



# **PROCESSING**

# **STANDARDS**

**Passed in Sabaudia, Italy, on June 25th 1999**

**Revised June 2007**

**to be implemented by each member country by the 1<sup>st</sup> July 2008**

**Demeter International e.V.**

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## Introduction

The DEMETER processing Standards describe the framework inside which DEMETER products are subject to processes, which maintain value and which are continually being improved. They provide a legal basis, equally binding on all contracted parties, to assure the quality and integrity of DEMETER products.

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

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

The DEMETER Standards should not only limit and exclude. They consciously attempt to ensure that definite processing qualities are included. In the end, the point is that every processor must be able to act responsibly from his own knowledge, based on the following Standards. Each individual can thank the greater Biodynamic activity for a part of his existence and success, and each local act, even when unseen, contributes to the wider community. Therefore everyone should at all times act in such a way that the trust of the consumer in the Biodynamic method and in DEMETER products is confirmed and justified. In the long term the consumer's experience of the dependable, first class quality of DEMETER products is the best and most important advertising.

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

## Principles of Processing

**DEMETER products are grown according to the standards for Biodynamic agriculture, further processed to the DEMETER processing standards and inspected and certified by the responsible authority in the respective countries**

### 1. Aim

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

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

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

### 2. Basis

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

### 3. Processing

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

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

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

### 4. Assessment of DEMETER food

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

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

### 5. Description of the product

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

### 6. Ecological considerations

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

## Part A

### General Rules and Standards

#### 1. Directions for Use

##### 1.1 General

The International DEMETER Processing Standards have been ratified by the Members' Assembly of DEMETER International inc. on June 25<sup>th</sup> 1999 in Sabaudia, Italy. They are compulsory for each member of all countries of DEMETER International.

These standards are in addition to the respective legal requirements for organic products. For exports to the EU-countries please comply with EU regulation 2092/91.

##### 1.2 Jurisdiction

The International DEMETER Processing Standards are the basis for the national processing standards in each country. They are valid for all processors and traders who produce or trade in DEMETER products. The DEMETER organisation in each country is responsible for the licence contracts for the DEMETER trademark. The DEMETER Organisations are the contracting party of all companies registered in their country.

All use of the registered name and logo without contract with the DEMETER organisation responsible for that country is forbidden and will result in prosecution.

##### 1.3 Implementation in each Country

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

The DEMETER Processing Standards are minimum standards, exemptions are handled as follows:

- 4 On the basis of a well-founded application by a country the Members Assembly can grant an exemption to a particular point of these standards. This exemption is valid for a maximum of two years and for the applying country only.
- 5 Copies of all exemptions granted by the countries' DEMETER organisations to processors and dealers are to be sent to the secretary of DEMETER International on April 30<sup>th</sup>. The secretary will send them to the Accreditation Counsel.
- 6 The exemptions having been granted by the countries' DEMETER organisations are discussed by the Accreditation Counsel. Its report with a detailed list of all exemptions is to be sent at the latest 3 weeks before the members meeting to all countries, either by fax or by email.

##### 1.4 Binding nature of the International DEMETER Processing Standards

The international DEMETER standards provide a minimum framework of rules which products must meet in order to use the DEMETER trademark. The national processing standards may be more stringent; they are the basis for certification.

## **2. Composition and form of products using DEMETER ingredients**

### **2.1 General**

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

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

### **2.2 Origin of the raw materials and aids or additives**

Fundamentally only agricultural products (including animals) which originate from Biodynamic farms which have a contract with the DEMETER organisation in their country, and Demeter certified additives and aids may be used for processing or further processing. If the product, aid or additive is not available in DEMETER quality, the following priorities must be observed:

- products inspected and certified by recognised organic certification bodies.
- products inspected and certified to EU-2092/91 or other valid organic laws
- uncertified products listed in Appendix VI c of EU-2092/91 or other valid organic laws

### **2.3 Partially processed products**

If partially processed products are used as ingredients, they may contain no additives that are disallowed in the DEMETER standards. They may be produced using only those processing aids that are allowed in the DEMETER standards. The maximum amount of conventional ingredients (i.e. those not allowed under these standards), which may be included is governed by EU-2092/91 Appendix VI or other valid organic laws.

### **2.4 Labelling** (For details see the labelling section on page 17)

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

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

### **3. Quality Assurance**

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

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

#### **3.1 Processing**

If a business produces conventional and/or organic products as well as DEMETER products then the machinery must be adequately cleaned after every production run. Precautions must be taken to ensure that mix ups are not possible. As a rule the DEMETER production run should precede the organic run which should precede the conventional one.

#### **3.2 Storage**

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

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

#### **3.3 Product flow and documentation in the business**

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

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

#### **3.4 Statutory Health Department Requirements**

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

### **4. Application for New Products, and the Approval Process**

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

## 5. Regulation of Processes and Ingredients

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

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

### 5.1 Procedures expressly prohibited on DEMETER products

- Irradiation with ionising radiation of DEMETER food or ingredients for DEMETER products
- Production of DEMETER products with the aid of genetically modified plants and animals, or using additives/processing aids that result from genetically manipulated organisms or from derivatives of such organisms.
- Fumigation of DEMETER products to prevent sprouting, or for pest control, or the use of fumigated ingredients in the production of DEMETER products (Exceptions are the use of CO<sub>2</sub> or N<sub>2</sub> )
- Treatment of DEMETER products with microwaves

### 5.2. Regulation for the use of flavourings

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

### 5.3. List of allowable additives for DEMETER products (Food and Cosmetics)

In generally it is necessary to use the additives according the described priority (see chapter A, 2.2 origin of raw materials).

Additive	Product Group*	Restriction/Note
E 170 Calcium Carbonate	MI	Only for sour milk cheese
	HS, BB, MS, FV	Free flowing agent
E 509 Calcium Chloride	MI	Only for cheese production
Tartaric acid baking powder	BB	Grain starch is the only allowable carrier.
E 406 Agar-Agar	BB FV MI	Only for spreads Only for puddings
E 410 Carob bean gum	MI FV	
E 412 guar gum	MI	only for ice cream
E 440a Pectin	BB MI FV	Without Phosphate, Calcium sulphate refined sugar or SO <sub>2</sub>
E 501 Potassium Carbonate	BB	Gingerbread only
E 524 Sodium Hydroxide	BB	Lye bakery products only
	COS	Saponification
Gelatine	BB	For the preparation of yoghurt, cottage cheese and cream
Starch	FV MI	only for puddings
Smoke	MI MS	From native, untreated wood e.g. Juniper, conifer
E 525 Potassium Hydroxide	COS	Saponification
Cetyl Alcohol	COS	max. 3%

\*Product groups:

- BB Bread and Bakery
- MI Milk
- MS Meat and Sausage
- FV Fruit and Vegetables
- HS Herbs and Spices
- COS Cosmetics

#### 5.4. List of allowable processing aids for DEMETER products (food and cosmetics)

Processing Aid	Product Group	Restriction/note
Non-stick agents Beeswax Carnauba wax Vegetable oils	BB	
Rennet	MI	Also chemically preserved
Coatings <i>uncoloured</i> Beeswax paraffin wax Microcrystalline waxes	MI	Cheese only (without additives such as Natural hard short chain polyolefin), polysobutylen, butyl or cyclic rubber. Cheese wax may not be coloured
Plastic films	MI	As a coating on cheese (may not contain fungicides)
Lactic acid	MS	To treat natural casings
Starters cultures	MS MI FV BB	Not genetically modified  For sourdough
E 290 Carbon dioxide E 941 Nitrogen E938 Argon		All three inert gasses approved as processing aids
Lime water	S	to remove unwanted materials
Tannic acid	S	from natural sources
Organic ester sucrose	S	
Enzymes	FV, S	No chemically preserved enzymes  For use only in difficult pressings, also in dried form (not genetically modified)
Filter materials	FV	No materials containing asbestos
Diatomaceous earth	FV	Only with special Permission
Carbon filter	S	to fine concentrated agave juice
Gelatine	FV	Only with special Permission
Bentonite	FV, OIL	Only with special Permission, for oil only  for removal mucilage
Alum	FV	to stop the latex flow from the cut surface of  banana hand
Citric acid	COS, OIL	only for removal mucilage (oils)
Magnesium Silicate	OIL	Citrus-olive oil-only with special permission

## \*Product groups:

BB	Bread and Bakery	FV	Fruit and Vegetables
MI	Milk	MS	Meat and Sausage
HS	Herbs and Spices	S	Sweetening agents
OIL	Oil	COS	Cosmetics

**5.5. List of the allowable types of sugar and salt**

<b>Sugar type</b>	<b>Product Group</b>
Table (no manufacturing) honey	FV, NS, BB, G, MS, MI
Whole cane sugar	FV, NS, BB, G, HS, MS, MI
Raw sugar	FV, NS, BB, G, HS, MS, MI
Maple syrup	FV, NS, BB, G, MS, MI
Fruit juices	FV, NS
Concentrated fruit juices	FV, NS, BB, G, MI
Agave juice concentrate	FV, NS, BB, G, MI
Jerusalem artichoke syrup	FV, NS, BB, G, MI
Malt extract, malt syrup	FV, NS, BB, G
Grain and starch sugars	FV, G, MS
Saccharose, even bio-quality, should be avoided and wherever possible be replaced by the above mentioned sugar types.	FV
<b>Salt type</b>	
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 as an anti caking or free flowing agent. For other anti caking or free flowing agents a written approval by the respective organisation is necessary. It has to be substantiated that it is impossible to use salt with Calcium Carbonate or without anti caking in the specific production process.

*Product groups:	BB	Bread and Bakery
	MI	Milk
	MS	Meat and Sausage
	FV	Fruit and Vegetables
	HS	Herbs and Spices
	G	Grain products
	NS	Nut butters and spreads

## 6. Packaging and packing materials

Today the packaging from food poses a serious environmental threat not only because of the huge volume of material but also because of the types of material in use. They are generally not recyclable, set free serious contaminants if they are burnt or, if put into a landfill, pollute the ground water in the long term.

Therefore environmental requirements should be prioritised when marketing decisions are being made (rubbish reduction ahead of rubbish recycling).

The amount of packaging should be limited to that necessary to meet hygiene requirements, and to maintain the sense perceptible qualities of the product.

If possible, the packaging material is to be made from recyclable/renewable raw materials (glass, paper back, recycling PET, a.s.o.) Large volume packaging or excessive packaging is to be avoided.

Not allowed are:

- PVC and other chlorinated synthetics
- aluminium cans
- aluminium-synthetic-laminatefoil

The responsible country organisations may allow the use of metal steamed materials and in well founded cases give an exemption for the temporary use of aluminium caps.

Exceptional cases in which other packaging materials may be used:

- tinfoil cans for oil and fats
- aluminium tubes for mayonnaise and mustard

## 7. Changes to existing rules

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

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

## 8. Standards for pest control

### 8.1 Basis and jurisdiction

The jurisdiction of these standards extends to the storage and work areas of the processing business as well as to the product stored there.

The basis underlying the standards is the general food hygiene regulations of the respective countries. Each business must have a well thought out, and well functioning hygiene programme.

### 8.2. Preventative measures

Preventative measures have absolute priority over all types of control. The following recommendations may be helpful:

#### 8.2.1 Remove constructional weak points

Work and storage areas should be checked for weak points, and these removed as far as possible. Examples of such weaknesses are cracks and cavities that provide refuge for pests or encourage their multiplication:

- Roof and Rafter Construction (Cavities, cracks, etc)
- Roof Linings (Joins, cracks )
- Wall Linings (Cavities, flaking paint)
- Pipework (Source of warmth, condensation)
- Drains
- Insulation
- Ventilation and Cooling Systems (Seals, points of entry through walls)
- Walls that meet the floor at a right angle (Covings facilitate cleaning)
- Blind corners and Cavities (In walls and plaster)
- Doors that do not close tightly from neighbouring rooms or other floors.
- Shelving (Corners, connection to the walls and floor)
- Machines, Boxes and Cartons (Potential hiding places)
- Refuse, Dust, Dirt

In addition the following measures are recommended:

- Fly screens on all opening windows (Mesh size 1-2mm) Screens on all other wall openings.
- Sealing of service and ventilation shafts (If possible without the use of foam or fibreglass).

