



## **Naturland Standards**

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## **Preface**

*Certified organic agriculture, as practised in accordance with the written standards of Naturland - Registered Association for Organic Agriculture, has become an established concept. A comparison of the first draft of the "Standards for Organic Agriculture" passed in 1982 after the association was founded with the currently valid version will reveal two aspects of this modern form of land cultivation: on the one hand its dynamism and potential for development and on the other its stability and consistency.*

*The development of standards and their implementation are the core mission of any certified association for organic agriculture. Standards have to be proven to be workable. They have to adapt to changing conditions and extended to cover new areas. The growth of Naturland and its organisations since the association's establishment is a reflection of the success of its work and confirms that this form of cultivation has gained wide acceptance among farmers, food producers and consumers.*

### **Standards for specific areas**

*The Naturland standards existed long before the EU passed its first legal regulations on organic agriculture. Even today the consistent development of our standards provides major impetus; they incorporate ideas that are taken seriously by the legislators.*

*As they stand today, Naturland's standards are not limited solely to the specific method of cultivation described in detail in its standards on plant production and animal husbandry. For some years now, standards have been developed to cover many specific areas which require special guidelines, such as horticulture and viticulture, bee-keeping, harvesting of wild grown products, and aquaculture. In the same measure that the standards have evolved to cover various forms of cultivation, they also incorporate the next stage - the processing of this produce. The production and processing of food produce, such as bread and bakery products, milk and dairy products, beer and meat, etc. are described in specific standards for different categories of food produces.*

*Whilst foodstuffs are the original sphere of interests, standards have also been drawn up to cover other areas of cultivation, such as organic forestry and timber processing.*

### **Adherence to the elementary principles**

*To ensure that Naturland's standards develop consistently, it is essential that the fundamental principles of organic agriculture are adhered to. It is also crucial to withstand hasty and short-lived trends and any temptation to sacrifice elementary principles for the sake of immediate success. Standards can only provide a framework, since organic agriculture cannot function on the basis of mere regulations. It is realised by consensus on a common aim. Nevertheless, exact and binding rules are necessary in practice, whilst leaving enough flexibility for adaptation to the particular requirements of each agricultural operation.*

*The experts - farmers, consumers, processors and scientists - who contribute to the development of Naturland's standards have always offered new solutions to the problems posed. The framework of Naturland's standards is dictated by the core fundamental principles of certified organic agriculture: the obligation to treat the elementary basics of our lives with prudence and responsibility. A common starting-point, sustained management, the active protection of nature and the climate, safekeeping and preservation of the soil, air and water and the protection of the consumers are at the heart of all Naturland's standards.*

### **Naturland's standards - basis for certification**

*Standards will only endure and make a lasting impact if they can be clearly monitored and be put into consistent practice. Any decisions involved have to be seen to be made impartially and on neutral, unbiased terms. This is guaranteed by calling on the services of independent and autonomous committees - standards committee, inspection body and certification committee - as well as by the composition of the committees - consisting of diverse interest groups such as scientists, agriculturists and consumers. Independent inspection procedures and the consistent application of Naturland's standards form the basis of the production of high quality products cultivated in a balance with nature and the environment. This quality is visibly documented by the Naturland® logo.*

### **Naturland's quality management - national and international**

*The Naturland association is a member of the international umbrella organisation IFOAM, which issues binding standards in the fields of both production and processing. The accreditation by IFOAM confirms that Naturland's standards und die Zertifizierung fulfil the strict requirements of IFOAM*

*For producers, processors and consumers, the accreditation by IFOAM is proof of an international level of quality management, reliability concerning the certification of organically grown produce, from its cultivation to the finished product. In 1997 Naturland was the first German certification organisation for organic agriculture to complete the IFOAM accreditation programme successfully, and to receive accreditation by IFOAM. In 1998 Naturland also received accreditation according to the European norm DIN EN 45011/ISO 65.*

## Part A. General Regulations

### I. Contracts and certification procedures

#### 1. Conditions to be fulfilled prior to the conclusion of a producer contract

Prior to the conclusion of a producer contract, the association must be given the opportunity to acquire comprehensive information on the external and internal conditions of the farm.

