, Section V)

Preparations and extracts of spices, extracts of meat and yeast and flavour enhancers are not permitted. The processor must obtain written statements to confirm that irradiation or methyl bromide have not been used in the disinfection of the herbs and spices.

2.2 Additives and processing aids

2.2.1 Lactic acid

Natural casings may be treated with lactic acid.

2.2.2 Citrates

Citrates are permitted in the production of scalded sausage if it is not possible to process the meat warm.

2.2.3 Starter cultures (cultures of micro-organisms)

Starter cultures are permitted for use in sausages to be eaten raw, but not however for the pickling solution. The use of mould cultures is permitted, though not from genetically modified micro-organisms. The producer or trader must provide written confirmation that this is the case.

2.2.4 Sausage casings

Artificial casings are permitted if they are declared on the labelling. If natural casings are used, the aim is to work toward using casings from DEMETER animals. The intestines are to be thoroughly cleaned with lactic acid or vinegar and cooking salt.

2.2.5 Immersion substances

Immersion substances are permitted

2.2.6 Smoke (see 3.11)

3. Processing methods

It is not permitted to produce DEMETER and/or certified organic goods together with conventional goods. The only exceptions are steam sterilisation, smoking and ageing in cool rooms. In such cases the processor must have a clear labelling policy to rule out mix-ups.

Only those processing methods may be used, which are expressly permitted.

3.1 Maturing of the meat

The use of tenderising materials, or of electrical treatments to tenderise the meat, is not permitted.

3.2 Cooling of the meat

Cooling down in steps and rapid cooling using cold air are both allowed. The carcasses may not be sprayed with brine solutions, or with food-grade acid.

3.3 Freezing of meat

Meat that cannot be processed directly for technical reasons, may be frozen. However it must be used at the first available opportunity. Bacon may be processed frozen, if this is necessary for technical reasons.

3.4 Blood

To prevent clotting, if the blood cannot be processed directly, it can be hit with metal rods. Citrates may not be used, and neither may dried blood plasma, blood plasma, or blood serum.

3.5 Jellied meats

Jellied meats (e.g. brawn) may be produced from natural aspic and boiled up rind. Aspic powder in organic quality is permitted.

3.6 Salt cured meat

The production of salt cured meat may not include the use of nitrite salts, E 252 saltpetre, E 300 ascorbic acid, E 575 (Glucono-delta-lactone : GdL) and food-grade acid. Dry curing and brine bath

curing are both permitted, with the brine bath containing all types of salt mentioned in 2.1.1, with or without spices.

3.7 Production of scalded sausages

Meat used in the production of scalded sausages should ideally be still warm from the slaughtering. If this isn't possible then permissible processes to give the same effect are warm shredding, warm salting, and methods using freezing. The use of milk protein and other cutting aids is prohibited. Citrates can be used for the production of scalded sausages if processing of the warm meat is not possible (In cases where the butcher cannot slaughter the animals himself, but rather has to process bought in sides of meat. He must inform the DEMETER organisation, in writing, of all the details). The use of citrates, as is legally required, must be declared in the ingredients list on the label.

3.8. Sausages for cooking in boiling water

No additives are allowed in the production of sausages for cooking in boiling water. The use of dried milk products is also prohibited.

3.9. Sausages to be eaten raw

Meat and bacon can be matured by pre-salting, or pre-drying. The maturing of the raw sausage can be done slowly, at temperatures of about 15 degrees C, or at mid- range temperatures of 18-20 degrees C. For reasons of hygiene, a maturing temperature of 20 degrees C should not be exceeded. Rapid maturing processes such as the use of E 575 (GdL) are not permitted. Smoking should be done using the cold smoke method. If wine is used, it must be declared on the label.

3.10 Pressed meat

The production of pressed meat using off-cuts of meat is not allowed.

3.11 Smoking of meat

The wood is burnt either directly in the smoking chamber or outside of it in a suitable facility. Cold and warm smoking processes (< 70°C) are permitted. The individual sausage types determine the exact method required.

Permitted smoking agents:

- Suitable native wood types (as wood, shavings or sawdust, preferably from beech, oak and plane trees.
- Pine cones
- Herbs
- Other types of plants such as juniper, heather, branches, conifer cones and spices

3.12 Preserving and types of preservative

Full preservation is allowed, but three quarter or half preservation are preferred methods. Even though high temperatures are permitted, the processing method should be chosen such that the smallest possible loss of quality occurs.

White metal cans may be used, but the use of glass is preferred. The cans may be welded, but no solder may be used. Full preservation is permitted in cans with lacquered internal and external surfaces. Containers made of plastic, aluminium, or plastic- aluminium laminates are not permitted. The format (surface area/ volume ratio) is to be chosen so that rapid heat transfer ensures that the required temperatures are quickly reached.

Cooking pots or cooking vats may be used for pasteurisation. If possible, sterilisation should be restricted to methods such as short duration-high temperature, multistage boiling and rotational sterilisation. Wherever possible a reverse pressure autoclave should be used. Sterilisation in a simple autoclave should remain the exception

VII

Standards for the certification of DEMETER milk and dairy products

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1. **Transportation of the milk**

The milk must be picked up by special milk trucks, which are used only for DEMETER milk, or have special tanks labelled for DEMETER milk. Transport is also possible in DEMETER labelled cans, or may be delivered directly from the farm to the dairy.

2. **Storage of the milk**

The storage of milk takes place in special tanks which are designated for DEMETER milk. Any confusion with bio or conventional milk must be avoided through the use of an appropriate labelling system.

3. **Ingredients and additives**

3.1 Ingredients

In principle all DEMETER raw materials may be used as ingredients.

3.1.1. Starter cultures, micro-organism cultures

3.1.1.1 Cultures using milk as a growing medium

Starter cultures (also direct starters) may be used. They are to be bred in the usual manner at the processing facility, and preferably used in production only from the third generation onward. The raising and multiplication must take place in DEMETER milk. Micro-organism cultures such as *Brevibacterium Linens* may be used. The use of genetically modified micro-organisms is not allowed. The manufacturer of DEMETER milk products must find out the production details of the starter cultures from the supplier of these cultures, in writing.

3.1.1.2 Starter cultures not grown on milk.

The use of cultures that have not been grown on milk (e.g. moulds) may be used for specific recipes.

3.1.2 Rennet

Rennet of calves, microbial rennet, rennet-pepsin mixtures (calf rennet) and plant extracts (Artichokes, Ladies' bedstraw – *Gallium verum*) may be used to curdle milk. The rennet should contain no preservatives.

Fruit vinegar and starter cultures are allowed for the souring of milk proteins.

3.1.3 Salt

See table 5.4, Part A

3.1.4 Sweetening agents
See table 5.4, Part A

3.1.5 Oil
Oil may be used to treat the surfaces of cheese.

3.1.6 Herbs and spices
Any herbs used must meet the requirements of the “Standards for the Processing of DEMETER Herbs and Spices”.

3.1.7 Fruit preparations
Any fruit preparations used must have met the production requirements of the “Standards for the Certification of Processed DEMETER fruit and vegetables”.

3.2 Additives

3.2.1 Calcium carbonate (CaCO_3) and Calcium chloride (CaCl_2)
Calcium carbonate (E 170) is allowed solely for the production of sour milk cheese. Sodium bicarbonate may not be used.
Calcium chloride (E 509) may be used as processing-aid in the cheese production.

3.2.2 Coatings
The following coatings can be used for hard cheeses, sliceable cheeses and for semi-hard cheeses:

- Beeswax
- Natural hard paraffin wax
- Microcrystalline waxes

These three substances can be mixed with each other. Natural hard paraffin wax and microcrystalline wax may contain no other additives such as polyethylene, short chain polyolefine, polyisobutylene, butyl or cyclic rubber. In addition the waxes may not be coloured. Plastic film is provisionally permitted for covering the outer layer of sliceable cheese, and semi-hard cheese, as long as it is free from potassium sorbate, calcium sorbate and natamycin. (This is permitted only until a suitable replacement material or method is found).

3.2.3 Smoking of cheese

The wood is burnt either directly in the smoking chamber or outside of it in a suitable facility. Cold and warm smoking processes (< 70°C) are permitted. The individual cheese types determine the exact method required.

Permitted smoking agents:

- Suitable native wood types (as wood, shavings or sawdust, preferably from beech, oak and plane trees.
- Pine cones
- Herbs
- Other types of plants such as juniper, heather, branches, conifer cones and spices

4. Processing methods

In order to maintain the inner quality of the milk right through to consumption, it should be processed whole as far as possible and also fresh from the cow.

The use of aluminium vats is not allowed for either storage or processing.

