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# DEMETER ASSOCIATION, INC.

## BIODYNAMIC® PROCESSING STANDARD

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## **GENERAL GUIDELINES: PROCESSING, MANUFACTURING, & PACKAGING STANDARDS FOR DEMETER CERTIFIED BIODYNAMIC® & AURORA CERTIFIED ORGANIC® CERTIFICATION**

### **Introduction**

In total this Standard for the processing of Demeter Certified Biodynamic® products has a simple but meaningful theme. Its focus is that the post harvest handling/processing of Biodynamic® agricultural ingredients results in a finished product that has a *significant* and verifiable amount of ingredients that come from Biodynamic agriculture in it and that they are minimally processed. This Standard is also unique in that its focus is specific to numerous types of products (i.e. dairy, wine, personal care etc.), and their specific nature. The intended result is a product that is true to the Biodynamic® agriculture from which it comes.

These are general standards and guidelines that apply to Demeter Certified Biodynamic® processing operations in the United States. These standards are also effective for Aurora Certified Organic® certification. Part A is the General Standards applicable to all product types. Part B is the specific product type standards. Some of these requirements may exceed the USDA National Organic Program (NOP) Standards. The NOP regulations are elaborated in a separate document. Beginning October 21, 2002, all products sold, labeled and represented as organic must be certified to USDA NOP standards by an NOP-accredited certifier.

*Note that Aurora Certified Organic product cannot be legally labeled as such without also having NOP organic certification as a base.*

### **A) General Guidelines**

#### **1. Ingredient source**

The farm producing the raw product must be certified by the Demeter Association or another recognized Demeter Certifier. If the processing is contracted to an off-farm processing facility, the raw product must arrive at that facility in the same container and condition in which it left the farm, and the container must be labeled in a manner that clearly identifies the ingredient as Demeter Certified Biodynamic®. Processors and co-packers must be inspected.

#### **2. Licensing**

Any packaging or preliminary processing done after the product leaves the farm and before it reaches the applicant facility must also be licensed and inspected. If said packaging/processing is done while the product is still under grower ownership, the inspection occurs as part of the farm certification. If another person takes ownership of the product, a separate licensing process must occur. In all cases a licensing agreement between the label owner and the Demeter Association is necessary to allow use of the DEMETER®, BIODYNAMIC®, DEMETER CERTIFIED BIODYNAMIC®, AND AURORA CERTIFIED ORGANIC® certification marks on such labels.

#### **3a. Percent certified ingredient**

For Textiles, Wine and Cosmetics there are product specific standards related to the required percentages of DEMETER CERTIFIED BIODYNAMIC ingredients. Please see the related standards for specifics (included in Part B). For processed product to be labeled DEMETER, BIODYNAMIC, or DEMETER CERTIFIED BIODYNAMIC, products must contain at least 90% certified ingredients from DEMETER CERTIFIED BIODYNAMIC sources, or AURORA CERTIFIED ORGANIC sources if certification is Aurora. Agricultural ingredients used in the remaining 10% must be certified organic at a minimum, and non-agricultural ingredients used must be permitted by Demeter.

In general, products that fall below 90% DEMETER CERTIFIED BIODYNAMIC ingredients but contain 70% or

more DEMETER CERTIFIED BIODYNAMIC ingredients, may be labeled 'Made with DEMETER CERTIFIED BIODYNAMIC (ingredient)'. Agricultural ingredients used in the remaining 30% must be certified organic at a minimum, and non-agricultural ingredients used must be permitted by Demeter. Cosmetics, wine, and textiles currently have product-specific labeling standards in regards to the percentage of certified ingredients.

For all products, the label may list no more than 3 food groups, and all ingredients within the group must be certified. With all "made with" labeling the DEMETER and/or BIODYNAMIC logos may not be used on the main panel; consult with the Demeter office about use on the ingredient panel.

Products which fall below 70% certified ingredients may only identify the certified ingredient in the ingredient listing. Ingredient statement labeling is an exemption that needs to be approved by Demeter USA. The exemption must be revisited annually. This exemption allows such labeling for 36 months or until enough Demeter Biodynamic® ingredients become available to achieve prominent Biodynamic® or Made With Biodynamic® Ingredient labeling, whichever comes first. For this exemption the product must contain at least 10% Demeter Certified Biodynamic ingredients. At a minimum the product also must be verified to meet the National Organic Program requirements for 95% (Organic) labeling. (Note the requirements for Cosmetic products and Wine are specific to such products. See the related processing standard.)

Demeter or Aurora may be mentioned as the certifier of the ingredient. The logo may not be used. A document review of the facility may be acceptable in case of a single product being manufactured by the facility with a DEMETER CERTIFIED BIODYNAMIC ingredient.

In all cases, non-certified ingredients must not have been produced using GMOs, and may not have been subjected to any irradiation.

### **3b. Calculating certified ingredient**

The calculation of the percentage of each ingredient is by weight and /or volume at the time of the inclusion of that ingredient in the production process. Water and salt are not included in this calculation.

### **4. Documentation**

All incoming shipments of raw product must be accompanied by bills of lading and/or invoices stating the number of containers, lot numbers, and point of origin.

### **5. The need to use certified minor ingredients**

If DEMETER CERTIFIED BIODYNAMIC minor ingredients and/or processing aids are commercially available, they must be used. Commercial availability is determined primarily by quality and quantity considerations, less so by price. Consult with the Demeter office when considering non-certified ingredients. Non-agricultural ingredients must be approved by Demeter. See Tables 1-3 for a general list of allowed ingredients and additives.

### **6. Off-site processing**

Any facility independent of the applicant that handles the applicant's ingredient/ product must meet these guidelines, complete a separate application, and be inspected. If the facility used has current and valid organic certification and it can be verified that the concerns of the Demeter Processing Standard are clearly addressed under the scope of such certification a site visit may not be necessary and the Demeter concerns addressed via a review of the facility's existing organic certification and the information provided on the Demeter Processing applications. Such situations will be approached on a case-by-case basis.

## **7. Product segregation**

If the processing/manufacturing/packaging facility also handles product not certified by the Demeter Association, there must be clear demonstration that there exist both the physical facilities and the administrative capacity to ensure that there is no possibility of product mixing.

## **8. Residue testing**

In cases where there is risk of contamination or questions as to the origin of the raw product, we may require residue testing.

## **9. Flavorings**

Flavorings should be from good quality DEMETER CERTIFIED BIODYNAMIC or certified organic sources.

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

## **10. Cleaning agents and disinfectants**

The processing/manufacturing/packaging facility must meet all current government hygiene and health regulations and use sanitation methods approved by Demeter Association. Cleaning agents and disinfectants should be chosen which present the least likelihood of leaving residue on product contact surfaces at the time of product contact.

Regardless of what material is used it needs to be demonstrated that product contact surfaces are free of sanitation material residue at the time of processing DEMETER CERTIFIED BIODYNAMIC product. Certain highly residual materials, such as quaternary ammonia are not allowed. Adequate care must be taken during facility cleaning not to contaminate unprocessed or processed product with cleaning agents.

## **11. Storage**

Storage and aging areas should be ventilated, but sealed against birds, rodents, and other pests. Storage under controlled atmospheric conditions (CO<sub>2</sub> or nitrogen) is allowed. DEMETER CERTIFIED BIODYNAMIC product and ingredients must be clearly segregated while in storage.

## **12. Insect and pest control**

Insect and pest control in the storage, processing, and packaging areas should be accomplished by mechanical means or with CO<sub>2</sub> fumigation, freezing, or with non-toxic materials. Prevention via adequate facility sanitation and structural maintenance needs to be the primary control mechanism. Toxic pesticide materials cannot be used without approval from the Demeter Association. If such approval is granted the pesticide material cannot be used in a manner that it threatens the integrity of DEMETER CERTIFIED BIODYNAMIC ingredients, WIP, finished product or packaging. Compliance with this requirement needs to be adequately documented.

## **13. Rodent control**

Prevention via facility sanitation and structural maintenance needs to be the primary control mechanism. If further measures are required the following controls can be applied: Live catch traps and mechanical kill traps; Anti-coagulant poison baits in covered, solid bait boxes. Bait must be in a form that it cannot be carried off /consumed by other animals, such as a paste, etc. Such bait boxes cannot be used inside the processing facility, only on the outside as a prevention.

## **14. Packaging**

In general packaging should be avoided beyond what is needed to preserve the quality and safety of the



product. All packaging must be free of fungicides, preservatives, fumigants, insecticides, and not be a contamination source of any materials prohibited by this *Standard*.

Petroleum derived waxes are prohibited. Unstable (low density) plastics should not be used for lining or packaging. PVC (polyvinyl chloride) plastics are not permitted in packaging or storage containers. Precaution needs to be taken with the use of aluminum packaging, particularly with acidic and salty foods so that Aluminum does not leach from packaging into finished product. All packaging used for Demeter certified product must be shown to be returnable on a local basis, or recyclable via common local methods available to the consumer nationally, such as curbside pick up or recycling centers. Demeter defines "recyclable" as defined by the Federal Trade Commission (FTC) Green Guide which notes a packaging as "recyclable" when at least 60% can be recycled via curbside or community recycling centers on a national level.

If the above-mentioned criteria cannot be met, an exemption can be approved 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.