The producer is obliged to provide any information necessary to assess the conversion conditions. This includes particularly the method of management that has been practised to date (use of mineral fertilizers, management of synthetic chemical pesticides, soil management, etc.), the economic situation and the environmental conditions (sources of potential contamination, e.g. sewage sludge, traffic and other causes must be reported before conversion can begin). If possible causes of contamination with dubious or harmful substances are detected, analyses have to be carried out prior to the conclusion of a producer contract. These analyses may show that a producer contract is only possible under specific conditions or not at all. A comprehensive description of the areas of land cultivated and of the production and storage sites has to be made.

#### 2. Producer contract

On signing the producer contract, the producer commits himself to adhering to Naturland standards and to extending the conversion to all areas of the farming unit that are managed or farmed under his responsibility (whole farm conversion).

The principle of the manager's unit is being applied, i.e. one and the same farm manager must not manage a conventional and an organically operated farm at the same time<sup>1</sup>.

The conclusion of a producer contract is possible at any time of year.

The conclusion of a producer contract does not entitle the producer to the use of the Naturland<sup>®</sup> logo. A separate license agreement has to be concluded for this.

#### 3. Standards

These standards are obligatory for all producers that have concluded a producer contract with Naturland e.V. (registered association). They have been tested and put into practice in this form. If single regulations or parts of these standards should not be applicable under different climatic conditions, the Naturland standards committee has to draft an amendment/addition to the standards which has to be passed by the assembly of delegates. Every member is entitled to submit amendment proposals to the standards committee, provided that further Naturland members (minimum of 10) support this proposal. Amendment proposals will be legally evaluated by the standards committee and submitted to a competent group of professionals for comment.

Naturland's certification committee is entitled to allow a contractual producer to diverge from Naturland standards in one or two respects, where the exception is justified, and for a limited period of time, provided that the general management of the agricultural operation according to Naturland's standards is not adversely affected.

Only the latest version of the standards as passed by the assembly of delegates are in force. The Naturland association will inform the contractual producers of any changes. If the standards are changed, a deadline can be set for the implementation of these changes by the producers.

Violations of the standards will be prosecuted according to the sanction catalogue (producer contract appendix IV).

The validity of higher state laws and regulations remains unaffected by these standards. The requirements of the regulation (EEC) No 2092/91 (EU regulation Organic Farming) and the subsequent amendments, particularly the regulation (EC) No 1804/1999 (Regulation for the incorporation of animal production) have to be observed.

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<sup>1</sup> manager's unit: composed of manager and farming unit. The manager is the natural person or legal entity running a farm independently and responsibly (farm manager). The farming unit is a clearly marked managing sphere on which distinctly separate records are kept for inspection and documentation.

#### **4. Conversion**

During conversion to organic agriculture, the manager introduces management practises in accordance with the principles of organic agriculture throughout the entire operation.

The conversion of the entire farm must occur under economically acceptable basic conditions. It can therefore take place gradually to cover ever greater areas of the farmland and the operation cultivated in accordance with the standards. However, the time span for conversion set down in section A I.9 of these standard has to be complied with. Where conversion is carried out gradually, it is imperative for the areas under various stages of conversion to be clearly and explicitly distinguishable and separated. The same applies to animal produce; organic and conventional feeding and husbandry at the same time within one animal species are not allowed.

Converted areas and stalls resp. animals must not alternate between organic and conventional farming.

The process of conversion will be attended by an adviser authorised by the Naturland association. In cooperation with the adviser, a conversion plan has to be devised. This will contain a plan for crop rotation which includes the areas of land and the crop to be converted annually, a humus analysis and a fertilisation programme scheme as well as a plan for animal husbandry (stocking rate, feeding plan, assessment of the animals' needs). The Naturland association has the right to request current soil analyses.