#### 8.2.2. Organisational measures

When organising the working procedures, all points should be considered which help prevent pest problems. Pay special attention to these areas:

- Removal of rubbish
- Cleaning and cleanliness of the workplace
- Tidiness in the storage rooms, avoidance of corners that are difficult to clean
- Pallet storage of the product so that inspection for pests and cleaning is possible underneath. If required all arriving goods can be re-palleted
- Temperature control in the storage areas to prevent the multiplication of pests

#### 8.2.2.1 Measures for putting newly arrived goods into storage

- Thoroughly clean all containers, silos and machines (e.g. with brooms, vacuum cleaners, compressed air, water blasting).
- Maintain tidiness in the storage rooms and avoid corners that are difficult to clean
- Store goods whenever possible so that pest infestation inspections are easily carried out
- If possible arrange quarantine for newly arriving goods
- Examine the arriving raw materials for pests
- Heat treatment

#### 8.2.2.2 Measures for detecting insect attack

Visual inspection is the simplest method to detect pest attack. Insect traps such as sticky papers, grain probes, light or pheromone traps give additional information about the type and intensity of the attack and also help in monitoring the premises.

Areas adjacent to the storage such as kitchens, cafeterias, changing and living rooms can be places where insects multiply and so must be monitored too.

The following measures are recommended:

- In the case of a suspected beetle infestation small amounts of the grain can be sieved. Observation while shovelling may also detect insect presence.
- If grain has suffered from grain beetle damage, the damaged grains will float when a sample is placed in water.
- When a grain beetle infested sack of grain is opened and stood in the light for an hour the beetles will be found crawling up the sack side.
- Night inspections, with a torch that illuminates a dark room, will detect hopping insects.
- Insect traps (Sticky papers, grain probes, light and pheromone traps)
- Larva detection microphones, which pick up the sound of feeding
- Temperature monitoring of grain silos

#### 8.2.2.3. Prophylactic measures and detection equipment:

- Thermal measures (Cooling, blast freezing, - temperatures above 45 degrees and below –20 degrees C) kill insects, their eggs and larva.
- UV traps (for use in closed rooms)
- Sticky papers (only sensible in dust-free environments)
- Pheromone traps
- Particular care in the choice of packaging materials
- Design the areas surrounding the work place such that no pests can multiply unduly
- Carbon dioxide and nitrogen
- Use of strong air movement

#### 8.2.2.4 Cleaning measures

If an infestation is discovered early enough, more stringent cleaning procedures may frequently be sufficient to solve the problem, particularly if the source is discovered early enough and can be eliminated. The success of the cleaning presupposes that a cleaning method suited to the problem is chosen e.g. vacuum cleaner, water blaster.

- Cleaning with (a lot of) hot water
- Use of brooms, vacuum cleaners, compressed air, etc.

### 8.3 Control Measures in acute cases

If the prophylactic measures which are required to be used in the first instance (see section 8.2) are not sufficient, and other control measures become necessary, then physical methods are to be used in preference to chemical ones (see section 8.3.4 below). As a rule, when using chemical agents, only empty rooms may be treated. Any DEMETER products are to be removed in advance.

The success of any treatment is to be evaluated (e.g. using sticky papers, pheromone traps – see section 8.2.2.2) and recorded in writing.

#### 8.3.1 Control of insects

- Use pheromone traps for monitoring
- Natural oils have a repelling effect (Citrus, linseed)
- Use of diatomaceous earth
- If the areas are suitable, thermal treatment is preferable: Pallets can be put in the freezer for two to four days, or if possible the storage spaces could be heated to 45 degrees C for two to three days.
- Use of Pyrethrum (Restrictions listed in 8.3.4.). Flying insects can be sprayed with an approved pyrethrum product in the empty rooms using an electric hot or cold mister. If beetles are present or suspected, overlapping sprays should be used on the lower regions. Good ventilation is required afterwards. This can be augmented with compressed air or vacuuming.

##### 8.3.1.1 Treating empty rooms

- Thermal measures (Cooling, blast freezing, heat with subsequent cleaning)
- Pyrethrum (Restriction listed in 8.3.4)

##### 8.3.1.2. Treating affected products

- Sieving or beating
- Pressure with subsequent cleaning
- Thermal measures (Cooling, blast freezing, heat with subsequent cleaning)
- Inert gas treatment e.g. with nitrogen or carbon dioxide with subsequent cleaning

#### 8.3.2. Control of Rodents

- Animal oils (only in rooms in which no food is stored), or ultra sound generators will repel rodents.
- Approved traps are:  
Live catch traps and mechanical kill traps
- Anti-coagulant poison baits in covered, solid bait boxes  
(in order to prevent carrying off ), as paste

#### 8.3.3. Allowable mechanical and physical methods

- All types of traps
- Ultra sound generators
- UV attraction traps (These are also useful for monitoring, see section 8.2.2.3)
- Temperature (Heat and cold)
- Pressure

#### 8.3.4. Allowable chemical methods

- Plant based repellents
- Pheromones (These are also useful for monitoring)
- Pyrethrum preparations without synthetic chemical synergists e.g. Piperonyl butoxide (natural synergists such as etheric oils are allowed). In countries where no Pyrethrum preparations without Piperonyl butoxide (PBO) are registered for use in storage, the respective organisation can give an exemption.

#### 8.4. Treatment protocol

A protocol of every control measure employed, especially those described in sections 8.3.1.1, 8.3.1.2, and 8.3.2 must be prepared. It shall contain:

- Date of the treatment
- An exact description of the material used (Trade name, amount used)
- A precise description of the method (Where used, position of the bait stations etc)
- The product safety description sheets for the materials used (obtain from the supplier)
- Success of the measure (see section 8.2.2.2)

#### 8.5. Special conditions

The safety of man and animal requires special attention with every control measure undertaken.

It must be guaranteed that the food items do not come into contact with the control agents, pyrethrum included (see section 8.3). The control measures should be employed just before the weekend so as to allow a longer period of ventilation. If professional pest destruction personnel are employed, they must be able to show that their firm holds the appropriate registration certificate. The DEMETER contract holder must get a written agreement from the pest destruction firm that they will adhere to these standards. This requirement serves to protect the contract holder since they are responsible for this adherence.

Other control measures, or measures legally prescribed by the authorities, that do not meet the requirements of these standards, must be communicated to the DEMETER organisation responsible for that country. The measures may be carried out only after agreement from this authority has been given.

**Part B****I****Standards for the certification of  
DEMETER fruit and vegetable products,  
including potatoes and potato products****Table of contents**

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## **3. Fruit vinegar's, tomato paste, horse radish preparations**

3.1. Fruit vinegar

3.2 Tomato paste

3.3 Horse radish preparations

## 1. Fruit (in principle all DEMETER fruit can be used)

### 1.1 Storage of the fruit

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

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

#### 1.1.1 Ripening of bananas

Ethylene can be used for the ripening of bananas.

### 1.2 Ingredients and additives

#### 1.2.1 Ingredients

All DEMETER raw materials can be used as ingredients.

##### 1.2.1.1. Sweeteners as described in table 5.4 Part A.

#### 1.2.2 Additives and technical aids

##### 1.2.2.1 Additives

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

##### 1.2.2.2 Technical aids

The following are permitted:

- 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 the respective DEMETER organisation:

- Diatomaceous earth for filtering
- Food grade gelatine for cosmetic reasons

- Bentonite for eliminating proteins

### **1.3. Processing methods according to product groups**

#### 1.3.1. Preparation

##### 1.3.1.1. Washing of fruit

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

##### 1.3.1.2. Chopping of fruit

Chopping of fruit is done mechanically.

#### 1.3.2. Preserving of fruit

##### 1.3.2.1. Dried fruit

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

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

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

##### 1.3.2.2. Frozen fruit

Only fresh, impeccable fruit may be used for freezing. Treatment of the fruit with natural acids e.g. lemon or lemon juice concentrate is permitted. Fruit may be blanched before freezing. The addition of saccharose in dried form, or as syrup is not permitted. The use of ascorbic acid as an antioxidant is not allowed. Care must be taken that the product is not stored longer than 18 months before eating or further processing.

##### 1.3.2.3. Sterilised fruit preserves

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

#### 1.3.3. Fruit juices, nectars and juice concentrates

##### 1.3.3.1. Fruit juices and unrefined juice extracts

Fruit juices and unrefined juice extracts are mechanically made from ripe, healthy, fresh

DEMETER fruit. They may not be reconstituted from concentrates. Enzymes, also in dried form

(pectolytic, proteolytic and amylolytic), not chemically preserved, may be used for difficult pressings e.g. black currants, black berries, gooseberries. The addition of sulphur dioxide is prohibited in the production of juices. Pasteurisation, cooling and carbonic acid pressure treatment are allowed as preservatives. The removal of material causing cloudiness can be achieved, where necessary, by centrifuging. Asbestos-free filter materials are to be used for filtration. The following may be used with written permission from the DEMETER organisation:

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

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

#### 1.3.3.2 Nectars (Diluted sweetened juices)

Nectars can be produced from stone fruit and pip fruit (as well as wild fruits), using the sweeteners listed in 5.4 Part A, 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. Pasteurisation and bottling of the juices is to be carried out in the gentlest manner which least degrades the quality of the product. Aseptic bottling is possible.

#### 1.3.3.3 Juice concentrates

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

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

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

##### 1.3.4.1 Partially manufactured products (pulp and fruit paste)

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

##### 1.3.4.2 Fruit juice setting agents

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

#### 1.3.4.3 Fruit pulp and paste

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

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

Plum pulp: an unsweetened product made from fresh or dried plums, or pulp. Other additives are not allowed.

Pulp from other, sweet fruits e.g. mango, pear: no other additives are allowed apart from the fruit.

#### 1.3.4.4 Fruit cheeses

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

#### 1.3.4.5 Spreads based on fruit (fruit preparations)

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

## 2. **Vegetables, including potatoes**

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

All DEMETER vegetables and potatoes can be used.

### 2.1. **Storage of vegetables**

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

### 2.2. **Processing of vegetables**

#### 2.2.1. **Ingredients and additives**

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

- Starter cultures (not genetically modified; a written certificate to this effect must be provided by the supplier).
- Salt see table 5.5 Part A.

Permitted sweeteners:

- See table 5.4 Part A. All sugars as to table 5.5. part A may be used as part of the fermentation process for acetic acid and lactic acid products.

#### 2.2.2. Processing aids

- 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 (unhydrogenated).

### **2.3. Processing according to product groups**

#### 2.3.1. Preparation of vegetables

##### 2.3.1.1. Washing

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

##### 2.3.1.2. Cleaning and peeling

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

##### 2.3.1.3. Chopping and sorting

The usual methods are used for chopping and sorting.

##### 2.3.1.4. Blanching

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

#### 2.3.2. Preserved vegetables

##### 2.3.2.1. Dried vegetables (including mushrooms)

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

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

#### 2.3.2.2. Vegetables in cans and glass (including mushrooms)

The usual processes (see section 2.3.1. Washing, sorting, cleaning - if necessary cutting and dicing) are used in the preparation of vegetables. The bottling liquid may contain up to 1.5% of added salt (see 2.2.1). Treatment with naturally occurring acids, (e.g. lemon juice, apple juice, sauerkraut juice) is allowed for light coloured vegetables. The use of calcium chloride on tomatoes is prohibited.

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

#### 2.3.2.3. Preserving vegetables by making them sour

- Lactic acid preservation of vegetables.

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

- Acetic acid preservation of vegetables (use of vinegar)

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

#### 2.3.2.4. Frozen vegetables

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

#### 2.3.3. Vegetable juices

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

### 3. Fruit vinegar's, tomato pulp, horse radish preparations

**3.1. Fruit vinegar's**

Starter cultures are permitted.