## **15. Genetically Modified Organisms**

Ingredients, additives and packaging used with Demeter certified products may not be from a genetically engineered source, for example an ingredient from a genetically engineered crop variety, or genetically engineered additive such as enzymes, yeast etc. The Demeter Standard for products labeled and sold as Biodynamic is "none detected" when tested for a suspected GMO contaminant. If there is a reason to suspect a processed product contains ingredients that are from GMO production, or potentially contaminated from GMO agricultural production, the product to be commercially labeled as DEMETER/BIODYNAMIC will be tested to verify "none detected".

## **16. Nanotechnology**

Demeter adopts the precautionary principle in the implementation of nanotechnology, and therefore excludes it from all usage in Biodynamic agriculture, and from all Demeter certified products. Demeter will monitor developments in the field of nanotechnology, including the stance of other organic certifiers and review this policy in the light of new information that becomes available.

## **17. Labeling**

Package design, text, and use of the certification symbol and/or language must be pre-approved by the Demeter office prior to printing. Please see the general Demeter Labeling Standards for all labeling requirements. The statement "Demeter Certified Organic" may not be used either verbally or in printed materials. Our premium organic certification is 'AURORA CERTIFIED ORGANIC'. The terms Demeter®, Biodynamic®, Demeter Certified Biodynamic®, and Aurora Certified Organic® are registered certification marks and must be represented as such in all labeling and promotional materials.

## **18. Transport**

Carriers of raw product must be clean, must not have been fumigated within 72 hours or used to transport any substances which could compromise product quality. It is advisable to request a clean truck affidavit from the shipper. Finished product must be transported in sealed containers or cartons.

## **19. Audit trail and inventory control**

Audit trail and inventory control procedures must meet the following criteria:

- a. Accurate records of all transactions.
- b. Monitored inventory records that are clear and complete and track product from receipt through storage, production, packaging, post-production storage, and shipping.
- c. Records proving that certified packaged/processed product coincides with certified raw product received, less expected processing loss.
- d. Retail packaging stamped or otherwise marked with identification that enables tracing product from the retail outlet through processing and back to the farm of origin.

Facility records, including bills of lading, purchase orders, invoices, and inventory records, shall be made available on request to a Demeter inspector. All information received will be kept confidential by the Demeter Association and shared only with Evaluation Circle members during a review.

## **20. Costs**

Inspection visits, audits, and possible residue testing will be conducted at the product owner's expense.

## **21. Suspensions, sanctions, and de-certification**

In the event that it becomes necessary to suspend, sanction, or de-certify an existing operation, the licensee affected will be billed for costs. Other certifiers may be notified of the action. Appropriate information as determined by the certifier may be made public.

## **22. Water quality**

### **22a. Water as an ingredient**

Water used as ingredient in DEMETER CERTIFIED BIODYNAMIC product must be documented to meet the Federal Safe Drinking Water standard. In addition water which is used as an ingredient in the final product must have a chlorine level no higher than 4 mg/liter. To meet this standard water may also need to be filtered. Specifications for filter replacement should be followed.

### **22b. Product wash water**

Water used to wash DEMETER CERTIFIED BIODYNAMIC product must be documented to meet the Federal Safe Drinking Water standard. In addition water used to wash product must have a chlorine level no higher than 4 mg/liter. To meet this standard water may also need to be filtered. Specifications for filter replacement should be followed.

### **22c. Equipment cleaning**

Equipment washed with disinfectants must be rinsed with safe drinking water before running food product and tested to the EPA food surface standard of 4ppm chlorine. Quaternary ammonia is prohibited.

## **23. Environmental Concerns**

**23a.** The waste stream resulting from the processing of Demeter product must be handled in a manner that does not degrade the environment. For example directing organic waste towards compost/ soil fertility versus landfill.

**23b.** Water use in processing must be done in a manner that focuses on water conservation. Water discharge from processing must be handled in a manner that does not pose a threat to the surrounding ecosystem. For example: treatment of nutrient rich wastewater, cooling of hot water, etc.

## 24. Microwave

Use of microwave during product processing is prohibited

## B) Product Specific Standards

Contents:

- Section 1. Standards for the certification of fruit and vegetable products
- Section 2. Standards for the certification of nuts, seeds and kernels as processed products
- Section 3. Standards for the certification of bread, cakes and pastries
- Section 4. Standards for the certification of grain, cereal products, pasta and tofu
- Section 5. Standards for the treatment and processing of herbs and spices
- Section 6. Standards for the certification of meat and meat products
- Section 7. Standards for the certification of milk and milk products
- Section 8. Standards for the certification of oils and fats
- Section 9. Standards for the production of sweetening agents, confectionary, ice cream, and chocolate
- Section 10. Standards for the certification of cosmetics and body care products
- Section 11. Standards for the certification of textiles from fibers
- Section 12. Standards for the certification of wine
- Section 13. Standards for the certification of beer
- Section 14. Standards for the making of distilled alcohol/spirits
- Section 15. Standards for the making of cider and fruit wines
- Section 16. Standards for the making of infant milk formula

Table 1 - Sugar and Salt

Table 2 - Additives/other ingredients

Table 3 - Processing aids

Appendix 1 – Rescue Yeast Culture Request for wine production

### Section 1: Standards for the Certification of DEMETER CERTIFIED BIODYNAMIC Fruit and Vegetable Products

#### 1.1 Fruit products

##### 1.1.1 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. Ethylene can be used for the ripening of bananas.

##### 1.1.2 Ingredients and additives

###### 1.1.2.1 Ingredients:

All DEMETER CERTIFIED BIODYNAMIC raw materials can be used as ingredients. Sweeteners and salt are described in Table 1.

###### 1.1.2.2 Additives and technical aids

###### 1.1.2.2.1 Additives allowed:

- Pectin for spreads based on fruit.

- Agar-agar for spreads based on fruit (These may not contain phosphates or calcium sulphate, and may not be preserved with sulphur dioxide).
- Carob bean gum for spreads based on fruit.
- “Native” starch and pregelatinized 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.

#### **1.1.2.2.2 Technical aids allowed:**

- Asbestos-free filter materials
- Plant oils and fats (non-hydrogenated) as non-stick agents for dried fruit.
- CO<sub>2</sub> and N<sub>2</sub> 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 Demeter Association:

- Diatomaceous earth for filtering
- Food grade gelatine for cosmetic reasons
- Bentonite for eliminating proteins

### **1.1.3 Processing methods according to product groups**

#### **1.1.3.1 General**

##### **1.1.3.1.1 Washing of fruit**

Wash water must meet Federal Drinking Water standards. Municipal water used for washing fruits should be carbon filtered to remove undesirable organic compounds.

**1.1.3.1.2 Chopping** of fruit may be done mechanically.

##### **1.1.3.2 Dried fruit**

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

Lemon juice or lemon juice concentrate can be 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 can be used to remove a waxy layer e.g. plums.

Freeze drying is only allowed for certain applications and only with permission of Demeter Association. Plant oils and fats (non-hydrogenated) may be used as non-stick agents.

##### **1.1.3.3. Frozen fruit**

Only fresh 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. Care must be taken that the product is not stored longer than 18 months before selling or further processing.

#### **1.1.3.4 Sterilized fruit preserves**

Only 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 sterilization where at all possible.

#### **1.1.3.5 Fruit juices, nectars and juice concentrates**

##### **1.1.3.5.1 Fruit juices and unrefined juice extracts**

Fruit juices and unrefined juice extracts are mechanically made from ripe, healthy, fresh DEMETER CERTIFIED BIODYNAMIC fruit. They may not be reconstituted from concentrates.

Enzymes, also in dried form (pectolytic, proteolytic and amyolytic), 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. Pasteurization, cooling and carbonic acid pressure treatment are allowed as preservatives. The removal of material causing cloudiness can be achieved, where necessary, by centrifuging. Asbestos- free filter materials may be used for filtration.

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

In principle, the aim is to produce, as much as possible, naturally cloudy juices. Mechanical chopping is allowed. The pasteurization 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.

##### **1.1.3.5.2 Nectars (Diluted sweetened juices)**

Nectars can be produced using the sweeteners listed in Table 1, and drinking water, in as far as it is necessary to add the water or sweetener 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. Pasteurization 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

##### **1.1.3.5.3 Juice concentrates**

The production of juice concentrates begins with the fruit juices or unrefined juice extracts (see 1.1.3.5.1) 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 amyolytic without chemical preservatives) may be used to produce juice concentrates. Regulating the acidity with calcium carbonate is prohibited.

#### **1.1.3.6 Fruit pulp and paste, fruit vinegar, fruit cheeses, spreads based on fruit, and partially manufactured products.**

##### **1.1.3.6.1 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.

#### **1.1.3.6.2 Fruit vinegars**

Fruit vinegar (also wine vinegar and beet vinegar) is to be produced from DEMETER CERTIFIED BIODYNAMIC fruit. Vinegar essences are not to be produced. Both traditional and rapid vinegar processes may be used. Starter cultures are permitted.

The addition of caramel coloring and sulphurous acid is not permitted, nor is the use of (potassium hexacyanoferrate). Synthetic vinegar production methods are prohibited.

#### **1.1.3.6.3 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, wherever possible, under vacuum. If fruit juices are used in preparing fruit cheese, they must fulfill the requirements set out in 1.1.3.4.1.