4.1 Milk (for drinking)

The legally permitted pasteurisation methods, to a maximum temperature of 80 degrees C, may be used to pasteurise milk. After treatment the milk must have a positive peroxidase index. The same applies in principle to all processed milk products. Other heat processes such as sterilisation UHT(Ultra high temperature) or ESL(extended shelf life) treatments are not permitted, and the milk may not be homogenised.

The following norms have to be met:

- To be allowed to label milk with the Demeter brand the milk has to have a maximum homogenisation degree of 30% (measured with an homogenisation pipette, according to the NIZO method).
- In order to refer to milk as “non-homogenised”, full fat milk has to have a maximum homogenisation degree of 10%.

The following types of milk can be made commercially available:

- Gold-top milk
- Whole milk with natural fat content
- Standardised whole milk (at least 3.5% fat)
- Low fat and skim milk

Enriching milk with milk proteins and vitamins etc is not allowed.

4.2 Butter

The following butter types can be produced:

- Full cream butter
- Sour cream butter

Brought in cream may be processed. For ease of spreading, physical methods for cream ripening may be used, such as cold-warm-cold or warm-cold-cold processing.

Salting with table salt is permitted if indicated on the label. Colouring with beta-carotene is not permitted. Indirectly acidified butter, made according to the NIZO method is not permitted. The other common methods of butter manufacture are allowed. Butter may be cold stored for up to half a year. Cold stored butter may not be mixed with fresh butter.

4.3 Fresh cheese and curd cheese (Quark)

Fresh and curd cheese may be produced with the addition solely of starter cultures and rennet. The utilisation of whey proteins using methods such as thermo-curd methods and ultrafine filtration are permitted. The use of centrifugal whey separation methods is not allowed. The adjustment of fat content using the addition of high or low fat curd cheese, or of cream, is permitted. The other common methods of fresh cheese manufacture are allowed.

4.4 Sour milk cheese

Sour milk cheese may only be manufactured from sour milk curd cheese. The use of calcium carbonate is permitted. The addition of cooking salt to the cheese must not exceed 2.5%. The use of beta-carotene and lactoflavin is prohibited.

4.5 Sour milk products, yoghurt production, kefir production, buttermilk production

A heat treatment of 85-95 degrees C, not exceeding 5-10 minutes in duration, is permitted for treating the milk products. It is desirable to work, as far as possible, at the lower limits. UHT treatment is not allowed. Homogenisation by means of an homogeniser is prohibited. Partial homogenisation by means of a centrifuge is allowed in the production of yoghurt.

The following options are available for increasing the dry matter

- Addition of powdered milk
- Evaporating under vacuum
- Evaporating in a downdraft, multi-stage evaporator.

The finished products may not be heat-treated.

Only pure buttermilk may be produced for sale. The other common methods of sour milk production are allowed.

4.6 Sweet milk products

The same processing standards are applied as for sour milk products. As thickening agents starch and agar agar may be used.

4.7 Cream

Cream may not be enriched with milk protein products to increase the milk solids. After pasteurisation the cream must have a positive peroxidase index. Homogenisation and the use of thickening agents (e.g. Carrageen) are not permitted.

4.8. Whey

Both sweet and sour whey can be produced.

4.9. Milk powder production

The production of dried milk products from DEMETER milk and milk products is permitted (e.g. Whole milk powder, skim milk powder, buttermilk powder, whey powder.) The process of reduction and drying should be gentle, using optimal temperatures and pressures.

Milk powder from horses and goats may be marketed as Demeter products. Milk powder from cow's milk, is permitted only as an ingredient in processed products. .

4.10. Cheese

The milk is to be purified by separation or appropriate filtration methods. To prevent bacterial contamination, the approved pasteurisation methods may be used (see section 4.1) or the milk subjected to thermal treatment. Bacteria may also be removed by bactofuging, but the material that has been separated out may no longer be used.

The milk may be curdled with acid starters, rennet or a combination of the two. It may not however be curdled with pure acid. To renew the salt brine, the cheese is to be removed and the precipitate cleared away. The salt brine can be re-boiled and enriched with salt accordingly. Sterilisation with sodium hypochlorite, hydrogen peroxide etc. is not permitted.

Only pure herbs and spices, or extracts made from pure herbs and spices, may be added to the cheese.

The use of lactoflavin or beta carotin colourings is prohibited. Surface treatment of the cheese with potassium sorbate, calcium sorbate, or natamycin is not permitted.

The individual cheese types will be manufactured according to the method typical for each respective type. Cheese may be matured in foil, as long as the foil type used is free from substances which could reduce the quality of the DEMETER-product. Plastic film is permitted for the covering of the outer layers of sliceable cheese and semi-hard cheese, provided that it is free of the above mentioned substances. This approval will apply until such time as an appropriate replacement material or method is found.

4.11. Ice-cream

Details for ice cream (also sorbets and frozen yoghurt) production are contained in Section IX §5

VIII

Standards for the certification of DEMETER Infant Milk Formula

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2. Scope
3. Ingredients
4. Aids and Additives
5. Processing
6. Labelling
7. Product development

1. Preamble

Breastfeeding means more than just giving the best and healthiest food to the infant. It is also food for the soul and maintains in a unique way the intimate relationship between mother and child that began during pregnancy.

Demeter-dairy food for infants is not intended as a substitute for breast milk. It should rather support and supplement in cases where full or partial breastfeeding is not possible for a variety of reasons.

Particularly during this crucial stage, it is essential for Mother and child to receive a diet based on certified Biodynamic raw materials.

The processing and the composition of infant milk formula is subjected to strict legal regulations such as requirements determining hygiene, ingredients and content of macro and micronutrients.

2. Scope

The scope of the standards for Demeter infant milk formula encompasses category 1 (infant formula) and category 2/3 (follow-on formula) that is produced based on cows' milk. Only products aimed at infants up to the age of 12 months are allowed to be marketed under the Demeter trademark/logo, or as Biodynamic, or implied to be such.

Products based on soybeans or soybean milk are excluded.

3. Ingredients

The following ingredients are permitted; they must be in Demeter quality unless specified otherwise:

- milk and milk components
- Whey powder (must be at least certified organic quality until Demeter whey powder becomes available)
- milk fat and vegetable oils

4. Aids and additives

(All aids and additives used must be listed in Section 5.3 and 5.4)

- lactose
- starch
- malto-dextrin
- Added minerals and vitamins will only be allowed if the legally prescribed content cannot be achieved with Demeter ingredients alone.

Isolated Vitamins B2 and B12 are not allowed to be added to Demeter infant milk formula based on cow's milk and nucleotides, amino acids, hydrolysed proteins and taurine are specifically excluded.

5. Processing

All processing stages will be optimised on the basis of the best realisable food quality.

The spray drying process is permitted as is homogenisation of the total mass being processed.

6. Labelling

The labelling shall meet the Demeter Labelling standards, including the table in section 4.4.2

7. Product Development

New products are to be developed in conjunction with an advisory body that is appointed by the board of Demeter International. This body will make a recommendation to the respective certifier.

IX

Standards for the certification of DEMETER cooking oils and fats

For labelling (i.e. cold pressed, native) please consult the national food regulations.

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 - 2.2.3 Labelling
- 2.3 Permitted processing methods for animal products
- 2.4 Processing of margarine
 - 2.4.1 Permitted processing methods

1. Ingredients and processing aids

- 1.1 Ingredients

In principle all DEMETER quality raw materials may be used.

1.2 Processing aids

- Asbestos free filter material such as paper or cloth (see 5.4 Part A)
- Diatomaceous earth

- Nitrogen (N₂)
- Citric acid only for removal mucilage (oil for processing purposes)
- Bentonite (Fullers earth) (oil for processing purposes)
- Activated carbon (oil for processing purposes)

1.3 Additives

The use of additives is not permitted.

2. Processing

2.1 Processing methods

2.1.1 Permitted processing methods for cold-pressed oils

- All the usual methods for cleaning, peeling and preparation of the raw materials.
- Mechanical pressing with a maximum extraction temperature of 60 degrees C (the point of measurement has to be close to the outlet of the pressed oil as possible and is decided by the certification body).
- The maximum extraction temperatures for the individual oils are listed below. Lower extraction temperatures are recommended:

| | |
|--|---|
| Olive oil: | process temperature may never exceed 27 degrees C |
| Saffron and pumpkin seed oil: | 50 degrees C |
| Sunflower oil: | 60 degrees C |
| Maize, soy, sesame, and hazelnut oils: | 60 degrees C |
- Filtration, decanting and centrifuging
- Roasting the seeds before pressing in the processing of pumpkin seed oil, sesame oil and nut oils is permitted. These products have to be additionally labelled as “cold pressed oil from roasted seed.