It is possible to commence conversion at any time of the year.

#### **5. Changes in the farming system**

If new fields (e.g. purchase of land or lease of land) are taken under organic cultivation on a farm that is in conversion or already certified, these areas too have to comply with the usual conversion period (see A. I.9. of these standards). These new areas have to be clearly distinguishable and separated according to their stage of conversion.

The marketing deadlines according to section A. I.9 and the regulations under B. II.3. of these standards apply to brought-in animals and to the respective conversion periods.

#### **6. Documentation and inspection**

Naturland e.V. must be provided with the latest data (e.g. livestock, cultivation). The product flow (e.g. brought-in feed, seeds and plant material and fertilizers as well as the sale of produce) has to be recorded according to Naturland's specifications. In addition, the farm must maintain livestock records (e.g. about input and output of livestock, medication). The farm is also obliged to report any factors that may have a negative influence on the quality of the produce (e.g. drifts). If applicable, the Naturland certification committee can demand analyses.

Previously announced and/or unannounced visits on site and inspections by Naturland's representatives will be made at least once per year to check on compliance with the standards. These representatives must be given full access to and insight into all relevant information concerning the agricultural operation. Any documents requested concerning the management of the farm have to be shown, and all relevant questions have to be answered.

#### **7. Certification**

The Naturland certification committee confirms that the producer is adhering to the standards with the annual certification letter. If the producer violates current standards, the penalties listed in the catalogue of sanctions, which is part of the producer contract, can be imposed.

#### **8. Approval**

Approval of the enterprise documents the successful conclusion of the conversion period and will be granted by the Naturland certification committee (CC).

The period for conversion of the whole farm until approval takes at least two years. In the case of gradual conversion, it takes five years at the most. The conversion period has to be concluded at the latest by the sixth harvest after commencement of the conversion period.

Prior to the approval of a farm, all areas of land must have been cultivated in accordance with the standards for a period of at least two years. The applicable Naturland standards on animal husbandry and all other forms of farming must also have been implemented where relevant.

Another prerequisite for certification of a farm is proof of sufficient knowledge and ability in the field of organic agriculture. Apart from practical work experience, participation in one of Naturland e.V.'s introductory seminars is mandatory (not applicable in all countries).

## 9. Labelling and marketing

The application of the Naturland® logo is regulated in a particular licence agreement with the Naturland® Trademark Company.

For products which have been produced in compliance with the Naturland standards and which are to be marketed with reference to the organic production, to Naturland or with the Naturland® logo, the following deadlines and conversion periods for management in compliance with the standards must be adhered to:

### Vegetable products

24 months prior to their having been sown or 24 months prior to the beginning of growth in feed crops.

36 months prior to the harvest in the case of permanent crops, (except feed crops).

The starting point considered as management in compliance with the standards is that following the demonstrable conclusion of management measures not complying with the standards.

It is permitted to label vegetable produce only as a **conversion product** - with a respective note - if the product consists of one sole ingredient of agricultural origin and is coming from an area of land that has been cultivated in compliance with the standards for at least 12 months before the harvest of the respective ingredient.

### Animal products

eggs: 6 weeks

milk: 3 months (from 24/08/2003: 6months)

#### meat:

- poultry 10 weeks

- pigs: 4 months (from 24/08/2003: 6 months)

- small ruminants: 4 months (from 24/08/2003: 6 months)

- cattle: 12 months, at least three quarters of their lifetime

honey: see chapter IX. (separate standards)

Animal products may only be labelled if the farm has been in conversion for at least 12 months and the above mentioned marketing deadlines for the respective products are met.

With conversion of the entire farm at the same time the conversion period will be reduced to 24 months altogether.