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

**3.2. Tomato pulp**

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

**3.3. Horse radish preparations**

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

## II

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

### Table of contents

- 1. General
- 2. Ingredients
  - 2.1 Ingredients
  - 2.2 Sweetening Agents and Salt
- 3. Processing

### 1. General

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

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

### 2. Ingredients

#### 2.1 Ingredients

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

#### 2.2 Sweetening agents and Salt

as defined in table 5.5., Part A

### 3. Processing

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

### III

## Standards for the certification of DEMETER bread, cakes and pastries

### Table of contents

- 1. Ingredients and additives**
  - 1.1. Ingredients
    - 1.1.1 Milk and milk products
    - 1.1.2 Sweetening agents
    - 1.1.3 Raising agents
      - 1.1.3.1 Micro-organism
      - 1.1.3.2 Chemical raising agents
    - 1.1.4 Salt
    - 1.1.5 Fats for deep fried bakery products
    - 1.1.6 Chocolate coating
    - 1.1.7 Fruit preparation
    - 1.1.8 Alcohol
  - 1.2. Additives
    - 1.2.1. Approved setting agents
    - 1.2.2. Alkaline brines
    - 1.2.3. Flavouring
    - 1.2.4. Baking improvers
  - 1.3. Aids
    - 1.3.1. Non-stick agents
    - 1.3.2. Baking papers and baking foils
- 2. Processing methods
  - 2.1. Milling
  - 2.2. Age of the flour
  - 2.3. Prolonging and interrupting the rising process
  - 2.4. Freezing
  - 2.5. Ovens
  - 2.6. Baking tins and trays
- 3. Labelling (additional information)

## 1. Ingredients and additives

### 1.1 Ingredients

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

#### 1.1.1 Milk and milk products

As a blanket rule dried milk products may not be used

#### 1.1.2 Sugar types

See table 5.4 , Part A

#### 1.1.3 Raising agents

##### 1.1.3.1 Micro-organism

The following raising agents may be used:

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

##### 1.1.3.2 Chemical raising agents

The following raising agents may be used:

- E 501 for ginger bread and honey bread
- Tartaric acid baking powder. Grain starch is the only allowable carrier which may be mixed with it.

Raising agents containing phosphates are prohibited.

#### 1.1.4 Salt

See table 5.4 Part A

#### 1.1.5 Fats for deep-fried bakery products

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

#### 1.1.6 Chocolate coating

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

### 1.1.7 Fruit preparation

See Part B I Section 1.3.4

### 1.1.8 Alcohol

Alcohol in all forms is prohibited.

## 1.2 Additives

### 1.2.1 Approved setting agents

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

### 1.2.2 Alkaline brines

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

### 1.2.3 Flavouring

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

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

### 1.2.4 Baking improvers

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

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

- Wheat gluten, but only in DEMETER bakery products containing wheat (it is prohibited in wheat free bakery products).
- Acerola powder, accompanied by a declaration that the malt -dextrin carrier contains no genetically modified organisms, and has not been produced with the aid of genetically modified organisms.
- Fruit juices, malt and soya flour are permitted, and must be of DEMETER quality if available.

Conventional baking improvers may contain only those ingredients and additives which are listed in sections 1.1 and 1.2. All baking improvers used in DEMETER bakery products require

approval by the DEMETER organisation in the respective countries i.e. confirmation that they meet the standards.

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

### **1.3 Aids**

#### **1.3.1 Non-stick agents**

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

#### **1.3.2 Baking paper and baking foils**

Baking in foil is prohibited.

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

## **2. Processing methods**

### **2.1 Milling**

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

### **2.2 Age of the flour**

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

### **2.3 Prolonging or interrupting the rising process by cooling or freezing**

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

### **2.4 Freezing**

Fruit can be frozen to give independence from the seasons. Microwave ovens may not be used for thawing. Baked bread and bakery products may not be frozen.

### **2.5 Ovens**

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

## 2.6 Baking tins and trays

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

Single use baking forms made of aluminium are prohibited.

## 3. **Labelling** (additional information)

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

## IV

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

### Table of contents

- 1. General
- 2. Ingredients and additives
  - 2.1 Ingredients for pastry products
    - 2.1.1 Ingredients for noodles
    - 2.1.2 Ingredients for filled pastries
  - 2.2 Micro-organism cultures, additives, flavours
  - 2.3 Other additives
- 3. Processing
  - 3.1 Processing methods
  - 3.2 Processing aids

### 1. General

This guideline covers:

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

### 2. Ingredients and additives

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

Allowable sweetening agents – see table 5.5., Part A

Salt – see table 5.5., Part A

- 2.1 Ingredients for pastry products
  - 2.1.1 Ingredients for noodles:
    - Grain or milled grain products such as flour, semolina
    - Eggs
    - Herbs and spices
    - Vegetables

### 2.1.2 Ingredients for filled pastry products

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

### 2.2 Micro-organism cultures, additives, flavours

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

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

## 3. Processing

### 3.1. Processing methods

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

- Production of modified starch using chemicals or enzymes

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

- The product is made from DEMETER raw materials
- Labelling the product as DEMETER under the provisions of Section 9.3.2.1 is not possible
- The labelling follows the provisions of Section 9.3.2.3 : DEMETER ingredient in the ingredients' list (without use of the logo)

### 3.2. Processing aids

- Nitrogen (N<sub>2</sub>)
- Carbon dioxide (CO<sub>2</sub>)
- Sodium hydroxide (NaOH) to adjust the pH value in the producton of starch
- Isolated enzymes are not permitted

## V

# Standards for the treatment and processing of DEMETER herbs and spices

### Table of contents

- 1. Harvest
- 2. Ingredients, additives and processing aids
  - 2.1 Ingredients and additives
  - 2.2 Processing aids
- 3. Drying and other preserving methods
  - 3.1 Drying
  - 3.2. Other preserving methods
- 4. Further processing
  - 4.1. Chopping and cutting
  - 4.2. Cleaning
  - 4.3. Mixing
- 5. Disinfection and sterilisation

### 1. Harvest

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

### 2. Ingredients, additives and processing aids

#### 2.1. Ingredients and additives

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

In addition the following is permitted:

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

#### 2.2. Processing aids

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

### 3. Drying and other preserving methods

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

#### 3.1. Drying

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

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

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

The products being dried may not be coated with extracts such as amino acids, fatty acids, sugars, or emulsifiers. Natural materials (e.g. oils) of DEMETER quality, or of certified organic quality meeting EU-2092/91 or other valid organic laws are allowed to be used as surface treatment agents.

The use of high frequency drying is prohibited.

#### 3.2. Other preserving methods

Pickling in plant oils or vinegar of DEMETER quality or of certified organic quality meeting EU-2092/91 or other valid organic laws is permitted.

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

Deep freezing is permitted.

### 4. Further processing

#### 4.1. Chopping and cutting

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

Size reduction processes, which use nitrogen or carbon dioxide as cooling agents, are permitted.

Closed cycle, nitrogen- cold milling processes are preferable for reasons of energy conservation.

#### 4.2. Cleaning

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

#### 4.3. Mixing

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

### 5. Disinfection and sterilisation

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

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

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

For pest control, deep freezing after drying is permitted.

# VI

## Standards for the certification of DEMETER meat and meat products

### Table of contents

- 1. General
- 2. Ingredients and additives
  - 2.1 Ingredients
    - 2.1.1 Salt
    - 2.1.2 Sugar
    - 2.1.3 Herbs and spices
    - 2.1.4 Alcohol
  - 2.2 Ingredients and processing aids
    - 2.2.1 Lactic acid
    - 2.2.2 Citrates
    - 2.2.3 Starter cultures (cultures of micro-organisms)
    - 2.2.4 Casings
    - 2.2.5 Immersion substances
    - 2.2.6 Smoke
- 3. Processing methods
  - 3.1 Maturing of the meat
  - 3.2 Cooling of the meat
  - 3.3 Freezing of meat
  - 3.4 Blood
  - 3.5 Jellied meats
  - 3.6 Cured products
  - 3.7 Scalded sausage production
  - 3.8 Sausages for cooking in boiling water
  - 3.9 Sausages to be eaten raw
  - 3.10 Pressed meat
  - 3.11 Smoking
  - 3.12 Preserving and types of preservative

### 1. General

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

Animal slaughter will not be covered in detail in these standards. The endeavours of the individuals involved, who must act with insight, and the principles mentioned above, stand in their place.

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

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

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

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

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

## **2. Ingredients and additives**

### **2.1 Ingredients**

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

#### **2.1.1 Salt**

See table 5.4 Part A

#### **2.1.2 Sugar**

See table 5.4 Part A

#### **2.1.3 Herbs and spices**

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

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

#### **2.1.4 Alcohol**

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

### **2.2 Additives and processing aids**

#### **2.2.1 Lactic acid**

Natural casings may be treated with lactic acid.

#### **2.2.2 Citrates**

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

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

Starter cultures are permitted for use in sausages to be eaten raw, but not however for the pickling solution. The aim is to produce a raw sausage using micro-organisms which originate in the meat

itself. The use of mould cultures is permitted, though not from genetically modified micro-organisms. The producer or trader must provide written confirmation that this is the case.

#### 2.2.4 Sausage casings

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

#### 2.2.5 Immersion substances

Immersion substances are prohibited

#### 2.2.6 Smoke (see 3.11)

### 3. Processing methods

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

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

#### 3.1 Maturing of the meat

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

#### 3.2 Cooling of the meat

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

#### 3.3 Freezing of meat

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

#### 3.4 Blood

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

#### 3.5 Jellied meats

Jellied meats (e.g. brawn) may be produced from natural aspic and boiled up rind, but not from aspic powder.

#### 3.6 Salt cured meat

The production of salt cured meat may not include the use of nitrite salts, E 252 saltpetre, E 300 ascorbic acid, E 575 (Glucono-delta-lactone : GdL) and food-grade acid. Dry curing and brine bath curing are both permitted, with the brine bath containing cooking salt with, or without, spices.

### 3.7 Production of scalded sausages

Meat used in the production of scalded sausages should ideally be still warm from the slaughtering. If this isn't possible then permissible processes to give the same effect are warm shredding, warm salting, and methods using freezing. The use of milk protein and other cutting aids is prohibited.

Citrates can be used for the production of scalded sausages if processing of the warm meat is not possible (In cases where the butcher cannot slaughter the animals himself, but rather has to process bought in sides of meat. He must inform the DEMETER organisation, in writing, of all the details). The use of citrates, as is legally required, must be declared in the ingredients list on the label.

### 3.8. Sausages for cooking in boiling water

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

### 3.9. Sausages to be eaten raw

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

### 3.10 Pressed meat

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

### 3.11 Smoking of meat

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

Permitted smoking agents:

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

### 3.12 Preserving and types of preservative

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

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

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

## VII

# Standards for the certification of DEMETER milk and dairy products

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  - 4.8 Whey
  - 4.9 Milk powder production
  - 4.10 Cheese
  - 4.11 Ice-cream

## 1. **Transportation of the milk**

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

## 2. **Storage of the milk**

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

## 3. **Ingredients and additives**

### 3.1 **Ingredients**

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

#### 3.1.1. **Starter cultures, micro-organism cultures**

##### 3.1.1.1 **Cultures using milk as a growing medium**

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

##### 3.1.1.2 **Starter cultures not grown on milk.**

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

#### 3.1.2 **Rennet**

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

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

#### 3.1.3 **Salt**

See table 5.5., Part A

#### 3.1.4 **Sweetening agents**

See table 5.5., Part A

### 3.1.5 Oil

Oil may be used to treat the surfaces of cheese.

### 3.1.6 Herbs and spices

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

### 3.1.7 Fruit preparations

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

## 3.2 Additives

### 3.2.1 Calcium carbonate (CaCO<sub>3</sub>) and Calcium chloride (CaCl<sub>2</sub>)

Calcium carbonate (E 170) is allowed solely for the production of sour milk cheese. Sodium bicarbonate may not be used.

Calcium chloride (E 509) may be used as processing-aid in the cheese production.