2.1.2 Prohibited processing methods

- Conditioning/pre-warming of the raw material
- Extraction using organic chemistry solvents
- Mucilage removal using mineral or organic acids
- Treatment with active charcoal
- Removal of acid
- Removal of colour/bleaching
- Chemical modification (Hydrogenation, ester modification)

2.2 Processing of other oils and fats (for baking, frying and further processing)

2.2.1 Permitted processing methods

- Usual mechanical processes for cleaning and preparing the raw materials (including conditioning and drying with heat)
- Mechanical pressing
- Centrifuging, Decanting
- Filtering (see 5.4 Part A)
- Removal of mucilage
- Neutralising/ Buffering of pH (only once either before or after fractionation)
- Washing
- Vacuum drying
- Bleaching/colour removal
- Thermal fractionation (decrySTALLISATION/ dry fractionation)
- Steaming/ Deodorising:

Oils and fats for use in processing at high temperatures (**over 100 degrees C**) and for use in frying or baking (e.g. bakery fats) can be steamed/ deodorised without temperature limit (once only).

All other oils and fats for processing at low temperatures (**under 100° degrees C**) can be gently steamed/ deodorised with a maximum temperature of 130°C (once only: e.g. oils for the production of mayonnaise).

2.2.2 Prohibited processing methods

- Extraction with organic solvents
- Chemical Modification (Hydrogenation, Ester modification)

For palm oil which will be sold as raw palm oil:

- Mucilage removal using acids
- Removal of acid

2.2.3 Labelling

Deodorising (steaming) is to be declared on all packing units for consumers and processors.

2.3 Permitted processing methods for animal products

- Rendering

2.4 Processing of margarine

The lecithin used has to be certified organic. All the restrictions of 2.2 Processing of other oils and fat (see above) have to be met. The use of hardened (hydrogenated) fat and flavours is not permitted.

2.4.1 Permitted processing methods

- Emulsification
- Pasteurisation
- Crystallization

X

Standards for the production of DEMETER sugar, sweetening agents, confectionary, ice-cream and chocolate

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| | |
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| 1. | Scope |
| | Plant syrups (e.g. from maple, sugar beet, palm, coconut etc.) |
| | Plant juice concentrates and plant extracts |
| | Sweetening agents from grains/starch |
| | Malt extract |
| | Whole sugar (dried and milled sugar juice) |
| | Raw cane sugar |
| | Ice-cream, sorbets and frozen yoghurt |
| | Chocolate and other confectionary |

2 Ingredients

All DEMETER quality raw products may be used as ingredients.

3 Sugar

3.1 Processing aids. Permitted materials are:

Lime water (to remove unwanted materials)

Carbonic acid (to precipitate out excess calcium as calcium carbonate)

Oil to prevent foaming

Tannic acid - from natural sources

Organic ester sucrose

Citric acid (for clarification)

Sodium carbonate, calcium and sodium hydroxide

Sulphuric acid (for pH control)

3.2 Processing methods

Sugar syrup is evaporated under pressure at temperatures not high enough to cause caramelisation

4 Sweetening agents

4.1 Processing aids.

Permitted materials are:

Filter-materials made from textiles, paper, cellulose, diatomaceous earth, perlite, bentonite (see 5.4 Part A)

Enzymes (not genetically manipulated) for the processing of grain/starch sugar products

For grain/starch invert sugar: Xylose (glucose), isomerase

Lime water (to remove unwanted materials)

Carbonic acid (to precipitate out excess calcium as calcium carbonate)

Oil to prevent foaming

Tannic acid - from natural sources

Organic ester sucrose

4.2 Processing methods

Plant juice concentrates (see part B, I)

Grain / starch sugar products (malting) - all common processes using the processing aids as mentioned in 4.1. are permitted.

5 Ice-cream, sorbets and frozen yoghurt

5.1 Ingredients and processing aids:

All DEMETER products including aroma-extracts, herbs and spices may be used in the production of ice-cream.

Allowable thickening agents are carob bean gum, pectin, guar gum, agar agar.

Starch sugars and starches are permitted

Inulin and other oligosaccharides of organic origin are permitted

Colourings are not permitted.

5.2 Processing methods

No specific restrictions

6 Chocolate and other confectionary

6.1 Ingredients and processing aids

Lecithin, organic quality

Gum Arabic

Herbs and spices

6.2 Processing methods

No specific restrictions

7. Labelling

Labelling shall meet the requirements of the Demeter International standards for labelling with Biodynamic and the Demeter trademark logo.

XI

Standards for the certification of DEMETER cosmetics and personal care products

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7 Definitions

1. Principles

The aim is to produce cosmetics that consist of natural products, which are beneficial for the human skin and body, and have as few negative environmental consequences as possible. The raw materials of plant or animal origin are to be DEMETER/BIODYNAMIC certified as far as possible. The task in the production of cosmetics is to maintain, or, wherever possible to enhance through the use of appropriate measures, the special qualities of the raw materials which have arisen through their having been grown according to Biodynamic principles.

The aim is to use processes that respect inherent material qualities, and enhance them. For this reason, ingredients that have been through a rhythmical mixing process, (e.g. light/dark, hot/cold, sunrise/sunset) are preferred. Direct environmental influences during their manufacture, such as the presence of electromagnetic contamination should be considered and the negative effects kept to a minimum. Ingredients of agricultural origin must be processed in such a way as to minimize the loss of quality, including those life qualities arising from their Biodynamic method of production.

Environmental effects of any production must be considered. This covers such areas as wastewater streams including waste hot water, reduction of contaminating waste back to the environment, energy usage, appropriate packaging choices and biodegradability of the product itself. Packaging materials are defined in Part A, section 6 of these Processing Standards.

The products must have no ingredients that are genetically modified, or that have been produced using genetic modification techniques. Ionising radiation is also excluded from all production steps and no materials

with particle sizes of less than 100 nanometres may be used (nanotechnology is excluded). Mineral oil is also excluded as a starting material.

In principle, processes, ingredients, additives and aids that are permitted in DEMETER/BIODYNAMIC food production may be used in cosmetics and personal care products. However, this section of the DEMETER/BIODYNAMIC standards has priority for cosmetic and personal care products.

Water plays a central role in many cosmetic products, in many cases being the largest ingredient. For that reason it should be of the highest quality. Water enhancement through rhythmic treatment can be beneficial.

Independent of the formulation of a DEMETER/BIODYNAMIC cosmetic product, all products must comply first and foremost with the basic requirements of Directive 76/768/EEC (Cosmetics Directive of the European Union) and regulation (EC 1223/2009) or equivalent national regulation, particularly with regard to their composition, safety, efficacy and labelling.

The DEMETER/BIODYNAMIC personal care standard foresees three labelling categories. Requirements of the DEMETER/BIODYNAMIC ingredient categories to allow prominent labelling using the DEMETER and BIODYNAMIC trademarks, which are additional to the Demeter International labelling standards, are listed below. Products that contain DEMETER/BIODYNAMIC ingredients and meet organic standards approved by Demeter International can also use an additional labelling category that does not permit prominent use of the trademarks. This category is applicable to products that do not contain significant amounts of agricultural ingredients, and hence do not meet the minimum DEMETER label requirements of 66%, or fall outside the scope.

1.1 Non-permitted ingredients, additives and aids

The following materials are not permitted either as solvents, or for any other purpose as an ingredient, additive or processing aid:

Mineral oils & petroleum derived products

Benzene

Hexane

Propylene glycol

Butylene glycol

EDTA chelating agents and their salts

Raw materials obtained from dead animals (e.g. animal fats, animal collagen) or living cells.

2. Scope

These standards are to define the production of the following products to be labelled as DEMETER/BIODYNAMIC

Personal Care - Skin and body care products including skin and sun creams and toothpaste.

Etheric (Essential) oils

Extracts, extraits, and tinctures

Waters & Hydrolates (Hydrosols)

Soaps, including liquid soaps e.g. shampoos and shower gels

Cleaners

Decorative cosmetics

3. Labelling

In addition to the requirements of the Labelling standards of Demeter International the following cosmetic-specific regulations must be met.

3.1 General Requirements

- 3.1.1** All ingredients must be individually listed in the ingredients list. The INCI (International Nomenclature Cosmetic Ingredient) system is legally required to be used. Parallel to it, the name of each ingredient should be listed in an appropriate language.
- 3.1.2.** Mixtures of essential oils may carry one collective name. This collective name can only be labelled DEMETER/BIODYNAMIC if all the oils used in the mixture originate from Biodynamic agriculture and meet these standards. If not all qualifying oils are of DEMETER/BIODYNAMIC quality, they are to be individually named and labelled.
- 3.1.3.** Certified organic already processed ingredients shall be made from certified ingredients, processed according to this standard
- 3.1.4.** Calculating the percentage of DEMETER/BIODYNAMIC and organic ingredient
The percentage of all DEMETER/BIODYNAMIC and organic ingredients in any DEMETER/BIODYNAMIC labelled retail product or wholesale ingredient is calculated by weight or fluid volume. Salt, water and mined minerals are excluded though the quality of each will be considered as it relates to their potential for contaminating the product with prohibited materials.