Beef may only be labelled under the Naturland® logo or with reference to Naturland® or with reference to the Naturland standards under the condition that the respective animals have been born on an organic farm.

In addition, the conditions listed under part B. II.3 have to be observed for brought-in animals, for bee-keeping the conditions of the separate standards for beekeeping have to be observed (see chapter IX.).

## **II. General (management-) regulations resp. other predominant provisions**

### **1. Storage**

Storage under special conditions (controlled atmosphere, temperature control, drying and humidity regulation) is permitted. The application of chemical storage-protection agents is prohibited. Exclusive storage measures that exclude the contamination of the harvest with harmful substances are permitted. This also applies to the materials and detergents used.

After-ripening by means of chemical substances<sup>2</sup>, and the application of sprout inhibitors and radioactive irradiation, are prohibited.

If there are products of different certification status on the farm, they have to be stored clearly and separately. Substances which are prohibited by these standards and contravene the conversion status in question may no longer be stored on the farm.

### **2. The sale of purchased merchandise**

The sale of purchased products for direct marketing, i.e. in farmhouse shops, on market stalls and the like, is possible. Regional products should be preferred wherever possible. Separate bookkeeping for all the purchased merchandise has to be done. The labelling of the products must be unequivocal with respect to their origin and method of production. Farm products and bought products have to be declared separately. Conventional merchandise may only be sold if there is proof that equivalent organic products are not available. These products have to be clearly labelled as "conventionally produced".

It is not permissible to offer one and the same product from organic and conventional cultivation at the same time.

### **3. Purchase of means of production**

If means of production (seed and plant materials, farm manure, feed) or animals are purchased they must be certified by Naturland or meet certification standards approved as equivalent by Naturland. If these are not available (the farm manager has to give notice and proof of the non-availability), the means of production can be obtained – in exceptional cases and for a limited period of time - from other farms according to the following priorities<sup>3</sup>: inspected according to EC regulation Organic Agriculture

- extensively farmed within an accordingly inspected programme
- conventionally farmed

Special attention has to be paid to the ecological impact of production means and equipment. Preference is to be given to substances on a natural basis (e.g. oils, fats). Auxiliary materials of rainforest timber is prohibited. Care should be taken to save energy.

### **4. Exchange of farming equipment between different agricultural operating systems (certified organic/conventional)**

The exchange of farming equipment (e.g. in machinery co-operations) between certified organic farms and conventional farms is possible. Farming equipment that is utilized by conventional farms must be cleaned thoroughly in case of contamination with substances that are not in line with Naturland standards before being used on a Naturland<sup>®</sup> farm.

### **5. Use of foil and fleeces, nets and technical mulching materials**

Decomposable matters are to be striven for, e.g. cotton, flax mats, mulching paper or organic foil, as far as these allow a reasonable organic cultivation.

For protected structure coverings like plastic mulches, fleeces, insect netting and silage wrapping, only products based on polyethylene (PE) and polypropylene (PP) or other polycarbonates are allowed. These shall be removed after use and shall not be burned on the farmland. The use of polyvinyl chloride (PVC) based products is prohibited. Recycling is recommended.

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<sup>2</sup> Ethylene gas may be used for after-ripening

<sup>3</sup> The regulations of the EU-Reg. on the purchase of conventional products have to be observed.

Materials that are on the farm already and do not comply with these conditions may be used up during the conversion period.

#### **6. Non-employment of GMO and GMO derivatives**

Genetically modified organisms (GMO) and their derivatives are incompatible with organic cultivation. Products that are produced in compliance with these Naturland standards must be made without the employment of genetically modified organisms (GMO) and/or GMO derivatives. A “GMO derivative” is any material which is produced from or by GMOs but does not contain GMOs. “Employment of GMO and GMO derivatives means their employment as foodstuffs, food ingredients (including additives and flavourings), processing aids (including extraction solvents), fodder, compound fodder, feed materials, feed additives, processing aids for fodder, certain products used in animal nutrition, plant-protection products, fertilizers, soil improvement agents, seeds, vegetative reproduction materials and animals.