#### **1.1.3.6.4 Spreads based on fruit (fruit preparations)**

If fruit pulp or fruit paste is used in preparing spreads, they must fulfill the requirements of 1.1.3.5.1 and 1.1.2.2.1. Pectin and agar-agar as setting agents; carob bean gum as a thickener; and “native” starch and pregelatinized 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 1. 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.

#### **1.1.3.6.5 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.

#### **1.1.3.6.6 Fruit juice setting agents**

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

#### **1.1.3.6.7 Fruit syrups**

Syrups are undiluted sweetened fruit concentrates that will be diluted for drinking. 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.

## 1.2 Vegetable products, including potatoes

### 1.2.1. Storage of vegetables

The use of storerooms or pits (according to the vegetable type), including controlled atmosphere storage rooms, is permitted. **It is prohibited to treat vegetables with chemical preservatives (e.g. ethylene or acetylene) for storage. Irradiation is also prohibited.**

### 1.2.2 Ingredients and additives

#### 1.2.2.1 Ingredients

All DEMETER CERTIFIED BIODYNAMIC raw materials can be used. Salt and sweeteners are described in Table 1. All sugars included in Table 1 may be used as part of the fermentation process for acetic acid and lactic acid products.

#### 1.2.2.2 Additives and technical aids

- Starter cultures (must not be genetically modified; a written certificate to this effect must be provided by the supplier).
- Asbestos-free filter materials for vegetable juices.
- Diatomaceous earth for clarification (only with a granted exemption).
- CO<sub>2</sub> and N<sub>2</sub> as coolants and for controlled atmosphere storage.
- Plant oils and fats (un-hydrogenated).

### 1.2.3 Processing methods according to product groups

#### 1.2.3.1 General

##### 1.2.3.1.1 Washing of vegetables

Wash water must meet Federal Drinking Water standards. Municipal water used for washing vegetables should be carbon filtered to remove undesirable organic compounds.

##### 1.2.3.1.2 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.

##### 1.2.3.1.3 Chopping and sorting

Mechanical methods may be used for chopping and sorting.

##### 1.2.3.1.4 Blanching

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

#### 1.2.3.2 Dried vegetables (including mushrooms)

Treatment with naturally occurring acids (e.g. lemon juice and lemon-juice concentrate) is allowed in order to prevent browning. Plant oils and fats (un-hydrogenated) 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:** Freezing after blanching in order to lower the water content, treatment with sulphur dioxide or sodium sulphite, 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 organization.

### **1.2.3.3 Vegetables in cans and glass (including mushrooms)**

The bottling liquid may contain up to 1.5% of added salt. Treatment with naturally occurring acids (e.g. lemon juice, apple juice, sauerkraut juice) is allowed for light colored vegetables. The use of calcium chloride on tomatoes is prohibited.

Vegetable preserves are to be adequately heat-treated (sterilized).

### **1.2.3.4 Preserving vegetables by making them sour**

#### **1.2.3.4.1 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. Pasteurization of vegetables preserved with lactic acid is allowed, but should only be used when it is unavoidable.

#### **1.2.3.4.2 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 pasteurized.

### **1.2.3.5 Frozen vegetables**

Vegetables must be 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).

### **1.2.3.6 Vegetable juices**

To acidify vegetable juices, naturally occurring acids (e.g. cider vinegar, sauerkraut juice) can be used. Sauerkraut juice is to be pressed from sauerkraut. Filtration with diatomaceous earth is allowed only with the express permission of the Demeter Association. According to the pH value, juices will be pasteurized or sterilized. Pasteurization, being less destructive of quality, is preferred.

### **1.2.3.7 Tomato paste and horseradish preparations**

#### **1.2.3.7.1 Tomato paste**

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.**

#### **1.2.3.7.2 Horseradish preparations**

The production of horseradish preparations such as grated horseradish, table or delicatessen horseradish may not include the use of sulphur dioxide (SO<sub>2</sub>). The addition of lemon juice or lemon juice concentrate is allowed.



## **Section 2: Standards for the Certification of DEMETER CERTIFIED BIODYNAMIC Nuts, Seeds and Kernels as Processed Products (Nut butter and spreads for bread)**

### **2.1 General**

Oils and fats, which originate from nuts, seeds and kernels are covered in Section 8.

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

### **2.2 Ingredients**

All DEMETER CERTIFIED BIODYNAMIC raw materials can be used as ingredients. Sweeteners and salt are described in Table 1.

### **2.3 Processing**

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

## **Section 3: Standards for the Certification of DEMETER CERTIFIED BIODYNAMIC Bread, Cakes and Pastries**

### **3.1 Ingredients, additives, and technical aids**

#### **3.1.1 Ingredients**

All DEMETER CERTIFIED BIODYNAMIC raw materials may be used as ingredients. Sweeteners and salt are described in Table 1.

Additional general requirements for ingredients are as follows:

Dried milk products may not be used.

For deep frying peanut and palm oils only are permitted and must be certified organic if Demeter Certified Biodynamic® product is not available.

Chocolate coating must be certified organic if Demeter Certified Biodynamic® product is not available. If lecithin is present as an additive then it must not have originated from a genetically modified organism.

Fruit ingredients must meet the standards outlined in Section 1.

#### **3.1.2 Additives**

##### **3.1.2.1. Setting agents approved:**

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

##### **3.1.2.2 Alkaline brines**

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

##### **3.1.2.3 Flavorings**

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

Pressure, water and steam, vinegar, oil, ethanol or CO<sub>2</sub>

#### **3.1.2.4 Baking improvers**

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 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 DEMETER CERTIFIED BIODYNAMIC if available.

Conventional baking improvers may contain only those ingredients and additives that are listed in Table 2 below. All baking improvers used in bakery products require approval by the Demeter Association prior to use.

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

### **3.1.3 Aids**

#### **3.1.3.1 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.

#### **3.1.3.2 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.).

### **3.2 Raising agents**

#### **3.2.1 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.

#### **3.2.2 Chemical raising agents**

The following raising agents may be used:

- E 501 for ginger bread and honey bread

- Tartaric acid baking powder. Grain starch is the only allowable carrier that may be mixed with it.

Raising agents containing phosphates are prohibited.

### 3.3 Processing methods

#### 3.3.1 Milling

The use of hammer mills is prohibited because of the danger of high rotation speed causing temperature affects, which reduce quality. Mills made with natural or artificial stones, or steel rollers may be used. When buying a mill, stone mills should be preferred.

#### 3.3.2 Age of the flour

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

#### 3.3.3 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.

#### 3.3.4 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 products can be baked through and then deep frozen. They are to be sold as frozen food.

#### 3.3.5 Ovens

Baking in high frequency infrared 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.

#### 3.3.6 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, the recommendations for the pretreatment of the coated surface must be followed carefully before first use. Even small imperfections in the surface mean that such coated steels may no longer be used.

Single use **baking forms made of aluminum are prohibited.**

### 3.4 Labeling

Requirements in addition to Part A, Section 18 (General Guidelines, Labeling) include:

DEMETER CERTIFIED BIODYNAMIC bread and bakery products, whether wrapped or loose, must be accompanied by a list of ingredients that is available to all customers, retailers and distributors.

## Section 4: Standards for the Certification of DEMETER CERTIFIED BIODYNAMIC Grain, Cereal Products, Pasta and Tofu

### 4.1 General

**Products included in this section:**

Grains, milled grain, grain flakes.

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-gelatinized starch, gluten malt.

Pasta products (including filled pastas).

## **4.2 Ingredients and additives**

### **4.2.1 Ingredients**

All DEMETER CERTIFIED BIODYNAMIC raw materials can be used as ingredients. Sweeteners and salt are described in Table 1.

#### **Ingredients for pasta products**

##### **4.2.1.1 Noodles:**

Grain or milled grain products such as flour, semolina

Eggs

Herbs and spices

Vegetables

##### **4.2.1.2 Pasta fillings:**

Milk and milk products

Meat and meat products

Vegetable and vegetable products

Soy products

### **4.2.2 Additives**

#### **4.2.2.1 Flavorings**

Flavorings are to be solely pure etheric oils or pure extracts identical with the parent material. These flavorings and extracts may be obtained using the following extraction methods:

Pressure, water and steam, vinegar, oil, ethanol or CO<sub>2</sub>.

#### **4.2.2.2. Baking improvers**

Baking improvers for ready-to-use baking mixes are limited to the product group: small bakery items, baguette, rusks and toast, and are regulated in the standards for bread and bakery products (see Section 3).

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

## **4.3 Raising Agents**

**4.3.1** For ready-to-use baking mixes the following microorganisms, if not genetically modified and if grown on a certified organic substrate if available, are allowed:

Sour dough, dried sour dough granules, yeast, yeast products.

**4.3.2** For ready-to-use mixes, tartaric acid baking powder is allowed.

## **4.4 Processing**

**4.4.1** The production of modified starch using chemicals or enzymes is NOT permitted.

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

- The product is made from DEMETER CERTIFIED BIODYNAMIC raw materials.
- Labeling the product as BIODYNAMIC /DEMETER is not possible..
- Such product can only be labeled as “made with BiODYNAMIC ingredient”.

#### **4.4.1 Processing aids**

The use of nitrogen (N<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) is allowed.