Calculation by weight:

The total net weight of combined DEMETER/BIODYNAMIC and organic ingredients at time of formulation (excluding salt, minerals and water) divided by the total weight of all combined ingredients (excluding salt, minerals and water)

Calculation by volume:

Fluid volume of all DEMETER/BIODYNAMIC and organic ingredients (excluding water, salt and minerals) divided by the volume of the finished product (excluding water, salt and minerals)

Calculation if both solid and liquid ingredients are used:

To be based on weight (i.e. combined weight of both solid and liquid DEMETER/BIODYNAMIC and organic ingredients (excluding water, salt and minerals) divided by combined weight of all ingredients (excluding water, salt and minerals)

All products intended to be ingredients in formulations to be retail labelled using the DEMETER/BIODYNAMIC certification marks must disclose the exact percentage of both “organic” and DEMETER/BIODYNAMIC content in the product.

3.1.5 Calculation of water

Natural substances which contain water are taken into account with the following percentages (by weight):

- Vegetable juices with no added water; 100 %
- Concentrated vegetables juices: the concentrate itself counts as the ingredient. Any water used for dilution is not included in the calculation.
- Aqueous extracts: only the plant portion of the extract is counted.
- Hydro-alcoholic extracts: the plant and alcohol portions are counted.

3.1.6 Minerals and Salt as ingredients

Certificate of analysis and related documentation needs to be submitted for any salt or minerals used as ingredient in order to document that ingredients used do not contain any prohibited contaminants such as heavy metals or added ingredients such as free-flowing agents.

3.1.7 Wild harvested ingredients

Raw materials collected from the wild must be certified to EEC regulations 834/2007 and 889/2008 or other valid organic laws and are considered to be equivalent to organic products. An application fully documenting the procedure for minor collections whose frequency is less than annual, whose amounts do not endanger the plant population, and which make up less than 2% of the final formulation may be approved as an exemption by the respective organisation.

3.2 DEMETER/ BIODYNAMIC Product Labelling Categories (See Demeter International labelling standards 4.5.3)**3.2.1 Normal labelling of Demeter products (at least 90% Demeter ingredients)**

DEMETER/BIODYNAMIC product (e.g. Demeter/Biodynamic Skin Cream):

- These standards are met
- At least **90%** of all ingredients of agricultural origin are of DEMETER/BIODYNAMIC quality.
- The remaining ingredients of agricultural origin may be certified organic if documented as being unavailable in DEMETER/BIODYNAMIC quality, and

- Any remaining ingredients of non-agricultural origin must be listed in section six.

The Demeter logo may be used on the primary display panel, conforming to the requirements detailed in the Demeter International Labelling standards.

3.2.2 Exemption to label products with at least 66% of the ingredients in Demeter quality

Demeter products for which less than 90% of the ingredients are available with Demeter certification, may use a maximum of 33% of ingredients from “in conversion to Demeter” or with an organic certification, or additives and aids of non-agricultural origin under the following conditions:

- An exemption has been approved by the respective organisation
- The remaining ingredients of agricultural origin may be certified organic if documented as being unavailable in DEMETER/BIODYNAMIC quality
- Any remaining product ingredients of non-agricultural origin must be listed in section six
- A foot note must be placed on the information panel
 - *‘Ingredient’ In conversion to **demeter/biodynamic**, or
 - *‘Ingredient’ certified organic production, or
 - ‘This product contains between 66% and 90% **demeter/biodynamic** ingredients’

The Demeter logo may be used on the primary display panel conforming to the requirements detailed in the Demeter International Labelling standards

3.2.3 Labelling of products containing less than 66% DEMETER/BIODYNAMIC ingredients

Use of the words DEMETER/BIODYNAMIC is permitted with reference to the raw materials and to give brief information about Biodynamic agriculture **only** when marketing and labelling does not mislead the consumer into thinking the product as a whole is of Demeter/Biodynamic quality or has been produced conforming to Section X of the Demeter International processing standards as a whole.

Demeter or Biodynamic may be used only on the back and/or side panel labelling when:

- The product meets an “organic” or “natural” standard approved* by Demeter International and be labelled as such, or
- The product meets this standard with the exception of one or more ingredients of non-agricultural origin permitted in a “natural” standard mentioned above, and
- Font style and size for use of Demeter or Biodynamic is similar to the text used on the information panel (no use of the Demeter logo)
- The certified Biodynamic ingredients in the product are indicated:
 - either on the packaging
 - or on the insert with the product and in the internet via a link from the product

Reference to Demeter/Biodynamic agriculture and raw materials in relation to product(s) which contain less than 66% of Demeter/Biodynamic ingredients in the total formulation may only be made as specified above. Internet and other non-point-of-sale information specific to product(s) must also be clear that the product(s) referenced are not Demeter/Biodynamic.

* Approval requires the standard in question to have:

- Minimum organic ingredient content of 50% of the agricultural ingredients
- No ingredients in parallel (Demeter with organic/conventional)
- No GMO
- No nanoparticles
- No testing on animals
- The following materials are not permitted either as solvents, or for any other purpose as an ingredient, additive or processing aid:

Mineral oils & petroleum derived products

Benzene

Propylene glycol

Butylene glycol

EDTA chelating agents and their salts

Raw materials obtained from dead animals (e.g. animal fats, animal collagen or other cell materials).

The licensee shall apply for approval by supplying proof that the above requirements are met by the standard in question, and they are certified to that standard. .

The DEMETER/BIODYNAMIC trademark logos cannot be used anywhere on the product label.

4. Processing methods

4. 1. Degree of processing of the raw material

In principle all traditional mechanical and biological methods are allowed, including but not limited to steam distillation, extraction, grinding, drying, mixing, freezing, chopping, sieving, washing, heating cooling, fermentation.

4.2. Processes

4.2.1 Skin care products (Face and body)

These products may require functional additives, like emulsifiers. These are derived from natural starting materials such as oils, saccharides, proteins, lipoproteins, organic acids and may be modified by saponification, hydrolysis, esterification and trans-esterification, distillation, fermentation, neutralisation, condensation with the elimination of water, hydration, sulphation. The resulting products must be listed in 6.8. Steam stripping of oils to product fatty acids e.g. glycerine is permitted.

4.2.2 Extracts, extraits and tinctures

Extracts from DEMETER/BIODYNAMIC plants and animals may be labelled as DEMETER/BIODYNAMIC if:

4.2.2.1 The raw materials have been prepared using only mechanical, thermal, or fermentation methods.

4.2.2.2 The extracts have been produced with no other extracting agents than water, oil, ethyl alcohol, CO₂, glycerine, fruit vinegar, or mixtures of the mentioned substances.

4.2.2.3 Agriculturally based ingredients, including oil, ethyl alcohol, and fruit vinegar must be DEMETER/BIODYNAMIC and only if unavailable, from an approved organic source. The percentages in the final product will define the labelling requirements.

4.2.3 Essential oils and hydrolates (Hydrosols)

Essential oils are produced using steam distillation, CO₂ extraction, cold pressing, scarification, rectification (i.e. to take sensitising ingredients out as a vacuum re-distillation only e.g. mint oil), fractional distillation (e.g. ylang, ylang).

Hydrolates are counted as water in the final calculation, with the fragrance contained in them due to steam distillation being declared with the other essential oils.

Ingredients of certified organic origin, which have been extracted using methods that do not meet these standards, may not be used in products labelled with the DEMETER/BIODYNAMIC trademark (see 3.2.1 and 3.2.2). Extraction agents are listed in 5.3 and 6.7 below.

Hydrolates are produced using steam distillation only.

Effleurage extraction must use Demeter or certified organic waxes or fats.

4.2.4 Soap

The following requirements apply to soap that is to be labelled as DEMETER/BIODYNAMIC soap:

- The raw soap may be produced only from neutral plant fats of DEMETER/BIODYNAMIC quality, without any other ingredients.
- Only sodium hydroxide or potassium hydroxide, that has had no previous usage, may be used for saponification and must not exceed 10% of the formulation.
- Liquid soaps are sodium and potassium based liquid soaps, shampoos and shower gels. Permitted surfactants are listed in 6.8

4.2.5. Preservation processes

Preservation can be achieved using processes such as drying, freezing, storage in inert atmospheres, or pasteurisation at less than 80 degrees Celsius. Preservation aids and additives from the list in 6.8 may be used if necessary.