#### **7. Social justice**

Operators must respect human rights.

The base rights of the workers living and working on the farms must be respected and meet or exceed the local legal requirements relative to the common local conditions. Equal opportunities must be assured for people of all races, creeds and genders.

- Operators with 10 or more employees must have a policy on social justice which is applicable to the local conditions.
- An existing state system enforcing the basic social rights releases operators from their obligation to develop an own policy on social justice.

## **Part B. Regulations for individual branches of production**

### **I. Plant production**

For all management practices of plant production, the following general principles and regulations for plant cultivation (B. I. 1-7) are obligatory:

#### **1. Humus management and fertilization**

Biologically active soil is the prerequisite for the balanced nutrition of crops. In order to ensure long lasting soil activity and thus crop yields, special attention has to be paid to the basis of soil fertility:

- The humus balance has to be at least at an equilibrium within the margin of varied crop rotation. For permanent crops, this has to be guaranteed by adequate measures such as undersown crops, catch crops, or permanent green.
- Biodegradable matter of microbe, vegetable or animal origin forms the basis of fertilization.
- Given the importance of a balanced lime level for topsoil stability, for the structure and thus the fertility of the soil, and because of acid absorption through precipitation, special attention has to be paid to an adequate lime supply with respect to the area.

Synthetic chemical nitrogen fertilizers must not be used. Mineral and trace element fertilizers that are not easily soluble (see appendix D. I. 1. 1.5) can be used after consulting the adviser. Their application is based on the corresponding soil analyses, observation of plant growth, and the nutrition balance of the whole farm (the so-called Hofor balance sheet).

The amount of farm manure depends on the forage production of the farm and the resulting animal husbandry. The manure has to be processed to make it tolerable for soil and plants. In the case of semi-liquid manure, such treatment is obligatory: the use of stone or straw meal, dilution, ventilation or comparable measures. In the case of dung, a controlled process of decomposition is recommended and can be insisted upon by the adviser if the dung is of inferior quality.

Nutrient losses during storage and the application of liquid fertilizers and dung have to be reduced to a minimum. The contamination of the environment (by odours and pathogenic agents too) has to be avoided. Sufficient storage capacity must therefore be available so that manure is only applied as and when required by the crop and during the vegetation period.

The purchase of organic manure does not primarily serve the purpose of fertilization but is designed to increase the humus supply. Intensification beyond a tolerable extent (over-fertilization) has to be avoided. In case of on-farm husbandry, the brought-in of manure must not exceed a total of 1.4 DU/ha (dung units per hectare), whereby the manure has to be distributed evenly according to the crop rotation over the areas cultivated. The amount of organic manure purchased must not exceed 0.5 DU/ha in any one year; for horticulture (B. III.), cultivation of ornamental plants, herbaceous perennials, copses, Christmas trees (B. V.), fruit cultivation and viticulture (B. VI. und B. VII.) separate provisions apply.

Furthermore care should be taken that the animal runs are not over-fertilized. The number of animals kept and the quantity of feed produced must correspond in such a way as to avoid over-use of the land e.g. over-grazing, with the consequence of damage to the soil (e.g. by erosion).

Ploughing nutrients back in the soil using green compost is recommended on the principle of the recycling of nutrients if it is certain they do not transport harmful residue (Appendix D. I. 1.2; Appendix D. I. 10). Their application is permitted only after explicit approval by Naturland e.V.

Waste and/or urban compost, faecal and sewage sludge are prohibited.

Permitted purchased manure and soil improvement agents are listed in appendix D. I. 1.

#### **2. Pest, disease and weed control**

To encourage healthy plants, prophylactic measures such as site-appropriate crop rotation, tillage, humus management and fertilization, the choice of appropriate stand densities as well as the selection of healthy and resistant plants and seeds are most important.