Sodium hydroxide (NaOH) is allowed to adjust the pH value in the production of starch.

Isolated enzymes are NOT permitted.

#### **4.5 Tofu production**

5.1 Tofu is processed from soya beans that originate solely from certified Biodynamic enterprises, without exception.

5.2 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.

5.3 Starter cultures (not chemically preserved) are permitted for the manufacture of soya products.

5.4 Only hardwoods (as wood, shavings or sawdust) may be used for smoking soya products. Tropical hardwoods are excluded. ‘Liquid’ smoke is not permitted.

5.5 Extrusion technologies are not permitted in the manufacture of soya products.

### **Section 5: Standards for the Treatment and Processing of DEMETER CERTIFIED BIODYNAMIC Herbs and Spices**

#### **5.1 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.

#### **5.2 Ingredients, additives and processing aids**

All DEMETER CERTIFIED BIODYNAMIC raw materials can be used as ingredients. Sweeteners and salt are described in Table 1. Calcium carbonate is allowed.

Processing aids allowed include carbon dioxide and nitrogen for sterilization and cold grinding.

#### **5.3 Processing methods**

##### **5.3.1 Drying**

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 good hygiene is maintained.

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 is prohibited (see exceptions below in Section 5.3.2). 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) that are DEMETER CERTIFIED BIODYNAMIC or certified organic are allowed as surface treatment agents.

The use of high frequency drying is prohibited.

### **5.3.2 Other preserving methods**

Pickling in plant oils or vinegar that is DEMETER CERTIFIED BIODYNAMIC or certified organic is permitted.

Drying with electrolytes is allowed, but the only permitted electrolyte is salt (see Table 1).

Deep freezing is permitted.

Clean forced air systems based on fuels such as natural gas are permitted as long as such a system is free of fossil fuel contaminants in the heated air.

### **5.3.3 Chopping and cutting**

Chopping of herbs and spices is always accompanied by a loss of etheric oils. Whenever possible 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.

### **5.3.4 Cleaning**

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

### **5.3.5 Mixing**

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

## **5.4 Disinfection and sterilization**

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

Businesses that 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 ionizing radiation and microwaves for disinfection are prohibited, as are all chemical methods. For pest control deep freezing after drying is permitted.

## **Section 6: Standards for the certification of DEMETER CERTIFIED BIODYNAMIC Meat and Meat Products**

### **6.1 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 minimized by slaughtering animals locally. Animal slaughter will not be covered in detail in these standards. The endeavors 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).

### **6.2 Ingredients, additives and processing aids**

#### **6.2.1 Ingredients**

All DEMETER CERTIFIED BIODYNAMIC quality raw materials may be used as ingredients. Sweeteners and salt are described in Table 1.

Preparations and extracts of spices, extracts of meat and yeast and flavor enhancers are not permitted.

The use of wine is permitted in the production of sausages to be eaten raw.

#### **6.2.2 Additives and processing aids**

##### **6.2.2.1 Lactic acid**

Natural casings may be treated with lactic acid.

##### **6.2.2.2 Citrates**

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

##### **6.2.2.3 Starter cultures** (cultures of micro-organisms)

Starter cultures are permitted for use in sausages to be eaten raw, but not for the pickling solution. The use of mold cultures is permitted, though not from genetically

modified microorganisms. The producer or trader must provide written confirmation that this is the case.

#### **6.2.2.4 Sausage casings**

If natural casings are used, they should be from DEMETER CERTIFIED BIODYNAMIC animals. The intestines are to be thoroughly cleaned with lactic acid or vinegar and cooking salt.

#### **6.2.2.5 Immersion substances are prohibited**

#### **6.2.2.6 Smoke (see Section 6.3.11)**

### **6.3 Processing methods**

It is not permitted to produce DEMETER CERTIFIED BIODYNAMIC products together with conventional products. The only exceptions are smoking and ageing in cool rooms. In such cases the processor must have a clear labeling policy to prevent mix-ups.

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

#### **6.3.1 Maturing of the meat**

The use of tenderizing materials, or of electrical treatments to tenderize the meat, is not permitted.

#### **6.3.2 Cooling of the meat**

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

#### **6.3.3 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.

#### **6.3.4 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.

#### **6.3.5 Jellied meats**

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

#### **6.3.6 Salt cured meat**

The production of salt cured meat may not include the use of nitrite salts, saltpetre, ascorbic acid, (Glucono-delta-lactone: GdL) or food-grade acid. Dry curing and brine bath curing are both permitted, with the brine bath containing allowed forms of salt with or without spices.

#### **6.3.7 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 allowed 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 directly, but rather has to



process bought in sides of meat. The DEMETER organization must be informed, in writing, of all the details). The use of citrates must be declared in the ingredients list on the label.

### **6.3.8 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.

### **6.3.9 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.

### **6.3.10 Pressed meat**

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

### **6.3.11 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 include:

Suitable native wood types (as wood, shavings or sawdust, preferably from beech, oak and plane trees).

Herbs

Other types of plants such as juniper, heather, branches, conifer cones and spices.

## **6.4 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, aluminum, or plastic- aluminum 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 pasteurization. If possible, sterilization should be restricted to methods such as short duration-high temperature, multistage boiling and rotational sterilization. Wherever possible a reverse pressure autoclave should be used. Sterilization in a simple autoclave should remain the exception.

## **Section 7: Standards for the Certification of DEMETER CERTIFIED BIODYNAMIC Milk and Dairy Products**

### **7.1 General**

### **7.1.1 Transportation of the milk**

The milk must be picked up by special milk trucks with tanks dedicated to carrying DEMETER CERTIFIED BIODYNAMIC milk only. Tanks must have been thoroughly cleaned to remove residual from any past use for non-certified milk as well as residual from cleaners and sanitizers used in the cleaning process. Transport is also possible in DEMETER labeled cans, or milk may be delivered directly from the farm to the dairy.

### **7.1.2 Storage of the milk**

The storage of milk must be in special tanks that are designated for DEMETER CERTIFIED BIODYNAMIC milk. Any confusion with organic or conventional milk must be avoided through the use of an appropriate labeling system.

## **7.2 Ingredients and additives**

### **7.2.1 Ingredients**

All DEMETER CERTIFIED BIODYNAMIC raw materials may be used as ingredients. Sweeteners and salt are described in Table 1.

Oil may be used to treat the surfaces of cheese. Oil must be DEMETER CERTIFIED BIODYNAMIC or certified organic.

Any herbs and spices used must meet the requirements of the “Standards for the treatment and processing of herbs and spices.”

Any fruit preparations used must have met the production requirements of the “Standards for the certification of fruit and vegetable products.”

### **7.2.2 Additives**

Calcium carbonate ( $\text{CaCO}_3$ ) is allowed solely for the production of sour milk cheese. Sodium bicarbonate may not be used.

Calcium chloride ( $\text{CaCl}_2$ ) may be used as a processing aid in cheese production.

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.

## **7.3 Starter cultures**

### **7.3.1 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 CERTIFIED BIODYNAMIC milk.

Microorganism cultures such as *Brevibacterium linens* may be used. The use of genetically modified microorganisms is not allowed. The manufacturer of DEMETER CERTIFIED BIODYNAMIC milk products must find out the production details of the starter cultures from the supplier of these cultures, in writing.

### **7.3.2 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.

## 7.4 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 colored.

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).

## 7.5 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 aluminum vats is not allowed for either storage or processing.

### 7.5.1 Milk for drinking

The legally permitted pasteurization methods, to a maximum temperature of 80 degrees C, may be used to pasteurize 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 sterilization or UHT treatment are not permitted, and the milk may not be homogenized.

The following types of milk can be made commercially available:

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

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

### 7.5.2 Sour milk products, yogurt 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 and homogenization are prohibited.

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.

### 7.5.3 Sweet milk products

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

#### **7.5.4 Cream**

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

#### **7.5.5 Whey**

Both sweet and sour whey can be produced.

#### **7.5.6 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 allowed only as an ingredient in for processed products

#### **7.5.7 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. Coloring 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.

#### **7.5.8 Cheese**

##### **7.5.8.1 General**

The milk is to be purified by separation or appropriate filtration methods. To prevent bacterial contamination, approved pasteurization methods may be used (see Section 7.5.1) or the milk may be subjected to thermal treatment. Bacteria may also be removed by bacto-fuging, 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. Sterilization 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 colorings 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 that could reduce the quality of the DEMETER CERTIFIED BIODYNAMIC 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.

#### **7.5.8.2 Fresh cheese and curd cheese (Quark)**

Fresh and curd cheese may be produced with the addition solely of starter cultures and rennet. The utilization 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 with the addition of high or low fat curd cheese, or of cream, is permitted. The other common methods of fresh cheese manufacture are allowed.

#### **7.5.8.3 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.

#### **7.5.8.4 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).
- Herbs
- Other types of plants such as juniper, heather, branches, conifer cones and spices

#### **7.5.9 Ice-cream**

Details for ice cream (also sorbets and frozen yogurt) production are contained in Section 9.

## **Section 8: Standards for the Certification of DEMETER CERTIFIED BIODYNAMIC Cooking Oils and Fats** (dietary products and margarine are excluded)

### **8.1 Ingredients, additives and processing aids**

#### **8.1.1 Ingredients**

All DEMETER CERTIFIED BIODYNAMIC raw materials may be used as ingredients.