4.2.6 Environmental Impact of Processing

4.2.6.1 Organic waste that does not pose an environmental contamination risk must be composted or handled in an environmentally friendly manner.

4.2.6.2 Processing that involves hot water (such as distillation) must allow the water to cool before returning it to a natural ecosystem such as the soil or waterways.

4.2.6.3 Hydrosols/waters containing additives such as preservatives must not be disposed of into natural ecosystems such as the soil or waterways.

4.2.6.4 Packaging materials must meet the requirements of the Demeter International processing standards.

4.2.7 Non-permitted processes

This standard explicitly lists all permitted processes. All others are prohibited. This includes the testing of any new DEMETER/BIODYNAMIC product during its development on animals.

5. Ingredients of agricultural origin

5.1 Plant and animal waxes:

Uncoloured and unbleached plant or animal waxes are permitted. When using lanolin (wool wax) the treatment of sheep with insecticides (dipping), the method of lanolin extraction, and the conditioning of the lanolin using solvents must be known. A written declaration is to be obtained from the supplier concerning these details. Each lot must be tested for the materials used and a residues analysis

certificate supplied. The lanolin with the lowest pesticide contamination available must be used.

5.2. Alcohol

Ethyl alcohol (C₂H₅OH) must be of plant origin in DEMETER/BIODYNAMIC (or certified organic quality if Demeter proven to be unavailable – exemption from respective organisation required).

Synthetically denatured alcohol is not permitted.

5.3 Solvents for extraction from raw materials:

All solvents must be in Demeter quality. The respective organisation can give an exemption to use organic solvents if proof has been supplied in writing that DEMETER/BIODYNAMIC materials are unavailable.

Ethyl alcohol

Fats and oils of plant origin

Glycerine derived from fats or oils of plant origin

Honey

Sugar

Vinegar

5.4 Agricultural ingredients of conventional origin

If an agricultural origin ingredient is unavailable in Biodynamic or organic quality, that ingredient may be used in conventional quality under the following conditions:

- Proof of unavailability is required in writing from three suppliers
- Multi-residue screen testing is required with limits meeting the BNN orientation values
- The amount must not exceed 5% of the total formulation

6. Additives and aids of non- agricultural origin

In principle the following ingredients of non-agricultural origin, providing they are documented as containing low levels of heavy metal contamination or other harmful residues, are permitted:

- Potable water
- Ingredients of mineral origin: salts (sodium, potassium, calcium and magnesium chlorides and sulphates), clays (including bentonite and diatomaceous earth), stone, precious stones, including silicic acid.
- Ingredients of metallic origin: precious metals, metals
 - Pigments, made of mica and agglomerated metal oxides meeting all other restrictions of the standard

- Preservatives, antioxidants, surfactants/emulsifiers, alcohol, solvents that are listed and meet the restrictions below. If listed for a particular function, a permitted ingredient may also be used for other functions.
- All additives and aids that are listed in the Demeter International processing standards as permitted for use in Demeter food products.

6.1 Water

Pure best quality potable water. Spring water (including mineral water), distilled water or dynamised water is preferred. Water treatment must ensure high water quality. Water may be filtered or softened or UV treated.

6.2 Preservatives:

Botanical preservative systems shall be used in preference.

Permitted anti-fungal, bacterial and microbial agents are included in 6.8 below

6.3 Enzymes:

Naturally occurring enzymes (e.g. fruit enzymes) are permitted, documented GMO free and free from other prohibited ingredients. Certified organic enzymes used in DEMETER/BIODYNAMIC products must also conform to this requirement.

6.4 Minerals:

Natural minerals not chemically modified may be used. They may be prepared by cleaning mechanically, with water and or heat/steam and dried.

6.5 Antioxidants

Natural antioxidants are preferred (e.g. based on sage or rosemary). Permitted antioxidants are included in 6.8 below

6.6 Solvents for extraction from raw materials:

Additional solvents not of agricultural origin which are permitted are:

CO₂

Water

6.7 Fragrances:

Synthetic fragrances are not permitted.

Fragrances must be pure essential oils only, in DEMETER/BIODYNAMIC or certified organic quality, containing no colours or any other additives.

6.8 Allowable Materials:

Oils used in the production of emulsifiers (e.g. olive oil, palm oil must be DEMETER/BIODYNAMIC, or organic if available.

The following materials are permitted:

Allantoin extract (comfrey)
 Ascorbic Acid
 Ascorbic Palmitate
 Benzyl Alcohol
 Benzoic Acid and its salts
 Cellulose gum (for Peeling/toothpaste/gels to increase firmness)
 Cetearyl Alcohol
 Cetearyl Glucoside (rinse off products only)
 Cetyl Alcohol
 Cetyl Glucoside (rinse off products only)
 Cetyl Palmitate
 Cetyl Olivatate
 Citric acid
 Coco Glucoside (rinse off products only)
 Coconut Alcohol
 DecylOleate
 Dehydroxanthan Gum
 Disodium Cocoyl Glutamate
 Ethyl Alcohol
 Etyl Alcohol
 Glyceryl Caprylate
 Glyceryl Distearate
 Glyceryl Lactate
 Glyceryl Laurate
 Glyceryl Linoleate
 Glyceryl Oleate
 Glyceryl Oleate Citrate
 Glyceryl Stearate, Glyceryl Stearate SE
 Glyceryl Stearate Citrate
 Glyceryl Citrate
 Glyceryl Cocoate
 Hydrolyzed Wheat Protein
 Hydrolyzed Wheat Gluten
 Iron oxide (for Sunscreen)
 Jojoba Esters
 Lactic Acid (From fermentation of a GMO free carbohydrate substrate only)
 Lanolin Alcohol

Lauryl Alcohol
 Lauryl Glucoside (rinse off products only)
 Lecithin
 Lanolin
 Polyglyceryl - 3 – Polyricinoleate
 Potassium Cocoate
 Potassium Olivat
 Potassium Palmitate
 Potassium Stearate
 Potassium Sulphate
 Salicylic acid (for Peeling and Bleamish control (Hygiene))
 Sodium Cetearyl Sulphate
 Sodium Cocoate
 Sodium Cocoyl Glutamate
 Sodium Cocoyl Hydrolysed Wheat Protein
 Sodium Gluconate
 Sodium Lauroyl Lactylate
 Sodium Olivat
 Sodium Palm Kernelate
 Sodium Palmate
 Sodium Stearyl Lactylat
 Sorbic Acids and their salts
 Stearic Acid
 Stearyl Alcohol
 Sucrose Stearate
 Tocopherol (Vitamin E)
 Triethyl citrate (for Deodorants)
 Vitamins
 Xanthan gum (E415)
 Xylitol (for Toothpaste) If extracted from maize, GMO free declaration required.
 Zinc oxide (for Sunscreen)

7. Definitions

Agricultural ingredient: A product, either raw or processed, derived from agriculture, aquaculture or wild harvest.

Antioxidant: A substance that hinders oxidation

Available: Obtainable in an appropriate form, quality and quantity

Certified organic: Certified organic raw agricultural ingredients shall be defined by the NOP, the EEC, or equivalent regulations.

Dilution: Reduction of ingredient concentration by adding water

Emulsifier: Surface active ingredient which promotes the mixing of, typically, oils and water

Essential oils: Non-aqueous oil obtained from plant material.

Esterification: Process that is the reaction of an alcohol and an acid

Extracts: Soluble material that is dissolved from plant material using a solvent such as alcohol or water

Extraits: Process by which essence is extracted via maceration and further distillation processes.

Fermentation: Enzymatic process carried out by micro-organisms

Hydration: Addition of water

Hydrolates/hydrosols: Volatile water-soluble material of plant origin that is separated as the aqueous condensate during steam distillation of an essential oil.

Hydrolysis: Decomposition of a compound through reaction with water

Mineral: Raw materials obtained from naturally occurring processes formed through geological process, but excluding fossil derived materials

Neutralisation: Adjustment of the pH to neutral

Preservative: Substances which prevent the growth of micro-organisms, specifically bacteria, moulds and yeasts.

Rectification: distillation or re-distillation to remove undesirable components

Saponification: Hydrolysis of a fat with an alkali to form a soap and glycerine.

Scarification: The process of cutting off for example citrus rind to extract the oil

Solvent: A substance that dissolves or causes dispersion

Soap: Cleansing and emulsifying agent that is the sodium or potassium salt of a fatty acid

Steam stripping: Splitting of a compound with steam e.g. splitting a vegetable oil into fatty acids and glycerine

Sulphation: process to yield a sulphate ester of a fatty acid

Surfactant: A substance that reduces surface tension of a liquid, or the tension between two liquids, or a liquid and a solid

Tinctures: a cosmetic substance or remedy in soluble form, especially in a solution of alcohol.