### 3.2.2 Coatings

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

- Beeswax
- Natural hard paraffin wax
- Microcrystalline waxes

These three substances can be mixed with each other. Natural hard paraffin wax and microcrystalline wax may contain no other additives such as polyethylene, short chain polyolefine, polyisobutylene, butyl or cyclic rubber. In addition the waxes may not be coloured.

Plastic film is provisionally permitted for covering the outer layer of sliceable cheese, and semi-hard cheese, as long as it is free from potassium sorbate, calcium sorbate and natamycin. (This is permitted only until a suitable replacement material or method is found).

### 3.2.3 Smoking of cheese

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

Permitted smoking agents:

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

- Pine cones
- Herbs
- Other types of plants such as juniper, heather, branches, conifer cones and spices

#### 4. Processing methods

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

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

##### 4.1 Milk (for drinking)

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

The following types of milk can be made commercially available:

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

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

##### 4.2 Butter

The following butter types can be produced:

- Full cream butter
- Sour cream butter

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

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

##### 4.3 Fresh cheese and curd cheese (Quark)

Fresh and curd cheese may be produced with the addition solely of starter cultures and rennet. The utilisation of whey proteins using methods such as thermo-curd methods and ultrafine filtration are permitted. The use of centrifugal whey separation methods is not allowed. The adjustment of fat con-

tent using the addition of high or low fat curd cheese, or of cream, is permitted. The other common methods of fresh cheese manufacture are allowed.

#### 4.4 Sour milk cheese

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

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

A heat treatment of 85-95 degrees C, not exceeding 5-10 minutes in duration, is permitted for treating the milk products. It is desirable to work, as far as possible, at the lower limits. UHT treatment and homogenisation 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.

#### 4.6 Sweet milk products

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

#### 4.7 Cream

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

#### 4.8. Whey

Both sweet and sour whey can be produced.

#### 4.9. Milk powder production

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

Milk powder is allowed only as an ingredient for processed products.

#### 4.10. Cheese

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

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

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

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

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

#### 4.11. Ice-cream

Ingredients and thickeners:

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.

Colourings are not allowed.

## VIII

# Standards for the certification of DEMETER cooking oils and fats

(dietary products and margarine are excluded)

**For labelling (i.e. cold pressed, native) please consult with  
your national food ordinance.**

### Table of contents

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  - 1.2 Processing aids
  - 1.3 Additives
  
- 2. Processing
  - 2.1 Processing of cold-pressed oils
    - 2.1.1 Permitted processing methods
    - 2.1.2 Prohibited processing methods
  
  - 2.2. Processing of other oils and fat
    - 5.1.1. Permitted processing methods
    - 5.1.2. Prohibited processing methods
    - 5.1.3. Labelling
  
  - 2.3. Permitted processing methods for animal products

### 1. Ingredients and processing aids

- 1.1 Ingredients
 

In principle all DEMETER quality raw materials may be used.
  
- 1.2 Processing aids
  - Asbestos free filter material such as paper or cloth
  - Non activated diatomaceous earth
  - Nitrogen (N<sub>2</sub>)
  - Citric acid only for removal mucilage (oil for processing purposes)
  - Bentonite (Fullers earth) (oil for processing purposes)

### 1.3 Additives

The use of additives is not permitted.

## 2. Processing

### 2.1 Processing methods

#### 2.1.1 Permitted processing methods for cold-pressed oils

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

Olive oil: 40 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

#### 2.1.2 Prohibited processing methods

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

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

#### 2.2.1 Permitted processing methods

- Usual mechanical processes for cleaning and preparing the raw materials (including conditioning and drying with heat)
- Mechanical pressing
- Centrifuging, Decanting
- Filtering
- Removal of mucilage

- Neutralising/ Buffering of pH (only once either before or after fractionation)
- Washing
- Vacuum drying
- Bleaching/colour removal
- Thermal fractionation (decrystallisation/ dry fractionation)
- Steaming/ Deodorising:

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

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

#### 2.2.2 Prohibited processing methods

- Extraction with organic solvents
- Chemical Modification (Hydrogenation, Ester modification)
- For palm oil which will be sold as raw palm oil:

Mucilage removal using acids

Removal of acid

#### 2.2.3 Labelling

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

#### 2.3 Permitted processing methods for animal products

- Rendering

## IX

# Standards for the production of DEMETER sweetening agents

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1. Scope
2. Ingredients
3. Processing
  - 3.1 Processing aids
  - 3.2 Processing methods for plant juice concentrates, cane sugar and sugar beet

#### 1. Scope

- Plant syrups (i.e. maple and sugar beets syrups)
- Plant juice concentrates and plant extracts
- Sweetening agents from grains/starch
- Malt extract
- Whole sugar (dried and milled sugar juice)

For the production of raw sugar and white sugar an application has to be made.

#### 2. Ingredients

All DEMETER quality raw products may be used as ingredients.

#### 3. Processing

##### 3.1 Processing aids

- Filter-materials made from textiles, paper and cellulose
- Enzymes (not genetically manipulated) for the processing of grain/starch sugar products
- For grain/starch invert sugar: Xyllos (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

##### 3.2 Processing methods for plant juice concentrates (see part B, I)

Processing methods for grain / starch sugar products (malting).  
All common processes using the processing aids as mentioned in 3.1. above are permitted.

## **X**

# **Standards for the certification of DEMETER cosmetics**

### **Table of contents**

1. General
2. Scope of the guideline
3. Labelling of cosmetics
4. Ingredients
  - 4.1 Ingredients of agricultural origin
  - 4.2 Ingredients of non-agricultural origin
  - 4.3 Raw materials collected from the wild
  - 4.4 Other ingredients, additives and processing aids
5. Processing methods
  - 5.1 Degree of processing of the raw material
  - 5.2 Extracts and etheric oils
  - 5.3 Soaps
6. Non- permitted ingredients and processes

### **1 General**

As the words „natural cosmetic“ indicate, the aim is to produce cosmetics that consist entirely of natural products, are very compatible with the human skin and pollute the environment as little as possible. The raw materials of plant or animal origin are to be of DEMETER quality as far as possible. The task in the production of cosmetics is to maintain, or, wherever possible to enhance through the use of appropriate measures, the special qualities of the raw materials which have arisen through their having been grown biodynamically. The aim is to use traditional processes for raw material preparation and cosmetic production in an optimal way, but also to use or develop specific methods for the production of cosmetics appropriate for mankind.

## 2 Scope of the standards

- Skin and body care products
- Etheric oils
- Makeup

## 3 Labelling of cosmetics

(Special rules additional to the general labelling standards)

- 3.1. Prominent use of the name DEMETER on the cosmetic label (e.g. DEMETER rose oil) is allowed when:
- The ingredient included in the name is of DEMETER quality and
  - Over 90% of all the ingredients are of DEMETER quality.
- 3.2. The DEMETER trademark can be used in the product name referring to the DEMETER raw materials that have been used (e.g. Rose oil from DEMETER roses) when:
- The ingredients included in the name are of DEMETER quality,
  - At least 50% of the ingredients are DEMETER quality and
  - At least 90% of the ingredients are of certified organic quality.
- 3.3. The DEMETER trademark can be used in the ingredients list, or in the text when:
- One ingredient is of DEMETER quality and
  - At least 50% of the ingredients are of certified organic quality.
- 3.4. All ingredients must be listed in the ingredients' list. The INCI (International Nomenclature Cosmetic Ingredient) system is to be used, with the name of each ingredient being listed in the language of the country, if at all possible-if necessary parallel to INCI.
- 3.5. All ingredients except water are to be included in the calculation of composition. For products governed by sections 3.1 and 3.2 above, the ingredients of conventional origin are to be noted by the use of the abbreviation „conv.“
- Under this labelling guideline, mixtures of etheric oils may carry one collective name. This collective name can only be labelled DEMETER if all the oils used in the mixture originate from Biodynamic agriculture and meet these standards, or when the qualifying oils are individually named.

## 4. Ingredients

- 4.1. Ingredients of agricultural origin

If the ingredient is not available in DEMETER quality, certified organic ingredients can be used (ingredients meeting EU- 2092/91 or other valid organic laws) . If these are not available in sufficient quality or quantity, conventional ingredients may be used. These however must comply with the DEMETER standards for the aids used. The corresponding labelling standards are to be correctly observed.

#### 4.1.1. Uncoloured and unbleached plant or animal waxes

When using lanolin from conventional production, the treatment of sheep with insecticides (dipping), the method of lanolin extraction, and the conditioning of the lanolin using solvents, is to be considered. A written declaration is to be obtained from the supplier concerning these details. Possible residues are to be tested for, and they may not exceed the limits set by the cosmetic producing firm.

#### 4.2. Ingredients of non-agricultural origin.

In principle the following are allowed:

- Potable water
- Ingredients of mineral origin: salts, clays, stone, precious stones.
- Ingredients of metallic origin: precious metals, metals
- Bentonite, diatomaceous earth, cooking salt,

#### 4.3. Raw materials collected from the wild

These materials must be certified to EU-2092/91 or other valid organic laws. They are considered to be equivalent to certified organic products.

#### 4.4 Other ingredients, additives and processing aids

The ingredients listed here may be used only in products on which the DEMETER trademark is used in the ingredients list or in the text. They may not be used in products labelled according to sections 3.1 and 3.2 above.

- Sulphated vegetable oils e.g. sulphated castor oil/ olive oil
- Fatty alcohols and sulphated fatty alcohols
- Lanolin-alcohol
- Castor oil fatty acids
- Ethanol
- Glycerine (max. 10%)
- Xanthan gum
- Titanium dioxide/zinc oxide
- Lecithin
- Citric acid

- Alginates
- Sugar alcohol (sorbitol)
- Cetyl Alcohol, max. 3%

## 5. Processing methods

### 5.1. Degree of processing of the raw material

DEMETER raw materials of agricultural origin may be processed according to the standards for the certification of DEMETER food. In principle all traditional mechanical and physical methods are allowed, such as chopping, sieving, washing, heating and cooling....

If it is planned to use other than the above mentioned methods, or raw materials that have been produced by other processes, the contract holder must make written application to the DEMETER organisation in their country. If the application is granted, and the product exported, then the DEMETER organisation in the importing country is to be informed.

### 5.2. Extracts and etheric oils

Etheric oils and extracts from DEMETER plants and animals may be labelled as DEMETER oils or extracts if:

- The raw materials have been processed using mechanical, thermal, or fermentation methods.
- The extracts have been produced by water, oil, ethanol, CO<sub>2</sub> or fruit vinegar extraction.

The list of extraction agents includes oils, fats and fruit vinegar. If these are not of DEMETER quality, then reference to DEMETER in the labelling is limited to the DEMETER quality raw material.

- The etheric oils are produced using steam distillation, CO<sub>2</sub> extraction or by pressing.

Ingredients of conventional or certified organic origin, which have been extracted using methods that do not meet these standards, may not be used in products labelled prominently with the DEMETER trademark (see 3.1 and 3.2)

### 5.3. Soap

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

- The raw soap may be produced only from neutral plant or animal fats of DEMETER quality, without any other ingredients.
- Only sodium hydroxide or potassium hydroxide, that has had no previous usage, may be used for saponification.

## 6. Non-permitted ingredients and processes

In addition to the prohibited ingredients and processes, it is not permitted to test DEMETER products during their development on animals. Further, no raw materials may be used that have been tested on animals (a written declaration to this effect is required from the supplier)

# XI

## Standards for the certification of Textiles from DEMETER fibres

Approved by the Members Assembly in June 2002

### Table of Contents

1. General
2. Cultivation and Harvesting
3. Processing
4. Labelling
5. IVN Guidelines (International Natural Textiles Association)

### 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. As the processing of food can endanger specific Biodynamic qualities, so can the processing of textiles endanger the qualities of Biodynamic fibres. Textile processing uses a large number of chemical input (scouring, dyeing, etc). This may lead to significant environmental damage.

Concerning the quality of natural products, two questions are to take into consideration:

- Is the production/processing of natural products of harmless influence to the environment (earth, water, air)?
- Do the natural products have a positive influence on men or - on the other side – can they help to avoid negative effects?