#### **8.1.2 Additives**

The use of additives is not permitted.

#### **8.1.3 Processing aids**

- Asbestos free filter material such as paper or cloth
- Non activated diatomaceous earth
- Nitrogen gas (N<sub>2</sub>)
- Citric acid only for removal of mucilage (oil for processing purposes)
- Bentonite (Fullers earth) (oil for processing purposes)
- Activated carbon (oil for processing purposes)

### **8.2 Processing methods**

## 8.2.1 Cold-pressed oils

### 8.2.1.1 Permitted methods

- Mechanical 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 Demeter Association.
- The maximum extraction temperatures for the individual oils are listed below. Lower extraction temperatures are recommended:

Olive oil:	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 labeled as “cold pressed oil from roasted seed”.

### 8.2.1.2 Prohibited 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 color/bleaching
- Chemical modification (hydrogenation, ester modification)

## 8.2.2 Other oils and fats (for baking, frying and further processing)

### 8.2.2.1 Permitted methods

- Mechanical processes for cleaning and preparing the raw materials (including conditioning and drying with heat)
- Mechanical pressing
- Centrifuging, decanting
- Filtering
- Removal of mucilage
- Neutralizing/ Buffering of pH (only once either before or after fractionation)
- Washing
- Vacuum drying
- Bleaching/color removal
- Thermal fractionation (decrystallization/ dry fractionation)
- Steaming/ Deodorizing:

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/ deodorized without temperature limit (once only).

All other oils and fats for processing at low temperatures (under 100° degrees C) can be gently steamed/ deodorized with a maximum temperature of 130° C (once only):

e.g. oils for the production of mayonnaise).

#### **8.2.2.2 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

#### **8.2.3 Animal products**

Rendering is permitted for the processing of animal products.

#### **8.2.4 Labeling**

Requirements in addition to general Demeter Labelling Standards include:

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

#### **8.2.5 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.

##### **Permitted processing methods**

**Emulsification**

**Pasteurisation**

**Crystallization**

## **Section 9: Standards for the production of DEMETER CERTIFIED BIODYNAMIC Sweetening Agents, Confectionary, Ice Cream, and Chocolate**

### **9.1 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

### **9.2 Ingredients**

All DEMETER quality raw products may be used as ingredients.

### **9.3 Sugar**

#### **9.3.1 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  
Sodium carbonate, calcium and sodium hydroxide  
Sulphuric acid (for pH control)

### **9.3.2 Processing methods**

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

## **9.4 Sweetening agents**

### **9.4.1 Processing aids**

Permitted materials are:

Filter-materials made from textiles, paper, cellulose, diatomaceous earth, pearlite, bentonite

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

### **9.4.2 Processing methods**

Plant juice concentrates (see Section 1 Fruit and Vegetable Processing)

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

## **9.5 Ice-cream, sorbets and frozen yogurt**

### **9.5.1 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 in forms allowed by the NOP only.

Inulin and other oligosaccharides of certified organic origin (at a minimum) are permitted

Colorings are not permitted.

## **9.6 Chocolate and other confectionary**

### **9.6.1 Ingredients and processing aids**

Lecithin, at a minimum in form allowed in certified organic production

Goma Arabica

Herbs and spices, Certified Biodynamic or Organic (at a minimum) in compliance with the appropriate labeling category.

## **Section 10: Standards for the Production of DEMETER CERTIFIED BIODYNAMIC Cosmetics and Personal Care Products**



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## 10.1 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 CERTIFIED BIODYNAMIC when available. 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 using the Biodynamic method.

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 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 the Demeter General Processing Standards, Part A, Section 14..

The products may have no ingredients that are genetically modified, or that have been produced using genetic modification techniques. Ionizing radiation is also excluded from all production steps and no materials with particle sizes of less than 100 nanometers may be used (nanotechnology is excluded). Mineral oil is excluded as a starting material.

Processes and ingredients, additives and aids that are permitted in DEMETER CERTIFIED BIODYNAMIC food production may be used in cosmetics 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 CERTIFIED 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) or equivalent national regulation, particularly with regard to their composition, safety, efficacy and labeling.**

The DEMETER CERTIFIED BIODYNAMIC personal care standard recognizes three labeling categories (Section 3.2). Requirements of the DEMETER CERTIFIED BIODYNAMIC ingredient categories to allow prominent labeling using the DEMETER and BIODYNAMIC trademarks, which are additional to the Demeter Association Labeling Standards, are listed below. Products that contain DEMETER CERTIFIED BIODYNAMIC ingredients and meet organic standards approved by the Demeter Association can also use an additional labeling 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 out side the scope.

### **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).

## 10.2 Scope

These standards are to define the production of the following products to be labeled as DEMETER CERTIFIED BIODYNAMIC:

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

Etheric (Essential) oils

Extracts, extracts, and tinctures

Waters & Hydrolates (Hydrosols)

Essential waters

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

## 10.3 Labeling

In addition to the requirements of the Labeling Standards of the Demeter Association the following cosmetic-specific regulations must be met.

### 10.3.1 General Requirements

**10.3.1.1** All ingredients must be individually listed in the ingredients list. The INCI (International Nomenclature Cosmetic Ingredient) system is to be used, and parallel to it, the name of each ingredient listed in an appropriate language.

**10.3.1.2** Mixtures of essential oils may carry one collective name. This collective name can only be labeled DEMETER CERTIFIED 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 CERTIFIED BIODYNAMIC quality, they are to be individually named and labeled.

**10.3.1.3** Certified organic already processed ingredients shall be made from certified ingredients, processed according to this standard.

#### 10.3.1.4 Calculating the percentage of DEMETER CERTIFIED BIODYNAMIC and organic ingredient

The percentage of all DEMETER CERTIFIED BIODYNAMIC and organic ingredients in any DEMETER CERTIFIED BIODYNAMIC labeled 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 CERTIFIED 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 CERTIFIED 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 CERTIFIED 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 labeled using the DEMETER CERTIFIED BIODYNAMIC certification marks must disclose the exact percentage of both “organic” and DEMETER CERTIFIED BIODYNAMIC content in the product.

#### **10.3.1.5 Calculation of water**

Ingredients that have been dehydrated / concentrated (water removed) can have this water added to the ingredient to bring it back to the original composition. The reconstituted ingredient can be calculated fully as DEMETER/BIODYNAMIC or organic ingredient in the formulation. Water added to dried powders and plant material (e.g. to make infusions) is counted solely as added water.

The weight/ volume of hydrolates (hydrosols), applied to the final product formulation as DEMETER CERTIFIED BIODYNAMIC and organic ingredients, cannot exceed the weight/ volume of the raw agricultural ingredient that was distilled to generate the hydrolate.

#### **10.3.1.6 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.

#### **10.3.1.7 Wild harvested ingredients**

Raw materials collected from the wild must be certified to USDA National Organic Program or Demeter certified. 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 organization.

### **10.3.2 Product Labeling Categories (See Demeter Labeling standards)**

#### **10.3.2.1 DEMETER CERTIFIED BIODYNAMIC product (i.e. Demeter Certified Biodynamic Skin Cream)**

In order to use the Demeter Certified Biodynamic labeling category the following conditions must be met:

These standards are met.

The ingredient included in the name is DEMETER CERTIFIED BIODYNAMIC quality.

At least 90% of all ingredients are of agricultural origin and are DEMETER CERTIFIED BIODYNAMIC quality.

The remaining ingredients of agricultural origin may be certified organic if documented unavailable in DEMETER CERTIFIED BIODYNAMIC quality; and

Any remaining ingredients of non-agricultural origin must be listed in Section 6.

The Demeter logo may be used on the primary display panel, conforming to the requirements detailed in the Demeter Association Labeling Standards.

#### **10.3.2.2 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 ingredients included in the name are DEMETER/BIODYNAMIC quality
- The remaining ingredients of agricultural origin may be certified organic if documented 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

**10.3.3.3** 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 labeling does not mislead the consumer into thinking the product as a whole is Demeter/Biodynamic quality. The preconditions are:

- Demeter or Biodynamic may be used only on the back and/or side panels. The product meets an “organic” or “natural” standard approved\* by Demeter International and be labeled 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.

**\* 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 GMOs
- 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 living cells).

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.**

## **10.4. Processing**

### **10.4.1 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, and fermentation.

### **10.4.2 Processing methods by product category**

#### **10.4.2.1 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, neutralization, condensation with the elimination of water, hydration, and sulfatation. The resulting products must be listed in Section 6.8. Steam stripping of oils to product fatty acids e.g. glycerin is permitted.

#### **10.4.2.2 Extracts, extracts and tinctures**

Extracts from DEMETER CERTIFIED BIODYNAMIC plants and animals may be labeled as DEMETER CERTIFIED BIODYNAMIC if:

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

**10.4.2.2.2** The extracts have been produced with no other extracting agents than water, oil, ethyl alcohol, CO<sub>2</sub>, glycerin, fruit vinegar, or mixtures of these substances.

**10.4.2.2.3** Agriculturally based ingredients, including oil, ethyl alcohol, and fruit vinegar need to be DEMETER CERTIFIED BIODYNAMIC and/ or from an approved organic source. The percentages in the final product will define the labeling category.