Transesterification: Replacement of one component of an ester with a different ester

Disclaimer:

The safety and efficacy of cosmetics produced to these standards fall outside the scope of these standards and are not the responsibility of Demeter International.

XII

Standards for DEMETER/Biodynamic® wine

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Ideally Demeter/Biodynamic wine helps the development of nature and man, speaking to the senses and speaking to the mind. Demeter/Biodynamic wine growing is not a means to an end. Its purpose is to enrich the world and to celebrate the beauty of landscape and life.

1. Background and objectives

The aims and objectives are derived from the lectures given in the year 1924 by Rudolf Steiner and which are published and known as "The Agricultural Course". These lectures refer among other subjects to the cosmos (the heavens) as creating life forces in man, animals and plants and refer to the ways to make these life forces productive in agriculture and horticulture, including growing grapes. It needs the human being in the role of an artist to develop soil, fertility and plant in such a way that fruits of vital quality become available.

Demeter/Biodynamic wine is made from Biodynamically raised grapes. These grapes are the product of an extended Goethean view of nature that sees nature as an integrated body in which material, form, warmth and rhythm all play a part. Out of this concept, the Biodynamic method with its preparations, working in cooperation with the rhythms of the cosmos, specialized plant breeding etc. has grown. The aim is to move the vineyard more and more towards an individuality in its own right using these methods. The grapes produced by such a vineyard should be a true, unique, authentic expression of this individuality.

As the growth and ripening of fruit is dependent on the respectful combination of cosmic and material forces, the development of man is also dependant on a respectful interaction with nature and on appreciative communion between individuals. It is a sign of Biodynamic quality development to foster these interactions. The character of individual Demeter/Biodynamic wines will vary according to who and what has contributed to its emergence.

In making reference to artistically determined processes it is obvious that the application of the rules and conditions described in these guidelines cannot by themselves ensure the inclusion of life forces in produce. Section three of these standards in particular ensures that the rules and conditions described will avoid degradation of life forces as much as is presently possible.

Research in Biodynamic production and in wine processing continues on a permanent basis. Therefore these standards will be subject to continuous improvement. Practitioners in fact are required to research in the areas of soil, plant and social development. They are required likewise to continually research ways to improve the processing of wine. In section three, the column listing aims indicates potential improvements to the processing method. These are to be used as a guideline defining directions for development.

Biodynamic/Demeter wine is offered to a discerning public. Customers are offered maximum transparency about the origin and the handling of Demeter/Biodynamic wine including the use of additives or agents, even if they will only be temporarily in contact with the final product. Nothing shall conceal the true nature or the factual properties of the produce.

The quality of Demeter/Biodynamic wine expresses itself as preserved vitality. This can be measured conventionally through the presence or absence of ingredients, and through other assessment techniques such as crystallisation and the study of formative forces

2. Scope and guiding principles

The grapes and the producing farm must be certified. Certification must be through a certifier which itself is authorised by a Demeter Organisation. This Demeter Organisation itself needs to be recognised by the international community of Demeter producers and processors, in other words be a member of Demeter International, an association incorporated in Darmstadt, Germany.

The work carried out in the wine cellar is a rounding off of the processes underlying grape production in the vineyard. As little technology is employed as possible and the fewest aids and additives used in all stages of the process. Aids and additives currently permitted should be reduced or phased out as processing techniques improve. The procedures should respect and be in harmony with the surroundings, the location, and the people involved in production. The primary aim is to at least maintain the quality present in the Biodynamic fruit. (For that reason harvesting the grapes by hand is preferred in order to guarantee the highest possible raw material quality for processing.)

All processing steps and methodologies used to process both the grapes as well as the ensuing products are to follow the following principles:

- The product shall be of high quality in sensory terms and digestibility, and taste well.
- Sulphur dioxide is to be used to the minimum.
- Processes that require large inputs of energy or raw materials are to be avoided.
- Aids and additives that raise environmental or health questions, from the point of view either of their origin, their use or their disposal, are to be avoided.
- Physical methods are preferable to chemical methods.
- All processing by-products, be they organic residues or waste water, are to be dealt with so that negative effects on the environment are minimised.

The standards are defined in terms of a positive list of processes, ingredients, additives and aids. All other methods and materials not mentioned in this standard are excluded from the production of Demeter wine. Nevertheless, in order to emphasise the strict prohibition of some common processes and materials, the following are not permitted:

- The use of genetically modified micro – organisms
- Potassium hexacyanoferrate
- Ascorbic acid, sorbic acid
- PVPP (Polyvinylpyrrolidone)
- Diammonium phosphate
- Isinglass (Sturgeon swim bladder), blood and gelatine

All materials that are used for processing equipment, including tanks for fermentation and storage must in no way compromise the quality of, or pose contamination risks to the juice or wine.

3. Wine processing standards

| | | Aim | Standard |
|-----|-----------------|--------------|-------------------------------|
| 3.1 | Origin of fruit | | |
| | | 100% Demeter | 100% Demeter certified fruit. |

| | | | |
|-----|--|------------------------|---|
| | | certified fruit. | |
| 3.2 | Harvest | | |
| | | Hand harvesting | Machine harvesting permitted. Pomace to be returned to the vineyard if possible. |
| 3.3 | Cellar machinery | | |
| | | Maximum use of gravity | Pumps that develop high shear or centrifugal forces e.g. centrifugal pumps are not permitted in new installations or when replacing machinery |
| 3.4 | Tanks | | |
| | | Natural materials | Concrete, Wooden barrels, Porcelain, Steel tanks, Stoneware, Clay amphora, all permitted |
| | Plastic | | Plastic vessels restricted to transfer. Not for storage |
| 3.5 | Physical measures with the product | | |
| | | | Heating of the red wine mash to a maximum of 35°C allowed. Use of heating and cooling to steer fermentation is permitted. No pasteurisation |
| 3.6 | Enrichment with sugar (chaptalisation) | | |
| | Addition of sugar | No sugar addition | Addition of sugar to increase the alcohol content by a maximum of 1.5% by volume is permitted. Demeter sugar or grape juice concentrate, if unavailable certified organic sugar or certified organic grape juice concentrate. |
| | Addition of sugar for tirage | | Demeter or if unavailable certified organic sugar – maximum increase of alcohol through |

| | | | |
|-----|---|-------------------------------------|--|
| | (sparkling wine) | | secondary fermentation is 1.5% |
| | Alteration of the juice, liquid in the mash (concentration) | | Concentration of the entire must is not allowed. Alcohol reduction by technical methods is prohibited. Addition of water to the mash/must is permitted |
| 3.7 | Alcoholic fermentation | | |
| | Fermentation technique | | Heating to speed up fermentation permitted, no pasteurisation |
| | Yeast | Indigenous yeast only | Indigenous yeast, pied de cuve. Brought in neutral yeast is permitted only for justified stuck fermentation (5 brix – sugar 50g/litre – or less) or for secondary fermentation of sparkling wines. Brought in yeast shall be Demeter or certified organic, if documented unavailable then GMO free, non-synthetic commercial yeast (see part A 2.2). It must not have been grown on a petro-chemical substrate or sulphite waste liquor. |
| | Yeast nutrients | Demeter yeast hulls | Demeter/organic yeast hulls: other yeast nutrients need approval by the respective organisation |
| 3.8 | Biological acid reduction | | |
| | | Indigenous Malolactic Bacteria only | Lactic acid bacteria, free of GMO |
| 3.9 | Preservation with sulphur | | |
| | Forms of sulphur | | Following forms are authorized : <ul style="list-style-type: none"> - Pure SO₂, as a gas or in solution - Potassium bisulphite |

| | | | |
|------|--|---|---|
| | | | - Potassium metabisulphite Effervescent tablets are not permitted. |
| | SO ₂ total [mg/l] at bottling | SO ₂ to be restricted to the absolute minimum | <5g/l residual sugar, white 140 red 100 >5g/l residual sugar, white 180 red 140 Sweet wines: 360 with Botrytis, 250 without. Sparkling wines the same as white. |
| 3.10 | Tartar stabilisation | | |
| | | Only cold stabilisation, natural tartrate from BD wine production | Cold treatment, natural tartrate from BD or organic wine production, potassium bitartrate |
| 3.11 | Fining agents | | |
| | Organic | No organic fining agents derived from animals | Egg white from Demeter/organic eggs, Demeter milk and milk products, if unavailable organic, Casein, Pea, potato or wheat protein (organic if available). |
| | Non-organic | Bentonite | Bentonite (tests for dioxin and arsenic may be required), activated charcoal, aeration, oxygen including Micro Ox (Micro-ox allowed to prevent reduction in the early phase only) |
| 3.12 | Filtration | | |
| | Organic | Allowable materials Not defined | Cellulose, textile (chlorine free), polypropylene |
| | Non-organic | Bentonite Diatomaceous earth | Diatomaceous earth, bentonite (tests for dioxin and arsenic may be required), , perlite. |
| 3.13 | Acidity regulation | | |
| | | No acidity regulation | Potassium bicarbonate KHCO ₃ , Calcium carbonate, CaCO ₃ , Tartaric acid (E334) permitted. Addition limited to 1.5 grams/litre |