In greenhouses the optimum climatic regulation as well as the application of beneficial insects are to be given special importance. The self-regulating potential of an ecological system has to be backed up by landscape management and other methods appropriate to the protection of species, for example planting hedges and installing nesting sites and humid zones.

The use of synthetic chemical substances is prohibited. A list of the plant-protective agents permitted is given in appendix D.I. 2.

Weeds are, as accompanying plants of crops and as the habitat of fauna, a prerequisite for a varied community of species. The aim of regulation is therefore the containment of weed infestation to a tolerable extent, and not the complete elimination of the weeds. Apart from prophylactic crop management measures, direct intervention in the form of mechanical (e.g. currying, hoeing) and thermal (e.g. flaming) processes is permitted; besides there being further measures like mulching and grazing (especially in Christmas tree cultivation) available.

### **3. Seed and plant materials (incl. vegetative propagation material)**

The seed and plant material applied must – as far as available – be certified by Naturland or meet certification standards approved as equivalent by Naturland<sup>4</sup>. If this is not available the farm manager has to give notice and proof of its non-availability.

The use or dressing of seeds or of plant material with synthetic chemical pesticides is not permitted.

The seed and plant materials used may only be treated with the substances listed in annex D. I. 2. 2.2 and 2.3. When using dressed seeds (pilled or in sheet form), care should be taken that the materials used in this process are considered harmless under these standards.

The strains cultivated (their combination with undergrowth, growing methods) should be suitable to local conditions. Criteria are primary low susceptibility or greatest tolerance of and resistance to diseases. In the selection of strains and varieties, care must be taken that genetic variety can be guaranteed.

### **4. Tillage**

The tillage process shall be such as to conserve the natural layers of the soil structure. This is done by employing the appropriate machinery. Special attention must be paid to the adequate humidity of the soil during the tilling process.

### **5. Landscape management**

A farm - as a part of the natural system - is especially dependent on an intact ecological system. The farmer is therefore obliged to conserve and, if required, to recreate structural elements of the landscape, such as hedges, balks, humid areas, oligotrophic grassland and others. This applies especially to large field units and serves the promotion of beneficial organisms and the self-regulation of the eco-system.

Because cultivation and animal husbandry are to be appropriate to local conditions, organic farming methods are especially suitable for use in sensitive areas (e.g. protected water shed areas). By creating extensive bands of grassland as buffer zones alongside unstable ecological systems (e.g. rivers and lakes), precautions are taken against potential soil loss and nutrient input.

### **6. Soil and water conservation**

The burning of organic matter (e.g. slash-and-burn, burning of straw) is only permitted in exceptional cases. The clearing of primary forest is prohibited. Measures suitable to avoid the erosion of soil must be taken. Excessive exploitation and exhaustion of water resources is not allowed. The farm management must avoid the salination of soil and water.

### **7. Crop production**

Crop rotation is the basis of agricultural plant production on which the biological cycle in organic agriculture is built. It serves the purpose of creating long lasting soil fertility and controlling the weeds, diseases and pests at the same time. It provides the farm with good yields and economic stability, thus ensuring long-term viability. For this reason, a minimum of one fifth of the crops on the arable land have to be legumes. This proportion may be reduced with the approval of the adviser, if either the conditions are very good (to at least one sixth), or if the location is particularly susceptible to the loss of nutrients.

During crop rotation, winter and summer crops should complement each other in their effects to prevent the negative developments of monoculture. Variety is an essential characteristic of organically cultivated fields. It should also be practised in the choice of seed mixtures for forage growing as well as for catch crops and undergrowth. Special attention has to be paid to ensuring sufficiently long periods between the cultivation of the same kind of crops.

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<sup>4</sup> The aim is to obtain seed and plant materials from organic origins only by 31/12/2003.

*Part B.; I. Plant production*

The washing out of nutrients must be prevented by suitable cultivation measures (e.g. undergrowth, ploughing rotas commensurate with local conditions).