#### **10.4.2.3 Essential oils and hydrolates (Hydrosols)**

Essential oils are produced using steam distillation, CO<sub>2</sub> extraction, cold pressing, scarification, rectification (i.e. to take sensitizing ingredients out as a vacuum re-distillation only e.g. mint oil), fractional distillation (e.g. ylang, ylang).

Ingredients of certified organic origin, which have been extracted using methods that do not meet these standards, may not be used in products labeled with the DEMETER CERTIFIED BIODYNAMIC trademark (see 3.2.1 and 3.2.2). Extraction agents are listed in 5.3 and 6.6 below.

Hydrolates are produced using steam distillation only.  
Effleurage extraction must use Demeter or certified organic waxes or fats.

#### **10.4.2.4 Soap**

The following requirements apply to soap that is to be labeled as DEMETER CERTIFIED BIODYNAMIC soap:

The raw soap may be produced only from neutral plant fats of DEMETER CERTIFIED 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 limited to sodium and potassium based liquid soaps.

#### **10.4.3 Preservation processes**

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

#### **10.4.4 Environmental Impact Of Processing**

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

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.

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

Packaging materials must meet the requirements of the Demeter Association General Processing Standards (Part A, Section 14).

#### **10.4.5 Non-permitted processes**

This standard explicitly lists all permitted processes. All others are prohibited. This includes the testing of any new DEMETER CERTIFIED BIODYNAMIC product during its development on animals. Ingredients used in DEMETER CERTIFIED BIODYNAMIC products available before 01/01/98 are exempt, as are ingredients tested after 01/01/98 by third parties who have no connection to the licensee.

### **10.5. Ingredients of agricultural origin**

#### **10.5.1 Agricultural ingredients not certified organic at a minimum**

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

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

#### **10.5.2 Plant and animal waxes:**

Uncolored 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 documented. 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.

### **10.5.3 Alcohol**

Ethyl alcohol (C<sub>2</sub>H<sub>5</sub>OH) must be of plant origin and DEMETER CERTIFIED BIODYNAMIC (or certified organic if Demeter Certified Biodynamic is documented to be unavailable – exemption from Demeter Association is required).

Synthetically denatured alcohol is not permitted.

### **10.5.4 Solvents for extraction from raw materials**

All solvents must be DEMETER CERTIFIED BIODYNAMIC. An exemption to use certified organic solvents may be given by the Demeter Association if documentation has been provided that DEMETER CERTIFIED BIODYNAMIC materials are unavailable.

#### **Permitted Solvents**

Alcohol

Fats and oils of plant origin

Glycerin derived from fats or oils of plant origin

Honey

Sugar

Vinegar

## **10.6. Ingredients, additives and aids of non- agricultural origin**

### **10.6.1 General**

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

Potable water

Ingredients of mineral origin: salts (sodium, potassium, calcium and magnesium chlorides and sulfates), 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, and 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 General Processing Standards as permitted for use in Demeter food products.

### **10.6.2 Water**

Pure best quality potable water, spring water, distilled water or dynamized water is preferred.

Water treatment must ensure high water quality. Water may be filtered or softened.

### **10.6.3 Preservatives**

Botanical preservative systems shall be used in preference.

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

### **10.6.4 Enzymes**

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



### 10.6.5 Minerals

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

### 10.6.6 Antioxidants

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

### 10.6.7 Solvents for extraction from raw materials

Additional solvents not of agricultural origin which are permitted are:

CO<sub>2</sub>

Water

### 10.6.8 Fragrances

Synthetic fragrances are not permitted.

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

### 10.6.9 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 Ctrate

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  
Lecithin  
Lanolin  
Polyglyceryl - 3 – Polyricinoleate  
Potassium Cocoate  
Potassium Olivatate  
Potassium Palmitate  
Potassium Stearate  
Potassium Sulfate  
Salicylic acid (for Peeling and Blemish control (Hygiene))  
Sodium Cetearyl Sulfate  
Sodium Cocoate  
Sodium Coco-Sulfate  
Sodium Cocoyl Glutamate  
Sodium Cocoyl Hydrolysed Wheat Protein  
Sodium Gluconate  
Sodium Lauroyl Lactylate  
Sodium Olivatate  
Sodium Palm Kernelate  
Sodium Palmate  
Sodium Stearyl Lactylat  
Sorbic Acids and their salts  
Stearinic Acid  
Stearyl Alcohol  
Sucrose Stearate  
Tocopherol (Vitamin E)  
Triethyl citrate (for Deodorants)  
Vitamins  
Xanthan gum (E415)  
Xylitol (for Toothpaste)  
Zinc oxide (for Sunscreen )

**10.6.10 Other aids and additives:**

Other aids and additives of Demeter Certified Biodynamic or certified organic origin may be used as lubricants, pH adjusting agents, binders etc.

**10.7. 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 EC, 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.

**Essential waters:** Distillation process by which essential oil become miscible in the hydrolate.

**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

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

**Fermentation:** Enzymatic process carried out by microorganisms

**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 from through geological process, but excluding fossil derived materials

**Neutralization:** Adjustment of the pH to neutral

**Preservative:** Substances which prevent the growth of microorganisms, 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 glycerin.

**Scarification:** The process of cutting of 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 glycerin

**Sulfatation:** process to yield a sulfate 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 the Demeter Association.**

**Section 11: Standards for the certification of Textiles from DEMETER CERTIFIED BIODYNAMIC Fibers**

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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.) may be 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

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.

IVN Guidelines (International Natural Textiles Association) – Best-5.0, Sept 2012

## Section 12: DEMETER USA WINEMAKING STANDARDS

### Introduction and underlying philosophy

Critical to the Biodynamic method of farming is a Goethean observation of nature and the application of this view to a farming system. Observation in this manner embraces nature as an interconnected whole, a totality, an organism endowed with archetypal rhythm. Biodynamic farm management understands a vineyard as a self-contained individuality. The farm is managed as a living organism and the grapes that result are very true to the living earth, the light, the warmth and the distinct archetypal rhythms that permeate and form the fruit of the vineyard. The goal of the *Demeter Winemaking Standard* is to allow for wines that can bring this authenticity through in the wine. Please see the *Demeter Farm Standard* for more details on how this is achieved.

Use of Biodynamic grapes in the making of wines is the essential foundation to these guidelines.

Demeter general guidelines/standards for processing, manufacturing and packaging also apply.

### Labeling

**There are two possible DEMETER wine labeling possibilities:**

#### 1) BIODYNAMIC® WINE

The “Biodynamic® wine” category denotes a wine that is made with 100% Biodynamic grapes and is intended to be an undisguised, vintage-based expression of a given vineyard estate. Minimal manipulations are allowed. The wine must be made in a Demeter certified winery and follow the winemaking standards outlined below. A product profile sheet must be filled out for each wine and submitted to Demeter for label approval.

#### 2) MADE WITH BIODYNAMIC® GRAPES WINE

The “Made with Biodynamic® grapes” wine category denotes a wine that is made with 100% Biodynamic grapes, but permits manipulations of the grapes as defined by the National Organic Program (NOP) “Made with Organic grapes” category. This processing standard allows winemakers to express a winemaker’s “style” in crafting wines and also provides an option for “Biodynamic wine” winemakers when the Biodynamic Wine category cannot be achieved due to weather etc. A product profile sheet must be filled out for each wine and submitted to Demeter for label approval.

The certification marks DEMETER and ‘BIODYNAMIC’ must always be used in compliance with the Demeter labeling standard. This standard is available as a separate document.

Labels **must be pre-approved** by the Demeter office before sending in to TTB.

## I. Winemaking Standard For BIODYNAMIC Wines

### 12.1. Harvesting/Crushing and related equipment

**12.1.1** Wine must be comprised of 100% DEMETER CERTIFIED BIODYNAMIC Fruit.

**12.1.2** Observation of the Biodynamic calendar is encouraged as a guide for harvest dates.

**12.1.3** Hand harvesting is preferred. Machine harvesting is allowed, but will need to be justified to the Demeter Association.

**12.1.4** All equipment should be made of material that in no way could compromise juice quality or pose any contamination risk from materials prohibited in the Demeter processing guidelines.

**12.1.5** Sulfur dioxide may be used within certain limitations. See section 12.12 Sulfite Use.

**12.1.6** Pomace and seeds that result must be handled in an ecological manner and ideally returned to the farm organism as appropriate.

**12.1.7** Processing aids of agricultural origin, such as rice hulls, need to come from certified organic or BIODYNAMIC source.

**12.1.8** Pasteurization is not permitted.

**12.1.9** Concentration of must is not permitted.

## **12.2 Tanking/Fermentation**

**12.2.1** Observation of the Biodynamic calendar is encouraged as a guide for cellar work.

**12.2.2** Gases used for flushing tanks and racking cannot present any contamination threat to the wine product with a material prohibited under the general *Demeter Processing Standards*. Commonly accepted gases used are argon, carbon dioxide, and nitrogen (note that argon currently does not appear on the NOP national list and thus use of Argon could effect the organic certification status of a wine).

**12.2.3** Fermentation and storage tanks must be made of materials that do not potentially compromise wine quality or pose a contamination threat from materials prohibited under the Demeter processing standards. Commonly used materials are wood, stainless steel, concrete, porcelain, and clay amphora.