| | | | |
|--------|---------------------------|--|---|
| 3.14 | Oak | | |
| | | | Wooden barrels are permitted for aging the wine |
| 3.14.1 | Retsina wine | | |
| | | | Natural pine resin with no other aids or additives may be used in the production of traditional Greek Retsina wine |
| 3.15 | Bottling aids | | |
| | | | CO ₂ , N ₂ |
| 3.16 | Bottling | | |
| | | | Glass |
| 3.16.1 | Closures | | |
| | | | Glass, cork, screw top, crown corks, plastic closures |
| 3.16.2 | Tamperproof seal | | |
| | | | Nirosta, plastic or tin capsules, poly cap, sealing lacquer or wax. |
| 3.16.3 | Declaration | | |
| | | | Country of origin labelling required |
| 3.17 | Cleaning and disinfection | | |
| | Premises and equipment | | Water, steam, sulphur, soft soap, caustic soda, ozone, peracetic acid, acetic acid, hydrogen peroxide, citric acid followed by flushing with potable water. |

XIII

Standards for the certification of Demeter beer

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1. Scope

These standards apply to the production of beer which is to be labelled with the Demeter trademark.

2. Ingredients, processing aids and additives

The only ingredients, which may be used, are hops, malt, and brewing water. All must meet these standards. The use of processing aids is limited to those aids named in these standards.

In particular, genetically modified organisms or their derivatives (GMOs) may not be used (see EC. No. 834/2007 and EC No. 889/2008). The processor must ensure that such materials do not

become part of products produced to these standards, either directly (as ingredients, processing aids or additives) or indirectly (through pre-prepared products).

Ionising radiation may not be used on ingredients, processing aids or additives. Ionising radiation and microwaves are prohibited in all phases of production.

2.1 Brewing cereals

Only Demeter brewing cereals may be used to brew Demeter beer.

2.2 Hops

Unprocessed natural hop flowers has to be favoured. Type 90 pelletised hops may be used, but type 45 pelletised hops and hops extracts are prohibited. Hops from certified Demeter production are to be used if available. If Demeter hops cannot be obtained, permission must be sought from the respective organisation to use certified organic hops. The use of conventionally produced hops is prohibited.

2.3 Yeast and Lactic Bacteria

Organic yeast may be brought in or obtained from organic breweries. Conventionally produced yeast may be brought in only if yeast with comparable characteristics is not available in certified organic quality, and if documentation proving that this yeast is not genetically modified in any way, is available. Only live, fresh yeast with no additives may be used. The yeast is to be bred and multiplied in the brewery itself on the wort which stems exclusively from Demeter raw materials, or if not available, from organic raw materials. The yeast may be washed only in water of brewing quality. Lactic bacteria may be used for lactic fermentation to produce Demeter speciality beers.

2.4 Brewing Water

Water used for the brewing process and for all other purposes must be drawn from ground water reserves showing the lowest levels of pollutants. It must be at least of drinking water quality, and have a nitrate content of less than 25 mg/l.

2.4.1 Improvement of water quality

Simple upgrading of water quality, such as would be allowed for natural mineral water for human consumption, is also allowed for brewing water. The removal of iron and manganese by aeration is allowed. Elevated lime levels may be reduced by the addition of sodium carbonate.

Water may not be altered using the following processes: filtration with active charcoal, ion exchange, sterilisation of dirty water in particular with UV radiation, ozone, hypochlorite, chlorine dioxide.

2.5 Processing Aids

The following processing aids are permitted:

- Filter materials made from textiles (e.g. cotton wool), Membranes (without PVC, PVPP, Asbestos and Bentonite)
- Diatomaceous earth as a Filtering aid
- Sodium carbonate for softening water

- Brewing gypsum
- Fermentation carbon dioxide, and CO₂ may be used solely to temper the barrels and N₂ for filling

2.6 Additives

The use of food grade additives, aromas, minerals, trace elements, and vitamins is not allowed in the production of Demeter beer.

3. Processing

Demeter beer must be produced using the “traditional art of brewing” based on processes and procedures appropriate to life. For this reason beer production uses, in preference, materials that result themselves from natural processes (e.g. acid regulation using lactic bacteria instead of the addition of an acid).

3.1 Processing Procedures

3.1.1 Malting

Demeter beer production must use cleaned, Demeter certified, cereals for malting. The cereals are to be washed with water in the steeping containers, and set to germinate in the malting or germination floors.

The water must be of brewing quality.

The malt may not be treated with sulphur.

Only indirect heat may be used for drying to reduce the danger of amine development

3.1.2 The brewing process

When boiling the wort, no hops lees may be reused. Procedures to artificially accelerate the speed of the wort boiling process, in particular the use of silicic acid preparations to hasten the isomerisation of the hops constituents is not allowed.

The use of residues of beer as a natural acidifier is allowed.

The removal of alcohol from beer has not yet been regulated.

Specialist light beers are to be produced with yeast types that naturally produce less alcohol.

Accelerated fermentation, using pressure or agitation is not allowed. All accelerated aging processes such as heating in storage are also not allowed.

Clarification aids, in particular wood shavings, organic chipping impregnated with pitch and aluminium foil are prohibited.

Nathan Process (fermentation and aging of beer in the same conical tank) is allowed.

The mature beer may be filtered with the materials listed in these standards in the section on processing aids. Filter materials should be chosen such that materials from a non-regenerating source are avoided as far as possible.

The correction of visual or taste shortcomings, e.g. the removal of off tastes by flushing with carbonic acid and using active charcoal filters, or alterations to the colour using beer colourings, is not allowed.

3.1.3 Preservatives

Cleanliness during production is the most important starting point for shelf life of the product (see section 8.6 of the processing standards for the use of Demeter, Biodynamic® and related trademarks.)

The use of materials to lengthen shelf life, such as silicic acid preparations, PVPP bentonite etc, is prohibited.

Hot filling of the bottles and disinfection filtration to kill micro-organisms are not allowed, as they diminish taste and act as preservatives. Unstrained beer: Flash heating (Heating for a short time) with subsequent rapid re-cooling is permitted.

Beers with elevated residual sugar content may be pasteurised.

The disinfection of bottles with sulphites and the treatment of cork cap seals with formaldehyde are prohibited.

In case of secondary fermentation in the bottle, sugar addition is permitted, only if the maximum addition does not exceed 2.5g/L beer, and if the sugar is of certified Demeter quality (or organic if unavailable).

3.2 Prohibited Processing Procedures

- Improvement of water using active charcoal filters or ion exchange
- Disinfection of brewing water using UV radiation, ozone, hypochlorite or chlorine dioxide
- Drying with direct heat
- The treatment of hops and malt with sulphur
- The reuse of Hop lees and yeast cake (barm) or the artificial acceleration of wort production e.g. through using silicic acid preparations
- Rapid fermentation processes and accelerated aging i.e. by heating in storage
- Protein stabilisation with bentonite, silica preparations, PVPP
- Disinfection by pasteurisation and hot-filling of the bottles
- Procedures to artificially reduce the alcohol content
- Procedures to correct taste
- Visual improvement using beer colourings
- Determination of the filled level using radioactivity

4. Packing

The principles of packaging are regulated in Section 6 “Packaging and packing materials” of the processing standards for the use of Demeter, Biodynamic® and related trademarks.

Packaging materials are to be chosen considering the maintenance of product quality and the minimisation of environmental impacts.

Beer is to be packed exclusively in glass bottles, or kegs/barrels of stainless steel or wood. Single use cans are prohibited. The bottle labels are to be printed using inks containing no, or only low levels of, heavy metals. Covering of the bottles with silver paper is prohibited.

When buying in new beer crates, they are to be made of environmentally friendly materials (low-density polyethylene, with a low heavy metal content).

Bottle tops must have sealing elements that don't contain PVC.

5. Cleaning of facilities

Regulations governing cleaning are contained in section 8.6 of the Processing Standards for the use of Demeter, Biodynamic® and related trademarks

Regular and thorough cleaning is obligatory. This is the best prerequisite for a long product life.