## **II. Livestock production**

As far as the present Naturland standards do not lay down any further requirements the guidelines of the regulation (EC) No. 1804/1999 are valid at least. The animal stocking density permitted is listed in annex D. I. 4.

### **1. Animal husbandry**

#### **1.1 General requirements**

The husbandry conditions must enable the animal to behave in a way natural to the species. This includes their behavioural needs of moving, resting, feeding, social and reproduction habits as well as all other behavioural needs of the particular species. Open cow-sheds and pens meet these requirements to a greater extent than other systems.

There has to be sufficient bedding for all the animals, where straw or comparable materials (e.g. litter meadow cutting, hay, spelt glumes) have to be used. As far as it is available, straw from other certified organic farms or from areas of a low cultivation intensity must be used.

Stables with a fully perforated floor (fully slatted floors, cage rearing, flat decks) are not permitted since they do not correspond to the animals' needs, at least 50% of the ground floor has to consist of solid material (i.e. no slots or the like). Sheds must provide sufficient lighting and a good climate. The proportion of the resting area to total area must be sufficient to allow all the animals to rest at the same time.

Restructuring and the erection of new buildings have to be done in the light of the latest knowledge on animals' needs, and must be executed in agreement with the Naturland adviser. Stanchion pens are not allowed in new buildings.

The animals must have outdoor access and/or access to grazing land<sup>5</sup>. According to the animals' needs there have to exist suitable means to protect them from extreme weather conditions while being on grazing land.

For all animal species the minimum sizes for stables and outdoor access areas as per appendix D. I. 5 have to be observed<sup>6</sup>. In case a definite appropriation to stable and outdoor access areas is not possible the requirements for total access areas must be met.

#### **1.2 Cattle**

The husbandry system of cattle-keeping should aim to meet the animals' need to move about freely and be stimulated by the light and climatic conditions in the cow-shed. Loose housing stables with a year-round outdoor access, possibly with a grazing area, therefore take preference. If in loose housing stables without access to grazing areas the animals must have outdoor access all year round<sup>7</sup>.

##### **1.2.1 Dairy farming**

It is prohibited to keep the dairy cattle tied up permanently.

They must be given the opportunity to graze (throughout the grazing season) or to go outdoors the whole year.

In new or restructured stables, slatted floors in the walking area must consist of broad slats. Special attention has to be paid to careful construction. Where slatted floors already existing, missing slats in the walking area have to be replaced.

Where the animals are tied up, their natural habits in lying down and standing up have to be considered.

It is prohibited to use electrical aids to condition the cow in its movements.

Loose housing stables must provide a feeding and a resting area for every cow. It is permissible to have feeding areas smaller than that which would correspond to the number of animals kept, if the feed is constantly accessible.

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<sup>5</sup> Only mother cows, fattening animals and young stock in stables with the possibility of free motion are exempt from this mandatory requirement of outdoor access during a limited period of time until 2010.

<sup>6</sup> For stables which had been built prior to 24.08.99 there is a deadline concerning the minimum sizes and stocking densities until 2010.

<sup>7</sup> For mother cows, young stock and fattening animals there is a deadline until 2010 in this case.

### 1.2.2 Cattle fattening and rearing

It is not permitted to keep the animals tied up permanently. Young stock and fattening animals must have an opportunity to graze (throughout the grazing period) or to run free all year round<sup>5</sup>.

The specifications for indoor areas for resting and moving as well as the nature of the partially slatted floors also apply to fattening animals (see 1.2.1). To guarantee that the animals' need to move freely can be fulfilled, the calculation of stocking density in loose housing stables must be calculated according to the animals' weight.