**12.2.4** BIODYNAMIC Wines need to be segregated from non-BIODYNAMIC Wines at all times.

**12.2.5** All transfer must be made utilizing equipment made of food grade material.

**12.2.6** Micro-oxygenation is not permitted.

**12.2.7** Plastic containers are prohibited for use as storage vessels.

**12.2.8** Pumps that develop high shear or centrifugal forces are not permitted in new installations or when replacing machinery.

## **12.3 Yeasts and fermenting agents**

**12.3.1** No imported aromatic yeast or malo-lactic bacteria is permitted. Because of the known availability

of numerous strains of powerful commercial aromatic yeasts that dramatically affect the character of a wine in the direction of the added yeast itself the *Demeter Winemaking Standard* for “Biodynamic Wine” does not allow for the addition of any such yeast into the wine must. The intention is to protect and preserve the subtle flavors of the site and vintage.

In the case of a documented stuck fermentation Demeter will consider, on a case-by-case basis, the use of an imported neutral strain to finish the fermentation. Imported yeast will only be allowed for wines documented to be at 5 brix or less, and cannot be imported only as a preventative measure. The yeast used should be certified organic. Non-organic yeast may be used if it is documented that Biodynamic and certified organic strains of the appropriate yeast are not available. If non-organic yeast is used it must be documented as non-GMO, non-synthetic and not grown on petro-chemical substrate or sulfite waste liquor. Please refer to the Rescue Yeast Culture Approval Form that is an Appendix 1 to this *Standard*.

In the case of sparkling wines yeast can be used as with a stuck fermentation.

#### **12.3.2** No pasteurization permitted on juice

**12.3.3** Approved yeast nutrients are permitted for use during fermentation. No form of DAP is allowed. Yeast nutrients are reviewed on a case-by-case basis based on a full ingredient declaration for the yeast nutrient product to be used. In general those permitted in certified organic processing are allowed such as products shown to be comprised of yeast hulls, yeast extract etc. resulting from non-synthetic, non GMO yeast that is not grown on petro-chemical substrate or sulfite waste liquor.

#### **12.4** Acid and sugar adjustment

Acid and sugar adjustment is not permitted. . Sugar adjustment is not permitted except for sparkling wines requiring a secondary fermentation. Maximum increase in alcohol through secondary fermentation 1.5 %.

#### **12.5** Processing Additives

**12.5.1** Bentonite is allowed for settling and protein stability

**12.5.2** BIODYNAMIC or organic egg whites, milk or casein are allowed for tannin fining

**12.5.3** All other processing additives are not permitted (enzymes, tannin, casein, silica dioxide, isinglass, blood, gelatin, gum arabic, carbon, copper sulfate, etc.)

#### **12.6** Oak Aging

In general, oak character should not overpower the wine. Only oak barrels, pure oak staves, and dust are permitted. If staves or dust are used it must be documented that they are 100% oak with no other additives or treatments used.

#### **12.7** Cold Stabilization

**12.7.1** Wines can be cold stabilized using chilling to -4°C (25F) only.

**12.7.2** Electro dialysis is not permitted for cold stabilization.

## 12.8 Filtering

The following types of filtration are permitted:

- 1) Cellulose fibers (chlorine free)
- 2) Textile (chlorine free)
- 3) Diatomaceous earth
- 4) Polypropylene
- 5) Bentonite
- 6) Cartridge filters (containing permitted materials above)

## 12.9 Blending

**12.9.1** Blended juices/wines can only be from blocks of a given vineyard estate. Blended juices/wines must be from the same vintage.

**12.9.2** For fortified wines (Port) the fortifying alcohol must be DEMETER CERTIFIED BIODYNAMIC and also the result of grapes/wines that meet 9a above.

## 12.10 Bottling

**12.10.1** Bottling equipment product contact surfaces must be free of prohibited materials, such as sanitizer residue.

**12.10.2** Alternative bottling materials such as tetra packs and bag in the box are not permitted.

## 12.11 Corking and sealing

**12.11.1** Corks and sealing must be free of residue of materials prohibited by *Demeter Processing Standards*.

**12.11.2** Natural corks, screw caps, glass are permitted for closures. Synthetic corks will be reviewed on a case-by-case basis. It must be shown that the cork material does not present a contamination risk of the wine. It also must be shown that the corks can easily be recycled.

## 12.12 Sulfite use

Total maximum measured sulfites at bottling cannot exceed 100 ppm. **The following forms are permitted :**

- **Pure SO<sub>2</sub>, as a gas or in solution**
- **Potassium bisulfite**
- **Potassium metabisulfite**

**Effervescent tablets are not permitted**

## 12.13 Equipment cleaning and sterilization

**12.13.1** If cleaning and sanitizing materials are used their use must be followed with a clean water rinse and it must be documented that cleaner/sanitizer residual does not remain on equipment when certified product/ingredient comes in contact with it.

**12.13.2** Quaternary ammonia and other highly residual sanitizers may not be used prior to use of equipment for certified product.

## 12.14 Records

**12.14.1** Records must be maintained that track the lot number of a given bottling back through all stages to the vineyard source. Examples of such records include grape scale tickets, processing logs, sanitation logs, pest control logs, bottling logs, sales records, and inventory records.



**12.14.2** Each barrel or tank should have identification and an information document that identifies contents by source, variety, vintage.

**12.15 Omissions**

The addition of any material or method not mentioned is not permitted unless first cleared with the Demeter Association.

**12.16 The General Guidelines of the Demeter Processing Standards (section A1-23) must be met.**

**II: Winemaking Standard For Made With BIODYNAMIC Grapes Wines**

Wine must be verified to be made to the “Made With Organic Grapes” category of the USDA National Organic Program (NOP) with the following additions:

- 1) The wine must contain 100% Demeter Biodynamic® grapes. Agricultural additives and processing aids such as eggs, milk, and sweeteners, must be certified organic at a minimum.
- 2) The wine must be made at a Demeter certified winery and a product profile sheet must be filled out for each wine and submitted to Demeter, along with the draft label to be used, for approval.
- 3) The General Guidelines of the Demeter Processing Standards (section A 1-24) must be met.
- 4) Organic yeast should be used if available.

**Section 13: Standards for the Making of Beer**

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- 5 Pest control

## 6 Labeling

### Scope

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

#### **13.1. 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. 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 preprepared products).

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

##### **13.1.1 Brewing cereals**

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

##### **13.1.2 Hops**

Unprocessed natural hop flowers has to be favoured. Type 90 pelletized 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 Demeter US to use certified organic hops. The use of conventionally produced hops is prohibited.

##### **13.1.3 Yeast and Lactic Bacteria**

Organic yeast may be brought in or obtained from organic breweries. Conventionally produced yeast may only be brought in 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. The yeast may be washed only in water of brewing quality.

Lactic bacteria may be used for lactic fermentation to produce Demeter speciality beers. This use of lactic bacteria is to be declared on the label.

##### **13.1.4 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.

###### **13.1.4.1 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, sterilization of dirty water in particular with UV radiation, ozone, hypochlorite, chlorine dioxide.

### 13.1.5 Processing Aids

The following processing aids are permitted:

- Filter materials made from textiles (e.g. cottonwool), Membranes (without PVC, PVPP, Asbestos and Bentonite)
- Diatomaceous earth as a Filtering aid
- Sodium carbonate for softening water
- Brewing gypsum
- Fermentation carbon dioxide, and CO<sub>2</sub> may be used solely to temper the barrels and for filling
- Nitrogen gas

### 13.1.6 Additives

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

## 13.2. 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).

### 13.2.1 Processing Procedures

#### 13.2.1.1 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

#### 13.2.1.2 The brewing process

When boiling the wort, no hops lees may be reused, and the addition of residues of beer (residue beer) is prohibited. 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 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 color using beer colorings, is not allowed.

### 13.2.1.3 Preservatives

Cleanliness during production is the most important starting point for shelf life of the product (see the chapter on “Cleaning of facilities”).

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 microorganisms are not allowed, as they diminish taste and act as preservatives.

Beers with an 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).**

### 13.2.2 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

### 13.3. Packaging

The principles of packaging are regulated in the “Standards for Packaging of Processed Demeter Products”. Packaging materials are to be chosen considering the maintenance of product quality and the minimization of environmental impacts.

Beer is to be packed exclusively in recyclable glass bottles, or multiple-use 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.

### 13.4. Cleaning of facilities

Regulations governing cleaning are contained in the section “Standards for disinfection and cleaning in

Demeter processing facilities“ (not yet written). 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 (H<sub>2</sub>O<sub>2</sub>) or peracetic acid can be used.

### 13.5. Pest control

Breweries and farmer who brew beer must follow the current version of the “Standards for pest control in storage and factory areas“.

### 13.6. Labeling

Labeling of the beer is regulated in the currently valid version of the “Standards for the labeling of Demeter Products“.

## Section 14: Standards for the Making of Distilled Alcohol/Spirits

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### 14.1 Labeling

Labeling of alcohol, and products using Demeter alcohol as an ingredient are defined in the Demeter USA Labeling Standard.