The first question can be answered spontaneously by exclusion of specific toxic substances. This can be applied for the production as well as for the processing of the products. For Demeter production these aspects are covered by the Demeter guidelines/standards.

Concerning the processing of textiles there are a lot of guidelines/standards existing. In our opinion the standards of the International Association of Natural Textiles (IVN) are the most consequent ones. With it's standards, the Association set the basis for the application of appropriate testing methods and for a kind of processing adequate for Demeter textiles.

The second question cannot be answered by avoiding the use of toxic substances. Moreover, a specific idea of "Demeter quality" has to be developed, based on Anthroposophie and on anthroposophic medicine espe-

cially. The development of an idea of useful clothing in this sense is the specific contribution of the anthroposophic movement under the topic "textile quality". It is completely different from conventional aspects. The first steps are done, further steps will follow.

Men are working together in farming, processing and trading Demeter products to provide textiles adequate to the high demeter quality. Demeter products always fit the minimum standards for organic textile products. Criteria for higher pretension will be fulfilled more and more in the future.

The minimum standards for Demeter textiles are:

- the fibres (wool, cotton, flax, etc) are from certified Demeter farms
- the production standards of the International Association of Natural Textiles (IVN) in their latest published edition or equivalent are certified.

## **2. Cultivation an Harvesting**

Fibres and wool derived from certified Demeter farms can be used for the processing of Demeter textiles. The fibres and the wool fulfil the prescriptions of the Demeter standards of the local organisations. In addition, spot checks must be made in a systematic manner to ensure that there are no residues of harmful substances in the raw materials.

Cotton must be handpicked. Machine harvest is only permitted when the use of chemicals is excluded.

Animal fibres are to be shaven or combed.

## **3. Processing**

The standards of the International Natural Textiles Association (IVN) in their latest published edition apply.

## **4. Labelling**

For the Labelling of Textiles from Demeter wool or from Demeter fibres the Demeter Standards for Labelling in their latest published edition apply.

Textile products may be labelled Demeter:

- if the fibres (wool, cotton, flax, etc) are from certified Demeter farms
- if the production standards of the International Association of Natural Textiles (IVN) in their latest published edition or equivalent are certified.

Certified fibres from conversion to Demeter are acceptable if their share in the processed textile will 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 either Demeter or organic quality, the mixing with such conventional fibres is permitted.

Demeter labelling is limited to such products from mixed fibres that contain a minimum weight of 50% Demeter fibre.

Enclosure: IVN standards

# **International Natural Textiles Association**

**IVN**

**Guidelines**

**Version 1.1-1999**

**Date 20.01.2000**

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# Part 1

Raw materials  
Textile manufacture

## 1.0 Preliminary remarks

### 1.1 Preamble

This preamble reiterates the fundamental considerations which were incorporated into the original version of this guideline, and which are to serve as a framework for orientation in the event of later amendments:

*Knowing that textile products can assist, but also harm, Man and his environment in their development and*

*consciously wishing to make a contribution to the physical and mental wellbeing of Man in the future, wheresoever he may live*

*and*

*intending to state the essential criteria for products laying claim to an ecological standard whilst also*

*offering sovereign institutions a structure so as to prevent the misinformation of consumers,*

*the following defines the vision, the recommendations and the standards for the designation natural textile.*

*This is done with the intention of setting down the whole natural textiles process and making it verifiable - from development, through usage and disposal, to standards for working conditions. This guideline is to be compiled in accordance with the already existing parameters for production and processing.*

*As authors, the Guidelines Committee are aware that over and above the current minimum standards, efforts can and must be made to include advances in production technology and to continually improve natural textile quality for the benefit of the consumer.*

### 1.2 Objectives when elaborating the guidelines

- \_ Covering all processes along the textile chain, from obtaining the fibre to the sale and use of the finished textile, including social matters.
- \_ Minimising or avoiding resource consumption.
- \_ Maintaining the quality and integrity of the natural fibres.
- \_ Documenting the current state of knowledge and the prior art.
- \_ Transposing the criteria to natural textiles with good usability and care properties.
- \_ International applicability.

For each finishing step, and if required in fibre-specific form, the processing agent and process chemicals and the entire finishing operation in question are evaluated and documented. All substances used, from production to disposal, should be assessed wherever this is feasible and economically acceptable. Particularly recommended processes or chemicals are arrived at and in some cases are already integrated and identified as such.

### 1.3 Basis for evaluation of the guidelines

Where possible, the evaluation is based on "sharp" criteria.

- \_ Toxicity for the environment (e.g. for water, fauna)
- \_ Toxicity for workers and end consumers
- \_ Degradability / elimination
- \_ Emissions
- \_ Individual parameters (AOX, heavy metals, pesticides, etc.)
- \_ The decision on the use of a textile processing agent is taken on the basis of the available safety data sheets. The evaluation of the processing agents and dyes used is based on the specifications in the safety data sheets. When pure chemicals (e.g. caustic soda lye) are used, the evaluation relates to the ready-to-use liquor.

If these are not available or where alternatives are of equal quality, "fuzzy" ones can also be applied for a decision on the admissibility or on the alternative to a processing agent or processing step.

- \_ Change in fibres and vitality of fibres
- \_ Product biographies
- \_ Resource conservation
- \_ Recyclability of the agents and dyes used and of the end product textile.

### 1.4 Label grading

The Guidelines provide the label-grade:

- \_ **"Best"** shows the maximum standard currently achievable. A restricted range of qualities and products is therefore deliberately accepted for the time being.

In addition, recommendations are formulated in this guidelines, which go beyond the required minimum standards and which are already feasible today. A desirable targeted orientation for future developments in the production of natural textiles is described by the visions.

## 1.5 Continued development

The Guidelines are adapted in an ongoing process to the latest state of knowledge.

Waste water: this topic is receiving the full attention of the Guidelines Committee. Because of the different national requirements, no standard orientation values have yet been fixed.

Standards for working conditions: this topic is also receiving the full attention of the Guidelines Committee.

## 1.6 Key to use of the Guidelines

The Guidelines must, generally speaking, be understood as binding regulations. However, the *recommendations* and *visions* integrated into the Guidelines are identified as such and should be interpreted as being "desirable", not binding.

*Part 1 "Raw materials / textile manufacture"* contains the Guidelines for obtaining the fibres, manufacture of the garments, and the product-life-related aspects of transport, disposal and recycling as well as the standards for working conditions.

*Part 2 "Quality assurance"* contains the standards for quality assurance along the textile chain. It includes the requirements for the certification of the production facilities, and the orientation values for the checking of raw materials, processing agents and end products.

## 2.0 Basic requirements

- All processing agents used must comply with the requirements relating to toxicology and degradability / eliminability. These requirements do not apply to dyes (see Chapter 5).
- Companies of the pretreatment, dyeing and finishing processing stages must, if they are direct or indirect waste-water dischargers, have at least a two-stage waste-water treatment plant.
- Substances obtained or altered by the use of genetically modified organisms (GMOs) should be avoided. General exclusion of these substances is not possible because of the impossibility of conducting checks for them. In the Guideline, the various processes have been weighed up against one another. In the event that later developments bring clear-cut ecological improvements, this will be taken into account in the revised version of the Guideline.
- *Recommendation / vision*: the finished garment should be putrescible in its fabric structure (fibre components of fabric area).

### 2.1 Toxicity / degradability / eliminability of the processing agents used

The toxicity is assessed relative to the degradability / eliminability of the respective substance. The basic idea is that **a higher toxicity can be tolerated when the substance is easily eliminable / degradable**. In the

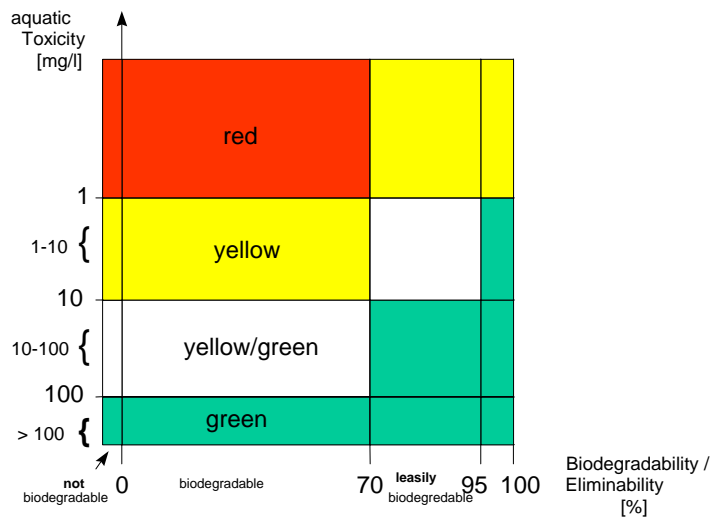
same way, a substance of low eliminability/degradability may only have a low toxicity. It must be taken into account here that **the toxicity is low when the stated value for the toxicity in mg/l or mg/kg is high**. A value of 100 mg/l means a lower toxicity than a value of 10 mg/l. This means that only higher concentrations of this processing agent have a toxic effect on organisms.

The following diagram represents the comparison of the grading between the criteria of the TEGEWA and the Guidelines of the IVN.

Decisions on the use of textile processing agents must be taken on the basis of the safety data sheets available. If pure chemicals are used (e.g. sodium hydroxide), the solution ready for use must be assessed.

#### DIN Safety Data Sheet

**"toxicity concentration" high = low toxicity**



- red = TEGEWA-class III, high waste water relevance
- yellow = TEGEWA-class II, waste water relevance
- yellow/green = TEGEWA-class I, low waste water relevance  
IIVN – non permissible
- green = TEGEWA-class I, low waste water relevance  
IIVN - permissible

Eliminability (E) or degradability (A) of the processing agent used	Toxicity requirement		Testing methods
20-70% (E/A)	Aquatic toxicity (T) for bacteria, fish, daphnia or algae_ 10mg/l (T) ≥ 100mg/l (T)	Oral toxicity LD50 ≥ 2000 mg/kg	Eliminability acc. to OECD 302B/303A
>70% (E/A)	Aquatic toxicity (T) for bacteria, fish, daphnia or algae_ 10mg/l (T) ≥ 10mg/l (T)	Oral toxicity LD50 ≥ 2000 mg/kg	Degradability acc. to OECD 301
	If data for <u>bacteria</u> are available, these shall be given <u>priority</u> .		Aquatic toxicity (T) for fish, daphnia or algae (LC50, EC50)

**Not permitted is the use of processing agents:**

with an eliminability  
< 20%

with an aquatic toxicity  
LC50 < 10 mg/l

with an oral toxicity  
LD50 < 2000mg/kg

**Exceptions:**

Substances which are used in circulation systems with a recovery rate of more than 70% are not subject to this evaluation schema.

For vat dyeing, the use of sodium dithionite is permitted..

## 2.2 Chemicals and processing agents not permissible in any processing steps

Substance group	Banned substances / restrictions
Quaternary ammonium compounds	<u>Exception:</u> quaternary fatty acid esters <b>General exception:</b> use of these substances in dyeing.
Phenols	Phenols, chloro phenols
EDTA and similar complexing agents and active detergents	EDTA, DTPA, APEO's, LAS, $\alpha$ -MES,

Halogenated solvents	Organic halogen compounds as solvents
Others:	In general chemicals classified under the German law on chemicals as: _ Carcinogenic _ Mutagenic _ Reproduction-toxic (teratogenic) _ Sensitising. (cf. TRGS 900 and TRGS 905)
Legally banned substances	Substances, which are banned by the German law on articles for use in food ( <i>LMBG</i> ) or by EU regulations with a nationally valid legal character.  For the substances set forth in these laws or regulations, the aforementioned restrictions or the further-reaching requirements of the IVN Guideline shall apply.

### 3.0 Fibre production

#### 3.1 Remarks

The production of fibres serves, as does all work with textiles, the wellbeing that clothing can create in people. Natural fibres are obtained from agriculture and from gathering in the wild. The responsibility and importance of fibre selection is therefore linked to wellbeing as described above and to the responsible use of agricultural resources.