Environmentally friendly cleaning materials and methods are to be chosen. Cleaning using alkalis and acids is allowed.

As a rule the bottling plant is to be cleaned with hot water and pressure rather than sterilising with a disinfection agent.

If needed, hydrogen peroxide (H₂O₂) or peracetic acid can be used.

6. Pest control

Breweries and farmers who brew beer must follow Section 8 of the Processing Standards for the use of Demeter, Biodynamic® and related trademarks

7. Labelling

Labelling of the beer is regulated in the currently valid version of the Standards for labelling with Biodynamic and the Demeter trademark logo

XIV

Standards for the certification of DEMETER cider and fruit wines

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 - 4.1 Principles
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 - 4.3 Caps
- 5 Cleaning of facilities**
 - 5.1 Cleaning procedures
- 6 Non-permitted ingredients and processes**

1 Scope

This standard defines the production of Demeter cider and fruit wines.

2. Ingredients

- 2.1 Ingredients of agricultural origin

Raw materials for the production of fruit wines (e.g.. apples for cider, pears for perry) must be of certified Demeter quality, fully traceable and identifiable.
- 2.2 Ingredients of non-agricultural origin

The fruit wines are made using indigenous yeasts. Specific biodynamic, certified organic or if these are unavailable commercial yeasts may be brought in. All brought in yeasts must be documented GMO free.
- 2.3 Other ingredients, additives and processing aids
 - Metabisulphite (E224), SO₂ (E220)

- Demeter, or if unavailable, certified organic sugar to a maximum of 10%.

3 Processing methods

3.1 Processing of the raw material

- 3.1.1 The fruit is to be cleaned in potable water and crushed.
- 3.1.2 The crushed fruit is to be pressed in a gentle manner. Centrifuges are not permitted.
- 3.1.3 Fermentation shall occur in stainless steel tanks, wooden or polyethylene barrels to produce the fruit wines
- 3.1.4 Storage of the finished product must be in clearly identified containers that do not influence the quality of their contents.

4 Packing

- 4.1 The principles of packaging are regulated in Section 6 “Packaging and packing materials” of the processing standards for the use of Demeter, Biodynamic® and related trademarks.

4.2 The following packaging is allowed:

- Glass bottles
- Barrels (wood, ceramic materials, stainless steel)

Containers made from plastic or aluminium are not permitted.

- 4.3 Bottle tops must have sealing elements that do not contain PVC.

5 Cleaning of facilities

- 5.1 Regular and thorough cleaning is obligatory. This is the best prerequisite for a long product life. As a rule, the bottling plant is to be cleaned with hot water and pressure rather than sterilising with a disinfection agent. Cleaning materials used are as listed in 8.6 and their use documented. Flushing with potable water is required following the use of any cleaner.

6 Non-permitted ingredients and processes

- Procedures to artificially reduce the alcohol content
- Procedures to correct taste
- Visual improvement using colourings
- Determination of the filled level using radioactivity

XV

Standards for the certification of DEMETER alcoholic spirits and alcohol for further processing

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 - 4.1.8 Flavouring
 - 4.1.9 Storage of product
 - 4.1.10 Bottling
 - 4.2 Purging and flushing protocol
5. **Non-permitted ingredients and processes**

1. **Scope**

This standard is to define both the production of Demeter alcohol used as an ingredient in other Demeter products such as tinctures, as well as alcoholic spirits used as beverages. Other alcoholic

beverages are defined in the appropriate section of the Demeter International processing standards (see section XII wine and section XIII Beer and Section XIV Cider and fruit wines).

2. Labelling

Labelling of alcohol, and products using Demeter alcohol as an ingredient are defined in the Demeter International labelling standards (see section 4.5.2)

3. Ingredients

3.1 Ingredients of agricultural origin

Raw materials for distillation must be in certified Demeter quality, e.g. grains, fruit juices and vegetables, fully traceable and identifiable. If molasses or clear juice is used, produced from sugar cane or sugar beet, the cane or beets must have been processed according to Section IX of the Demeter International processing standards. Fruit juice concentrates must meet section I of the same standard.

Incoming raw materials are to be stored in containers cleaned for the purpose that are unambiguously labelled. A separation protocol must be in place to prevent contamination.

3.2 Ingredients of non-agricultural origin

Yeast for fermentation and fermentation aids must be documented as GMO free

Other ingredients, additives and processing aids must be approved, and may in any case not exceed 1% of the must by weight e.g. acidity regulators (tannic acid and lime), yeast nutrients, enzymes, citric acid.

4. Processing methods

4.1 Processing of the raw material

4.1.1 Before processing begins, all vessels and holding containers must be cleaned, and piping must be purged (see section 4.2)

4.1.2 Malting

Cereals used for malting are to be washed with water in the steeping containers, and set to germinate in the malting or germination floors.

The water must be of brewing quality.

The malt may not be treated with sulphur.

Only indirect heat may be used for drying to reduce the danger of amine development

4.1.3 The raw material (milled grain, molasses or sugar containing juice) may be diluted with potable water.

4.1.4 Fermentation shall occur under anaerobic conditions to produce alcohol.

4.1.5 Yeast may be re-used after centrifuging from the must and washing. The centrifuged yeast may contain certified organic must if recovered from certified organic production. The certified organic must

may not exceed 5% of the volume of the Demeter ferment. Yeast containing conventional must is excluded.

4.1.6 Fractional steam distillation yields ethyl alcohol of up to 96% proof. Alcoholic spirits are usually in the range of 40% – 70% proof. This may occur in several steps.

4.1.7 Where intermediate distillation products are produced these must be stored in cleaned, dedicated containers and clearly labelled.

4.1.8 Demeter alcoholic spirits for human consumption may be flavoured using certified Demeter ingredients. All other flavours require approval of the respective organisation

4.1.9 96% proof ethanol, for use as an ingredient in food must be stored in stainless steel or glass, non-food use may be stored in plastic. For alcoholic spirits, wooden barrels may be used for storage and maturation. Plastic containers are not permitted

4.1.10 Bottling.

Only glass may be used. Any filtering to be done using processing aids as outlined in Section 5.4.

Cork or screw top closures only maybe used.

Tin capsules

4.2 Separation, purging and flushing protocol

See General section Part A Quality assurance 3.1 and 3.2

5. Non-permitted ingredients and processes.

Demeter alcohol may only be produced from food materials or food by-products (e.g. rotten materials, wood etc. are excluded)

XVI

Standards for the certification of textiles from DEMETER fibre

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1. **General**
2. **Raw Materials**
3. **Harvesting**
4. **Processing**
5. **Labelling**
6. **IVN Guidelines (International Natural Textiles Association) – Best-5.0, Sept 2012**

1. **General**

Textile raw materials (wool, cotton, linen, silk, flax, etc.) are agricultural products for which all the principles of the Biodynamic method of production apply. Textile production differs from food production in that processing is always necessary. Just as the processing of food can degrade Biodynamic qualities, so the processing of textiles can negatively affect the qualities of Biodynamic fibres. Textile processing also uses a large number of chemical inputs (scouring, dyeing, etc.). These may lead to significant environmental damage and/or contamination of the end product.

The exclusion of specific toxic products in production is regulated by the Demeter Production Standards.

In processing, this aspect is regulated by the standards of the International Association of Natural Textiles (IVN) which have been chosen as the most suitable for the processing of Demeter textiles

Demeter products always meet the minimum standards for organic textile products.

2. **Raw Materials**

All Demeter certified fibres (wool, cotton, flax etc.) maybe used in Demeter textiles.

Certified fibres from properties in conversion to Demeter are acceptable if their share in the processed textile does not exceed one third of the overall content.

Mixtures containing any fibres that come from Demeter certified agriculture are permitted.

As long as silk or other natural fibre is unavailable in Demeter quality, the mixing with organic fibres is permitted. Demeter labelling of such products containing mixed fibres must contain a minimum of 66% Demeter fibre by weight.

3. **Harvesting**

Cotton must be handpicked. Machine harvest is only permitted when the use of chemicals is excluded. Animal fibres are to be shorn or combed.

In addition, spot checks must be made in a systematic manner to ensure that there is no contamination of the raw materials.

4. **Processing**

The standards of the International Natural Textiles Association (IVN) in their latest published edition (currently version Best 5: 2012) apply.

5. **Labelling**

The Demeter Standards for Labelling apply for the Labelling of Textiles from Demeter wool or from Demeter fibres.

6. **IVN Guidelines (International Natural Textiles Association) – Best-5.0, Sept 2012** (as an attachment to these standards)

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

The Standards Committee

Demeter International processing standards

Attention: Ian Henderson

ian.henderson@demeter.net