### 14.2 Ingredients

#### 14.2.1 Ingredients of agricultural origin

Raw materials for distillation must be in certified Demeter Biodynamic quality, e.g. grains, fruit juices 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 9 of

the Demeter Processing Standards. Fruit juice concentrates must meet Section I of the same standard in addition. Incoming raw materials are to be stored in containers cleaned for the purpose that are unambiguously labeled.

#### **14.2.2 Ingredients of non-agricultural origin**

The yeast used must be documented to be non-GMO, non-synthetic and not grown on petrochemical substrate or sulfite waste liquor.

**14.2.3** 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 etc.

### **14.3 Processing methods**

#### **14.3.1 Processing of the raw material**

**14.3.1.1** Before processing begins, all vessels must be cleaned, and piping must be purged.

**14.3.1.2** The raw material (molasses or sugar containing juice) may be diluted with potable water.

**14.3.1.3** Fermentation shall occur under anaerobic conditions to produce alcohol.

**14.3.1.4** 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.

**14.3.1.5** Fractional steam distillation yields ethyl alcohol of 96 proof. This may occur in several steps.

**14.3.1.6** Storage of the finished product must be in clearly identified, suitable containers. Ethanol 96% proof for use as an ingredient in food must be stored in stainless steel or glass, non-food use may be stored in plastic. Other materials require approval.

#### **14.3.2 Separation, purging and flushing protocol**

See General section Part A

### **14.4 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).

## **Section 15: Standards for the certification of DEMETER BIODYNAMIC Cider and Fruit Wines**

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## 15.1 Scope

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

## 15.2 Ingredients

### 15.2.1 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.

### 15.2.2 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.

### 15.2.3 Other ingredients, additives and processing aids

- Metabisulphite (E224), SO<sub>2</sub> (E220)
- Demeter, or if unavailable, certified organic sugar to a maximum of 10%.

## 15.3 Processing methods

### 15.3.1 Processing of the raw material

**15.3.1.1** The fruit is to be cleaned in potable water and crushed.

**15.3.1.2** The crushed fruit is to be pressed in a gentle manner. Centrifuges are not permitted.

**15.3.1.3** Fermentation shall occur in stainless steel tanks, wooden or polyethylene barrels to produce the fruit wines.

**15.3.1.4** Storage of the finished product must be in clearly identified containers that do not influence the quality of their contents.

## 15.4 Packing

**15.4.1** 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.

**15.4.2** The following packaging is allowed:

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

Containers made from plastic or aluminum are not permitted.

**15.4.3** Bottle tops must have sealing elements that do not contain PVC.

### **15.5 Cleaning of facilities**

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 8.2.2.4, and their use documented. Flushing with potable water is required following the use of any cleaner.

### **15.6 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

## **Section 16: Standards for the certification of DEMETER/BIODYNAMIC Infant Milk Formula**

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### **16.1 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

### **16.2 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.



### **16.3 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

### **16.4 Aids and additives**

(All aids and additives used must be listed in Section 5.3, 5.4 and 5.5)

- 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.

### **16.5 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.

### **16.6 Labeling**

The labeling shall meet the Demeter Labeling standards, including the table in section.

### **16.7 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.

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

**Table 1 List of the allowable types of sugar and salt**

**Sugar type**

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

**Salt type**

Sea salt, rock salt or refined salt without the addition of iodine or fluorine      FV, NS; BB, G, HS, MS, MI

Salt may contain Calcium Carbonate or magnesium carbonate as an anti caking or free flowing agent. For other anti caking or free flowing agents a written approval by Demeter Association 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.

**Table 2 List of allowable additives and processing aids**

Additive/processing aid	Product group*	Restriction/note
Calciumcarbonat CaCO <sub>3</sub>	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 <sub>2</sub>	All	As inert gas/processing aid for all product groups.
Nitrogen N <sub>2</sub>	All	As inert gas/processing aid for all product groups.
Argon Ar	All	As inert gas/processing aid for all product groups.
Ozone O <sub>3</sub>		Limited to treatment of cool store atmospheres; not to be used on products.
Lecithin	S, Oil, COS	In organic quality
Citric acid C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>	OIL	only for removal of mucilage
	S	Clarification (hydrolysis of starch)
	A, COS	
Sodium citrate C <sub>6</sub> H <sub>5</sub> Na <sub>3</sub> O <sub>7</sub>	MS	Only for scalded sausage if it is not possible to process the meat warm.
Tartaric acid C <sub>4</sub> H <sub>6</sub> O <sub>6</sub>	W	Acidity regulation, processing aid
Potassium bitartrate KC <sub>4</sub> H <sub>5</sub> O <sub>6</sub>	W	Tartar stabilisation
Agar-Agar	FV, S, G	Only for spreads based on fruit and sweet milk products e.g. ice-cream
	MI	Only for puddings
Guar gum	All	
Gum arabic	S	
Pectin	BB, MI, FV	
Tartaric acid baking powder (KHCO <sub>3</sub> / NaHCO <sub>3</sub> / C <sub>4</sub> H <sub>6</sub> O <sub>6</sub> / KC <sub>4</sub> H <sub>5</sub> O <sub>6</sub> /NaC <sub>4</sub> H <sub>5</sub> O <sub>6</sub> )	BB	Sodium or Potassium bicarbonate, with Tartaric acid, sodium or potassium tartrate in any combination); Grain starch is the only permitted carrier.
Sodium bicarbonate NaHCO <sub>3</sub>	S	
Potassium bicarbonate KHCO <sub>3</sub>	W	Acidity regulation

Additive/processing aid	Product group*	Restriction/note
Potassium carbonate K <sub>2</sub> CO <sub>3</sub>	BB	Gingerbread only
Sodium carbonate Na <sub>2</sub> CO <sub>3</sub>	B	Softening water for brewing
	S	Sugar production
Calcium sulphate CaSO <sub>4</sub>	B, G	Grain products – tofu production
Magnesium Chloride	G	Tofu production
Sodium hydroxide (lye) NaOH	BB	Lye bakery products only
	S	Sugar production
	G	To adjust the pH in the production of starch
	COS	Soap production
Potassium hydroxide KOH	COS	Soap production
	S	
Lime water/Calcium hydroxide Ca(OH) <sub>2</sub>	S	Sugar production
Calcium Chloride CaCl <sub>2</sub>	MI	Only for cheese production
Carbonic acid H <sub>2</sub> CO <sub>3</sub>	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, magnesium 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	As ingredient, listed on label
'Native' Starch, pre-gelatinised starch	All	At least organic quality
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. Must be organic at a minimum
Bees wax Carnauba wax Vegetable oil	BB	Non-stick agents. Organic at a minimum

Additive/processing aid	Product group*	Restriction/note
Rennet	MI	
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	MI, BB, MS, FV, G	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	No preservatives and not from GE micro-organisms Enzymes can be used for pressing and clarification of juices.
	S	Enzymes can be used for the production of sugar and sweeteners. 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: <ul style="list-style-type: none"> <li>- GMO-free</li> <li>- Free from preservatives (an exemption can be approved, based on a non-availability declaration by 3 suppliers).</li> </ul>
Yeast	BB, W, A, B	GMO free
Oil	S	To prevent foaming
	FV	As non-stick agents for dried fruit and vegetables
Filter materials	FV, Oil	Asbestos free, Chlorine free
Diatomaceous earth	FV	Only with approval
	W	Fining und Filtration
	Oil	Non-activated
	S	
	B	
Perlite	FV	To eliminate proteins

<b>Additive/processing aid</b>	<b>Product group*</b>	<b>Restriction/note</b>
	<b>S</b>	
	<b>W</b>	<b>Filtration</b>
<b>Bentonite</b>	<b>FV</b>	<b>To eliminate proteins</b>
	<b>W</b>	<b>Fining and Filtration</b>
	<b>Oil</b>	
	<b>S</b>	<b>Filtration of sweetening agents</b>
<b>Aktive charcoal</b>	<b>Oil</b>	
	<b>S</b>	
	<b>W</b>	
<b>Tannic acid</b>	<b>S</b>	<b>Natural origin</b>
	<b>A</b>	
<b>Organic ester sucrose</b>	<b>S</b>	<b>Organic quality</b>
<b>Sulphuric acid</b>	<b>S</b>	<b>pH control in sugar production</b>
<b>Inulin and other oligosaccharides</b>	<b>S</b>	<b>In Organic quality only for ice-cream</b>

**Appendix 1**

**Rescue Yeast Culture Approval Form**

Instructions: If exemption for the use of a neutral yeast culture to finish a wine in the Biodynamic Wine labeling category is requested this form needs to be filled out and submitted to the Demeter office along with the requested attachments.

<b>Winery</b>	_____
<b>Date</b>	_____
<b>Variety</b>	_____
<b>Appellation</b>	_____
<b>Brix at Harvest</b>	_____
<b>Brix level now</b>	_____
<b>Brix change over past few days</b>	_____
<b>Total YANC at Harvest (if applicable)</b>	_____
<b>Yeast nutrient used &amp; rate (#/Kgal)</b>	_____

**Please attach a copy of the fermentation log (brix and temp) for the stuck fermentation.**

**Please attach documentation that the yeast requested for use is non-GMO, non –synthetic and not grown on petro-chemical substrate or sulfite waste liquor.**

**Reasons for why you think the stuck fermentation occurred:**

**Winery Contact Info:**

Winemaker	_____
Phone Number	_____
Fax Number	_____