Farms geared to a use of natural eco-systems cater for the aforementioned tasks more than those with conventional cultivation. For that reason, only fibres from certified biological-dynamic or certified biological-organic production can be considered for natural textiles of the IVN as a vision. Only the lack of suitable fibre quantities can be considered as grounds for the temporary admissibility of fibres from conventional agriculture. Synthetic or reconstituted fibres are suitable neither as a contribution to the reasonable use of natural resources nor to the wellbeing of people.

#### 3.2 Criteria

Fibre type	Best
Cotton	Approved are fibres from certified ecological cultivation, as well as fibres from conversion.  IFOAM / EG-BioVO 2092/91  Conversion must be certified.
Industrially manufactured cellulose (CV)	Excluded from use, since they are not natural fibres  <u>Exception:</u> see 7.0 ff.
Fine hair (camel, yak, cashmere, alpaca, mohair etc.)	Approved are fibres from certified ecological cultivation, as well as fibres from conversion.  IFOAM / EG-BioVO 2092/91  Conversion must be certified.

Hemp	Approved are fibres from certified ecological cultivation, as well as fibres from conversion. IFOAM / EG Bio-VO No. 2092/91 Conversion must be certified.
Linen	Approved are fibres from certified ecological cultivation, as well as fibres from conversion. IFOAM / EG Bio-VO No. 2092/91 Conversion must be certified.
Grey cotton	Not regulated
Ramie	Not regulated
Sheep's wool	Approved are fibres from certified ecological cultivation, as well as fibres from conversion. IFOAM / EG Bio-VO No. 2092/91 Conversion must be certified.
Silk	Approved are fibres from certified ecological cultivation, as well as fibres from conversion. IFOAM / EG Bio-VO No. 2092/91 Conversion must be certified.
Synthetic fibres	Excluded <u>Exception:</u> see 7.0 ff.
Elastane	Surface: no Cuffs, edgings: up to 5%
Peat	Not regulated

#### 4.0 Pre-treatment for finishing processes

Criterion	Best
Storage/transport of raw fibres / yarns	See under Storage/transport
Cleaning/washing	See under 2.0 Basic requirements ff. <u>Vision:</u> cleaning agents on basis of renewable raw materials
Kiering	Permitted, no requirement
<b>Boiling</b>	Permitted, no requirement
Ammonia treatment	Banned <u>Exception:</u> permitted for pre-washing of wool.
Degumming of silk	Permitted, no requirement
Genetically obtained or modified chemicals (GMOs)	<u>Recommendation / vision:</u> no genetically obtained or modified substances

Greasing agents	Only easy-to-wash-out natural and synthetic substances <u>Vision</u> : products on basis of renewable raw materials
Sizing agent	Starch derivates and synthetic sizing agents: such as CMC (carboxymethylcellulose) and polymanogalactanes <u>Recommendation / vision</u> : sizing agent recycling and avoidance of sizing by the use of ply warps.
Desizing	– Enzymes – Chlorine compounds are excluded
Knitwear softening agents	– Paraffin / paraffin oils – Substances on basis of natural raw materials <u>Vision</u> : products on basis of renewable raw materials
Knitting machine oils	Only easy-to-wash-out natural and synthetic substances
Chlorination of wools	Generally excluded
Caustic treatment	Caustic soda lye as pretreatment for better dyeability / dye saving
Mercerization	Excluded <sup>(1)</sup>
Bleaches	Peroxides such as: hydrogen peroxide, sodium peroxide, peroxyacetic acid
Optical brighteners	Banned
Clearing of fabric	Permitted when solvents are not used
Singeing	Permitted
Mechanical/thermal treatments	Permitted

<sup>(1)</sup> with the exception of caustic treatment for better dyeability, with undyed materials any additional changed in the fibre should be avoided.

## 5.0 Coloration

### 5.1 Dyeing, dye processing agents (The information relates to the dyes or process chemicals.)

Criterion	Best
Water toxicity of dyes	LC 50 > 100 mg/l
Oral toxicity for dyes	LD 50 > 2000 mg/kg
Heavy metals	Free of heavy metals acc. to ETAD Ban on metal complex dyes.  No chromium must be added to dyes.
AOX	< 5 %  For the next revision, it is intended to divide the values into anchor and chromophore. <u>AOX in reactive anchor</u> : < 2%

	<u>AOX in chromophore</u> : < 0.1% <u>Recommendation</u> : exclusive use of AOX-free dyes
Formaldehyde	Not in use as a textile processing agent
Preservative agents	Restrictions as per 2.0 Basic requirements ff.
Dye selection	Natural dyes (cf. list of abbreviations) or synthetic dyes.  If sulphur dyes are used, then only those with a sulphide content of <1%.  <u>Recommendation</u> : natural dyes
Azo dyes	No use of legally banned azo dyes which eliminate carcinogenic amines.
Carcinogenic dyes; dyes which can have an allergizing effect in the finished textile	Banned  (cf. list of allergizing dyes, Part 2 of INTA Guideline)
Further parameters	Process chemicals must comply with the Chapter 2.0 basic requirements.
Dyeing auxiliary agents	AOX <0.1%; free of heavy metals acc. to ETAD

## 5.2 Printing, pigments, printing pastes, processing agents

The following information relates to the printing paste or – where available – to the individual components

Criterion	Best
Water toxicity of dyes	LC 50 > 100 mg/l
Oral toxicity for dyes	LD 50 > 2000 mg/kg
Heavy metals	Free of heavy metals acc. to ETAD Ban on metal complex dyes
AOX	< 5 % For the next revision, it is intended to divide the values into anchor and chromophore. <u>AOX in reactive anchor</u> : < 2% <u>AOX in chromophore</u> : < 0.1% <u>Recommendation</u> : exclusive use of AOX-free dyes
Preservative agents	Restrictions as per 2.0 Basic requirements
Formaldehyde	Not in use as a textile processing agent
Dye selection	Natural dyes (cf. List of abbreviations) or synthetic dyes.  <u>Recommendation</u> : natural dyes
Carcinogenic dyes; dyes which can have an allergizing effect in the finished textile	Banned
Azo dyes	No use of legally prohibited azo dyes which eliminate carcinogenic amines.
Colour yield	<u>Recommendation</u> : optimization of printing paste yield by ecologically optimized process technology.
Further parameters	Process chemicals must comply with the Chapter 2.0 basic requirements.  <u>Banned</u> : discharge printing methods; petrol-containing printing methods; use of urea-formaldehyde-containing methods.  <u>Recommendation</u> : priority to use of renewable raw materials
Printing additives	AOX < 0.1%; free of heavy metals acc. to ETAD  <u>Recommendation</u> : preferred use of processing agents on the basis of renewable raw materials.

## 6.0 Finishing

Criterion	Best
Antimicrobial finishing	Banned
Antipicking	Banned
Antipilling	Banned
Antisnagging	Banned
Antistatics	Banned
Coatings	Must be putrescible Free of AOX and free of heavy metals
Weighting agents	Banned
Chintzing	With finisher: banned
Enzymes/genetic engineering	<u>Recommendation / vision</u> : no genetically obtained or modified substances
Antifelt	Banned
Flameproofing	Banned
Stain release	Banned
Formaldehydes / glyoxal	Banned
Insecticides	Banned
Filling and stiffening agent	Natural raw materials permitted
Lustring agent	Banned
Laminating	Banned
Non-creasing / pentamethylmelamine	Banned
Storage protection means	Banned
Matting	Banned
Mechanical finishing	Permitted
Mothproofing	Banned
Optical brighteners	Banned
Perfuming / deodoration	Banned
Water repellent	See Coating
Antislip finish	Banned ( <u>exception</u> : with silicic acid)
Shrinkproof finishing	Mechanical only
Knitwear softening agents	see 4.0 Pretreatment
Silk weighting	Banned
Milling and felting auxiliary agents	<u>Recommendation / vision</u> : not in use
Softeners	On basis of natural raw materials

## 7.0 Garment manufacture

In the production of natural textiles, particular value is attached to the selection of the materials for garment manufacture. Nevertheless, it is necessary to reconcile production requirements, the availability of ecologically acceptable materials and the expectations of the end user to acquire a very well tailored and long-lived textile which is very comfortable to wear. This resulted in compromise solutions in some points at the time the Guidelines were drafted. The so-called "minimum standard" (for descriptions see Part 2 of the Guidelines: 3.2 Minimum standard of materials and accessories ) combines ecological demands on the production of natural textiles with (current) production realities.

Ecologically worthwhile innovations will, after appropriate scrutiny, lead to changes in the Guidelines that take full account of the objective for the production of natural textiles (see 1.0 Preliminary remarks).

### 7.1 Standards for garment manufacture

Compare also Part 2 "3.2 Minimum standards for additional materials and accessories"

Criterion	Best
Sewing threads	Sewing yarns of 100% natural fibres and CO-covered PES yarns. Yarns may undergo ammonia-free mercerisation.
Embroidery yarns	Embroidery yarns of natural fibres. Ammonia-free mercerisation is permitted.  <i>Recommendation / vision:</i> embroidery yarns comply with the Guidelines for "Best".
Appliqué	Of renewable raw materials, not iron-on. Embroidery on synthetic basis excluded.  <i>Recommendation / vision:</i> the materials used comply with the Guidelines for "Best".
Elastic bands and yarns	Natural and synthetic rubber materials for bands and edgings. For underwear, an elastane admixture is permitted.  <i>Minimum requirement:</i> elastic bands and yarns inserted between two material inserts and hence having <u>no</u> direct skin contact do not have to be covered. Those with skin contact must be <b>CO</b> -covered.  <i>Vision:</i> natural elastomers
Linings / pockets	Linings of 100% natural fibres.  <i>Recommendation / vision:</i> linings/pockets of 100% natural fibres which comply with the Guidelines for "Best".

Criterion	Best
Inlays / Vlieseline	Inlays of 100% natural fibres. The use of inlays must be reduced as much as possible.

	<i>Recommendation / vision:</i> inlays/Vlieseline of 100% natural fibres which comply with the Guidelines for "Best".
Seam bindings / hatbands	Of 100% natural fibres. For seam bindings a 5% elastane proportion is permitted.  <i>Recommendation / vision:</i> of 100% natural fibres which comply with the Guidelines for "Best".
Shoulder pads	Of 100% natural fibres.  <i>Recommendation / vision:</i> of 100% natural fibres which comply with the Guidelines for "Best".
Labels	Of 100% natural fibres.  <i>Recommendation / vision:</i> of 100% natural fibres which comply with the Guidelines for "Best".

## 7.2 Accessories

Criterion	Best
Buttons / press-studs	Of renewable raw materials. Metal buttons must be free of chrome and nickel. They must not be galvanized by chrome-plating or nickel-plating.
Zips	Tape of renewable raw materials. Chains of metal (free of chrome and nickel; they must not be galvanized by chrome-plating or nickel-plating). For fine zip fasteners and where considerable strains are placed on them (jeans and special functions, PES band and plastic chains (without PVC) can be approved based on specification.
Buckles	Tape of renewable raw materials. Chains of metal (free of chrome and nickel; they must not be galvanized by chrome-plating or nickel-plating).
Edgings	Of 100% natural fibres. For bands and edgings in underwear an elastane admixture of max. 5% is permitted.
Cords / borders	Of 100% natural fibres.
Material in general	<ul style="list-style-type: none"> <li>_ Natural-state, renewable raw materials, no threatened timber</li> <li>_ Necessary water-based varnishes or natural varnishes and oils must comply with minimum requirements (see Part 2; 3.2).</li> <li>_ No PVC / PU</li> <li>_ No nickel</li> <li>_ Metals must be free of chrome and nickel. They must not be galvanized by chrome-plating or nickel-plating.</li> </ul>

## 7.3 Identification / material composition

Criterion	Best
<b>Identification</b>	TKG
Declaration of fibre proportions (extraneous fibres)	All fibres used in the fabric structure must be declared in full.
Vision	Material declaration of non-textile substances. Use of additional labels if necessary or if specified (e.g. "pull into shape after washing");

	colour fastnesses; shrinkage values).
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## 8.0 Use and care of the end product

### 8.1 Fastness requirements

Criterion	Testing method	Best
<b>General</b>		Fastnesses for animal and vegetable fibres to be observed separately. <i>Recommendation/vision:</i> subdivide on basis of dyes/dye groups.
Ironing fastness	DIN 54022 ISO 105 X11	Dependent on material
Rubbing fastness when dry	DIN 54021 ISO 105 X12	3 – 4
Rubbing fastness when wet	DIN 54021 ISO 105 X12	2
Perspiration fastness alkaline and acid	DIN 54020 SO 105 B02	3 – 4
Light fastness	DIN 54004 ISO 105 E04	4
Shrinkage values when wet Knitted/hosiery: Weave:	DIN 53920 ISO 6330	Guideline value: 5% - 8% <sup>(1)</sup> max. 3%
Shrinkage values when dry		Max. 3%
Saliva fastness	LMBG B 82.10-1	For baby and children's clothing to be evaluated as FAST
Washing fastness when washed at 60°C or in accordance with textile marking	DIN 54010 ISO 105 C03	Min. 3-4 Not applicable for baby and children's clothing.

<sup>(1)</sup> Since the use of crosslinking agents is banned, shrinkage values of up to 8% can be tolerated.

## 8.2 Standards for care of natural textiles

To date not regulated

## 9.0 Storage and transport

Criteria apply for the entire textile chain

## 9.1 Storage

Criterion	Best
Separation	Not regulated
Harmful agents during storage	Storage area / room not contaminated by pesticides, formaldehyde, mothproofing agent, exhaust, packaging
Preservation	Use of pesticides/biocides only acc. to EG-BioVO 2092/91 regulations, IFOAM

## 9.2 Transport

Criterion	Best
Harmful agents during transport	Not regulated
Preservation	Pesticides/biocides only acc. to EG- BioVO 2092/91 regulations
Transport containers	Not regulated
Transport means	Must be documented
Transport routes	Must be documented

## 9.3 Packaging

Criterion	Best
Packaging	Not regulated

## 10.0 Disposal / recycling

Wherever possible from the technical viewpoint, clothing should be taken back and reused.

## 11.0 Standards for working conditions

1. It must be assured that valid national working regulations are complied with at the production location; in the case of external companies (sub-contractors), they must be urged to comply therewith. In any event, it must be assured that the following conditions, based on the "Charter for fair trade with Clothing" (1995 version) are complied with in all manufacturing stages.
2. Workers have the right to organize freely and to join independent unions and other interest groups of their choice without prior approval being necessary to do so.

3. Workers have the right to have themselves represented by organizations of their choice in collective wage negotiations. These negotiations are to be conducted without the employees being inadmissibly hindered.
4. The payment of workers shall at least cover their most basic living needs (food, clothing, shelter) and those of the family members immediately dependent on them. This payment shall at least equal the legal minimum wage of the respective country. (The calculations of the United Nations regarding the costs of basic needs can be taken as the starting point here.)
5. The number of working hours per week and the arrangements for payment of overtime correspond, for all workers, to the standards fixed by the ILO (International Labour Organisation) of not more than 48 hours a week.
6. The working conditions as regards safety and health meet international standards.
7. Employers shall not employ children, but only workers of at least 14 years of age.
8. Employees shall pursue a policy aimed at promoting equal rights in respect of the activities performed and payment. This means that employers shall not be guilty of any discrimination on the grounds of race, colour, sex, political or religious creed, social origin or country of origin.
9. Employers undertake to ensure the social security of the workers in the event of pregnancy, illness and incapacitation as a result of accidents at work.

# Part 2

## Quality Assurance

**Issue: 20.01.2000**

Note

Please note the **transitional arrangements** for certification.

You will find further information on these arrangements and on the **declaration of conformity** for IVN label licensees in the **Manual**.

## **1.0 The IVN standard inspection programme for textiles**

The purpose of the IVN standard inspection programme for textiles is to ensure the quality of environmentally compatible textiles produced in accordance with the guidelines of the International Natural Textile Association. The programme consists of company inspections and residue analyses on random samples of the goods produced in all stages of the production process. The programme describes the procedure for certification, as required by Part 2 of the IVN guidelines (quality assurance). The objective of this quality system is to ensure objective, expert monitoring of the processing of textile raw materials produced by organic farms and other fibres permitted by the guidelines in all stages of the production and distribution process.

### **1.1 Definition and principles**

- 1.1.1 Companies who are certified are under an obligation to undergo regular inspection and residue testing.
- 1.1.2 All products covered by certification and the components of such products made from raw materials in accordance with the guidelines are subject to testing.
- 1.1.3 All stages in the production of certified goods are subject to testing.
- 1.1.4 The licensee is responsible for exercising due care in testing and inspection.
- 1.1.5 Residue testing is carried out over the entire production process in accordance with a distribution key.

### **1.2 Stages in procedure**

The IVN standard textile inspection programme includes the following stages:

#### **1.2.1 Enquiries**

The IVN certification agency accepts enquiries concerning the inspection programme in writing and by telephone. Persons submitting enquiries receive information on the main principles of the inspection programme and the documentation required, In addition to oral information, companies which are interested can obtain an information package containing the following documents:

1. Description of IVN standard inspection programme
2. Inspection contract
3. Current IVN fee schedule

4. Copy of the current IVN guidelines
5. Further information on the activities of the certification agency (presentation and press releases)
6. Sample certificates

Upon specific request by the company to be monitored, the inspection documents may be made available to other associations or organizations for certification. In such cases, a signed declaration explicitly permitting the certification agency to release the information concerned is required.

### **1.2.2 Conclusion of contract**

By signing two copies of the inspection contract, the company to be monitored undertakes to participate in the IVN inspection programme. At the same time, the company is required to submit the documents listed below to give an indication of its current organizational structure and to allow effective preparation of the initial inspection. Apart from the company questionnaire, the documents required may include the following, depending on the type of company:

- 1 List of products to be labelled
- 2 Plan or sketch of plant
- 3 List of materials
- 4 Samples of packaging and promotion materials
- 5 Data release declaration (if required)
- 6 Other information relevant for inspection purposes

The certification agency then returns a signed copy of the contract to the company.

### **1.2.3 Inspection**

Inspections are normally carried out once per calendar year. The company to be inspected is given two weeks' notice in writing.

The inspector is selected by the IVN certification agency, taking into consideration the expertise and experience of the inspectors available in the various production areas concerned. Inspectors must be allowed to inspect all documents relevant to inspection. Inspectors are under an absolute obligation of confidentiality and carry credentials to prove that they are acting on behalf of the certification agency. Indiscretions on the part of inspectors could lead to the loss of the accreditation of the certification agency. A company to be inspected may refuse to be inspected by a specific inspector on one occasion for good cause.

Careful preparation by the company is essential if inspection is to proceed smoothly, effectively and properly. All the documents required should be ready for inspection. In addition, arrangements must

be made for the responsible persons to be available and sufficient time must be allowed for the inspection.

Inspection dates are selected on the basis of the type of production and on the time schedules of inspectors. Although the duration of inspection depends on the type of company, one day should normally be sufficient. The IVN certification agency reserves the right to conduct tests on unannounced random samples and to conduct follow-up inspections. The inspection procedure is described in more detail in Section 1.3 "Inspection procedure" below.

#### **1.2.4 Certification process**

The certification process mainly consists of the processing by the certification agency of the inspection report issued by the inspector and countersigned by the company and any other documents of the company relevant to inspection. The certification committee of the agency then decides whether action in accordance with the IVN sanctions list is necessary in order to ensure full compliance with the guidelines. The company is informed of any requirements in this respect in a written notification, together with the deadlines set for remedial action. The company has the right to lodge an official appeal against the notification within 14 days. This right of appeal must be mentioned in the notification. If the responsible inspector conducted the inspection himself, the certification procedure must be completed by a second inspector. If all the relevant information and documents required are provided by the company and the overall results of the inspection are satisfactory, the company receives a certificate to the effect that it has been successfully inspected in accordance with the IVN guidelines (company certificate). At the same time, the company receives an invoice for the inspection in accordance with the current IVN schedule of fees.

#### **1.2.5 Recertification**

Certification by bodies other than the IVN certification agency may be taken into consideration in IVN certification procedures if such certifications are compatible with the IVN guidelines. The IVN certification agency is responsible for the review and approval of other certifications.

### **1.3 Inspection procedure**

The inspection itself consists of several stages. The order in which the various stages are carried out is determined by the individual inspector.

#### **1.3.1 Kick-off meeting** with the responsible employees of the company.

- Overall explanation of the inspection procedure.

### **1.3.2 Inspection and completion of basic company documentation**

- Updating and completion of the company questionnaire, article list, list of suppliers (e.g. for materials), origins of raw materials (e.g. raw fibres), building plans, etc.

### **1.3.4 Tour of plant**

The inspection need not necessarily cover the following items or be limited to these items. This list is intended solely as an indication of the inspection which may be necessary to ensure the controlled production of certified products:

- The statements made in the company questionnaire may be verified.
- The inspector may inspect the system for the separation and identification of goods and the company's quality system in order to ensure that the company has the human and technical resources and the space required for storing and processing biological raw materials separately.
- The inspector may assess the configuration of the plant with respect to separation: i.e. whether certain rooms or machines are used exclusively for natural textile production or whether natural and other textiles are produced using the same facilities at different times.
- In addition, the questions of cleanliness and separate storage may be relevant.
- The inspector should assess the identification system, e.g. marked machines or containers, used in production.
- The inspector may assess the internal documentation of the production process within the company, e.g. using control cards or machine allocation plans.

### **1.3.5 Samples for testing**

- Samples for testing are taken in accordance with a separate test plan either by the inspector or by the test laboratory commissioned to perform the tests. The number of samples taken and the scope of testing is based on the requirements stated in the IVN Guidelines, Part 2.

### **1.3.6 Verification of company documentation**

- Detailed inspection of other documents relevant to the inspection, such as supplier lists, technical process descriptions, formulations, safety data sheets, etc.
- Inspection of waste water treatment reports issued by state or municipal bodies, if available.
- Inspection of test results and authenticity tests, if relevant.

### 1.3.7 Inspection of material flow documentation

- Verification of purchasing and sales documents, such as delivery notes, invoices and the performance of material flow inspection.
- It is normally not possible to conduct a material flow inspection during the first inspection. The steps required for material flow inspection must therefore be determined and documented. The aim must be to allow precise calculation of material flow between the stages in the process and the explanation of material losses. In other words, the documents which can be used as data sources must be defined during the first inspection.

### 1.3.8 Inspection reports

- All the results of the inspection are recorded by the inspector in an inspection report, which must be countersigned by the plant manager. One copy of the inspection report is retained by the company. Following the completion of the inspection, this report, together with any documents made available by the company and a recommendation by the inspector concerning certification, are submitted to the certification agency which then reviews the documents and notifies the company of its decision on the basis of this review.

### 1.3.9 Final meeting

- A final meeting is held with responsible company employees to inform them of the main results of the inspection, possible improvements, requirements, etc.

In the event of a random inspection, the inspector normally concentrates on a specific section of the plant. Follow-up inspections concentrate on any areas where deficiencies were detected.

## 1.4 Appeals

If a company disagrees with the results of inspection or with the conditions imposed, the procedure for appeals is as follows:

1. Any appeals must be made in writing to the certification agency within 14 days of the date when the company is notified of the results of the inspection.
2. The certification agency takes a decision on the appeal and informs the company of the options open to it.
3. If it is not possible for the company and the certification agency to reach agreement, the agreed arbitration procedure must be initiated.

## 1.5 Data protection

In order to remain impartial, the certification agency and its personnel operate in accordance with the following principles:

1. The certification agency and its personnel undertake to keep any information coming to their attention in connection with inspection strictly confidential and not to divulge any information concerning the company to any third party without the express permission of the company.
2. The certification agency and its personnel will not perform any consultancy services for companies covered by the inspection procedure.
3. The certification agency and its personnel will act impartially and will not engage in any trading activities.
4. The services offered by the certification agency are available to all companies.

## 1.6 Fees and scope of services

Inspections are carried out at the expense of the company. The certification agency will use its best efforts to keep the cost of inspection to a minimum. In this context, costs may be reduced by combining several inspection visits to form a tour of inspection lasting one week. All inspections are charged at the rates stated in the latest valid edition of the IVN fee schedule. The certification agency reserves the right not to issue a certification notification or an inspection report until the fees due have been paid.

Apart from the actual inspection visit itself, the following services are performed by the certification agency:

- planning and organization of inspection
- preparations for inspection by the inspector
- travelling expenses to and from plant
- preparation of inspection report
- processing of inspection file by certification agency
- issue of notification
- issue of certificates
- contacts with authorities and textile industry associations

- provision of information, for example concerning the guidelines
- training of certification agency personnel
- other correspondence (replying to enquiries, etc.)
- Documentation and information service concerning relevant areas of the natural textile sector
- Organization of specialist symposia

## **1.7 Catalogue of sanctions**

In the event of non-compliance with the IVN Guidelines, the measures listed in the IVN catalogue of sanctions may be taken.

## **2.0 Residue testing**

Samples for residue testing may be taken either by the inspector during the inspection visit required for certification or by a representative of the test laboratory. Residue tests are conducted only on random samples; where possible, testing is scheduled to allow the early detection of residues in the finished product.

### **2.1 Scope of testing**

#### **2.1.1 Test frequency**

Tests are conducted once per year.

#### **2.1.2 Sampling**

Samples are taken by the inspector or the test laboratory.

#### **2.1.3 Sample numbers**

The number of samples taken depends on

- \_ the size of the company = the turnover realized with certified natural textiles
- \_ the types and numbers of ancillary materials and chemicals used

Sampling based on the turnover realized with certified natural textiles offers the greatest degree of transparency and is easy for the companies affected to understand:

Turnover (DM)	Number of samples
up to 1 million	2
up to 3 million	4
up to 5 million	6
up to 7 million	8
up to 10 million	10
each 5 million above 10 million	3 additional samples each

#### 2.1.4 Test fees as a percentage of turnover (examples)

Assuming test costs of DM 1,000 per sample, the cost per company for residue testing would be as follows:

Turnover (DM)	Number of samples	Test cost (DM)	% of turnover
1 million	2	2000	0.2
5 million	6	6000	0.12
10 million	10	10000	0.1
each additional 5 million	3 additional samples each	3000 each	0.06

#### 2.1.5 Sampling locations within processing plants

Depending on the stage in the production process, samples may either be taken from incoming materials or from finished goods. Samples are taken in such a way as to ensure good statistical distribution over the entire production process and the inclusion of all possible sources of contaminants.

#### 2.1.6 Test criteria for textile processing

The scope of testing and the test parameters for samples taken depend on the processing stage concerned and the degree of processing. Reasons for the scope of testing will be provided on request.

#### 2.1.7 Verification of chemicals and ancillary materials used

If there is good reason for serious doubt concerning the chemicals and ancillary materials used, further samples may be taken in addition to the routine samples.

### 2.1.8 Additional, random samples

Additional samples of goods may be taken from the supply chain at any time without advance notice. The cost of such samples will be charged to the company. In such cases, at least one sample will be taken. Random samples will be limited to no more than 10 % of the number of samples required annually for routine samples.

### 3.0 Orientation values

Residue tests are carried out on samples taken from the normal run of production. The orientation values may therefore be exceeded within the certified production chain. The action required in such cases is determined by the IVN Control Committee. Further details are given in the IVN catalogue of sanctions.

### 3.1 Residues in fibres and woven and knitted fabrics

Substance	Test procedure	Outer wear	Babywear and clothes with skin contact
Amines (azo dyes)	LMBG § 35, 82.02	30 mg/kg	30 mg/kg
AOX	DIN 38409-14 i.A.	--	--
Disperse dyes	HPLC/DAD	30 mg/kg	30 mg/kg
Formaldehyde and other short-chain aldehydes	Jap. Law 112	20 mg/kg	20 mg/kg
Glyoxal	HMBT/UV-VIS	<20 mg/kg	<20 mg/kg
pH for wools	DIN ISO 1413	4.5 – 9.0	4.5 – 9.0
pH for other textiles	DIN ISO 1413	4.5 – 8.0	4.5 – 8.0
PCP, TeCP	DFG S 19 GC/ECD	0.01 mg/kg	0.01 mg/kg
Total pesticides	DFG S19, GC/MS, /ECD, /PND		
Cellulose fibres, silk		0.1 mg/kg	0.1 mg/kg
Shorn wool, conv.		1.0 mg/kg	1.0 mg/kg
Shorn wool, cert. org		0.5 mg/kg	0.5 mg/kg
Heavy metals (in eluate to DIN 54020, analysis by AAS, ICP/MS to DIN 38406, figures in mg/kg referred to textile)			
Antimony (Sb)		0.2 mg/kg	0.2 mg/kg
Arsenic (As)		0.2 mg/kg	0.2 mg/kg
Lead (Pb)		1.0 mg/kg	0.2 mg/kg
Cadmium (Cd)		0.1 mg/kg	0.1 mg/kg
Chromium (Cr)		2.0 mg/kg	1.0 mg/kg
Chromium VI (Cr-VI)		0.5 mg/kg	0.5 mg/kg
Cobalt (Co)		4.0 mg/kg	1.0 mg/kg
Copper (Cu)		50 mg/kg	25 mg/kg
Nickel (Ni)		4.0 mg/kg	1.0 mg/kg

Mercury (Hg)		0.02 mg/kg	0.02 mg/kg
Selenium (Se)		0.2 mg/kg	0.2 mg/kg
<b>Fastness requirements</b>		<b>BEST</b>	
Ironing fastness	DIN 54022 ISO 105 X11	depends on material	
Rubbing fastness, dry	DIN 54021 ISO 105 X12	3 - 4	
Rubbing fastness, wet	DIN 54021 ISO 105 X12	2	
Perspiration fastness, alkaline and acid	DIN 54020 ISO 105 E04	3 - 4	
Light fastness	DIN 54004 ISO 105 B02	4	
Shrinkage values when wet	DIN 53920 ISO 6330	Guideline: 5% - 8% <sup>(1)</sup> max. 3%	
Knitted/hosiery: Woven: Shrinkage values when dry		max. 3%	
Saliva fastness	LMBG B 82.10-1	FAST for baby and children's clothing	
Washing fastness when washed at 60°C	DIN 54010 ISO 105 C03	min. 3-4 not applicable to baby and children's clothing.	
Dioxins / furans (I-TE)		--	
Isocyanate		--	

<sup>(1)</sup> As the use of crosslinking agents is not permitted, shrinkage values of up to 8% must be tolerated.

- Currently no orientation value defined .

### 3.2 Minimum standards for additional materials and accessories

The following deviations from the IVN criteria for "BEST" applies to additional materials and accessories:

1. There are no restrictions on the growing of raw materials.
2. Ammonia treatment, optical brighteners and softeners are allowed.
3. Additional materials and accessories made from these raw materials must meet the standards laid down in the table below:

Parameter	Test method	Orientation value
Amines (azo dyes)	LMBG § 35, 82.02	30 mg/kg
AOX	DIN 38409-14 i.A.	--
Disperse dyes	HPLC/DAD	30 mg/kg
Formaldehyde and other short-chain aldehydes	Jap. Law 112	300 mg/kg (no skin contact) 75 mg/kg (skin contact) 20 mg/kg (baby clothes)
Glyoxal	HMBT/UV-VIS	<20 mg/kg
pH for wools	DIN ISO 1413	4.5 – 9.0
pH for other textiles	DIN ISO 1413	4.5 – 8.0

PCP, TeCP	DFG S 19 GC/ECD	0.05 mg/kg
Total pesticides	DFG S19, GC/MS, /ECD, /PND	0.5 mg/kg
Heavy metals (in eluate to DIN 54020, analysis by AAS, ICP/MS to DIN 38406, figures in mg/kg referred to textile)		
Arsenic		0.2 mg/kg
Lead		0.2 mg/kg
Cadmium		0.1 mg/kg
Chromium		1.0 mg/kg
Cobalt		1.0 mg/kg
Copper		50 mg/kg
Nickel		1.0 mg/kg
Mercury		0.02 mg/kg
Nickel in accessories	LMBG / BGVO	0.5 µg/cm <sup>2</sup> week

### 3.3 List of pesticides tested

Parameter	Orientation value mg/kg	Parameter	Orientation value mg/kg
<b>Chlorinated hydrocarbon pesticides</b>		<b>Organophosphate pesticides</b>	
Hexachlorobenzene (HCB)	0.01	Diazinon	0.01
α-HCH	0.01	Propetamphos	0.01
β-HCH	0.01	Phoxim	0.05
γ-HCH (Lindane)	0.01	Bromophos-ethyl	0.01
Heptachlor	0.01	Coumaphos	0.01
Heptachlorepoxyde	0.01	Ethyl parathion	0.01
Aldrin	0.01	Methyl parathion	0.01
Dieldrin	0.01	Monocrotophos	0.05
Endrin	0.01	Malathion	0.01
Mirex	0.01	Quinalphos	0.01
Methoxychlor	0.01	Dimethoate	0.01
o,p-DDT	0.01	Profenophos	0.01
p,p-DDT	0.01	Dicrotophos	0.01
DDE	0.01	DEF	0.01
TDE	0.01	Azinphos-methyl	0.01
Endosulfan	0.01	Methamidophos	0.01
Toxaphene	0.1		
PCP	0.01	<b>Non-chlorinated insecticide</b>	
2,3,5,6-TeCP	0.01	Carbaryl (Sevin)	0.1

<b>Pyrethroids</b>		<b>Herbicides</b>	
Cyfluthrin	0.1	2,4-D	0.05
Cyhalothrin	0.1	2,4,5-T	0.05
Cypermethrin	0.1	MCPA	0.05
Deltamethrin	0.1	MCPB	0.05
Permethrin	0.1	Mecoprop	0.05
Fenvalerate	0.1	Dichlorprop	0.05
		Trifluralin	0.01

### 3.3.1 Fibre-specific test parameters

**Cotton and other cellulose fabrics** entire test programme

**Wool** No testing for herbicides.

**Silk** No firm knowledge base.

Insecticides and herbicides cannot normally be detected.

Tests must be made for fungicides (chlorinated phenols, PCP, TeCP)

**Cont. bio. yarns** Yarns made from controlled biological fibre may contain pesticides and must therefore be tested for pesticides until further notice.

### 3.4 List of allergizing dyes (selection)

Disperse Blue 1
Disperse Blue 35
Disperse Blue 106
Disperse Blue 124
Disperse Orange 3
Disperse Yellow 3
Disperse Orange 37/76
Disperse Red 1

### 3.5 List of carcinogenic dyes

C.I. Basic Red 9
C.I. Disperse Blue 1
C.I. Acid Red 26

**Annex:****List of abbreviations used**

AOX	Sum parameter for absorbable organic halides, where "X" stands for the halogen in question. The halogen fluorine is however not included in the sum parameter AOX.
APEO	Alkylphenoethoxylates
CO	Cotton
CSB	Chemical oxygen demand (COD); indicating the amount of oxygen used for oxidation of organic substances in water.
DTDMAC	Di-talg(C16/18)-dimethyl ammonium chloride
DTPA	Diethylenetriamine pentaacetic acid
EDTA	Ethylenediamine tetraacetic acid
LAS	Linear alkylbenzenesulphonates
$\alpha$ -MES	$\alpha$ -methylestersulphonate (C16/18)
NTA	Nitrilo-triacetic acid
QUATS	Quaternary ammonium compounds

INTA definition of natural dyes:

Natural dyes are those obtained from minerals, plants and insects. Natural dyes may not be synthesized.

June 2007

For the Board of Demeter International

Thomas Lüthi, President