### 1.2.3 Calves

The system of stalling must correspond to the growing animal's special need to move freely, and to climatic conditions. It is recommended to allow the calve to suckle from the mother cow in the first days after its birth (calving pen). Keeping the calves tied up as well as keeping them in isolated cubicles is prohibited. Calves may only be kept separately if social contacts to the animals of the same species are given by the possibility of sight resp. touch; the necessary sizes of the cubicles can be found in appendix D. I. 5<sup>8</sup>. If after the 8<sup>th</sup> week of their life there are at least three calves of approximately the same age, they have to be kept in groups. Dehorning of animals is not recommended. However, to prevent injury, it may be justifiable on certain farms.

## 1.3 Sheep and goats

The minimum requirements of dairy farming also apply to the keeping of small ruminants. It is not permissible to keep the animals tied up permanently. Fattening animals and mother animals must have an opportunity to graze.

## 1.4 Pigs

Breeding sows must have the opportunity to move about freely (and possibly to graze and wallow) wherever permitted under local conditions. It is forbidden to keep them tied up.

Empty sows and sows during early pregnancy must be kept in groups relative to the number of livestock.

When sows are farrowing, it is permissible to restrict their moving space for a limited period of up to 14 days.

Sows with farrows should be placed in groups as early as possible. In the case of great stocks with boars, these must have contact to the brood sows. Weaned piglets must not be kept on flat decks or in farrow cages.

It is prohibited to cut and/or abrade the teeth and to clip the tails and/or ears of farrows.

## 1.5 Poultry

Rearing in cages is prohibited.

The runs must provide sufficient natural lighting. Artificial lighting has to be switched off for at least eight consecutive hours a night.

Litter has to be strewn over at least 33% of the base of the run so the poultry can scratch. Appropriate litter material is of organic substances such as straw, spelt glumes and additives such as stone meal and sand.

It is prohibited to clip the beaks and wing feathers.

The requirements as per appendix D. I. 7 have to be observed; for stables which had been built prior to 24/08/99 there are deadlines until 2010.

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<sup>8</sup> For stables which had been built prior to 24/08/99 only there is a limited period of time until 2010 during which the following minimum floor spaces are valid:

For separate husbandry:

Minimum of 1 square meter per animal during the first two weeks of their life

Minimum of 1.6 square meters per animal until the eighth week of their life

Minimum of 2 square meters per animal after the eighth week of their life (only if there are not at least 3 calves of the same age)

For husbandry in groups:

Minimum of 1.5 square meters per animal for calves up to 150 kg live weight

Minimum of 1.7 square meters per animal for calves up to 200 kg live weight

Minimum of 1.8 square meters per animal for calves over 200 kg live weight

### 1.5.1 Laying hens

It is not possible to rear laying hens without providing a free outdoor access. During the daytime, the free outdoor access has to be constantly given.

An outdoors area divided in two segments, i.e. one covered and one grassland, meets the requirements of the animals' natural behaviour and the hygienic conditions in an ideal way.

The covered area has to be accessible throughout the year (i.e. even when the weather is bad) and provide places for sand- and dust-bathes.

The grassland area can be used by the animals when the weather permits, and provides sufficient shelter in the form of trees, bushes and the like.

The required outdoor access areas are 4 square meters per hen<sup>9</sup>. For the calculation of the outdoors areas only such areas not exceeding a distance of 150 meters to the hen house are taken into account.

The stocking density in the hen house is 6 hens per square meter as a maximum. Integrated outdoor access areas are considered as part of the floor space if they are permanently accessible and utilizable; if this is not the case these areas count as 50% of the floor space which results in a maximum of 3 supplementary hens per square metre of ground floor.

An adequate number of rounded sitting rods for perching have to be provided (18 cm per hen). These rods have to be at different levels. Nests are obligatory. They can be designed as individual nests (one nest for every five animals) or as common nests (at least one square meter for every eighty animals).

If the animals are kept in aviaries, the stocking rate and size of the run depend on the system and therefore have to be discussed with the adviser. As a maximum limit, 12 animals per square meter of floor space must not be exceeded in any system.

Moulting that takes the animals basic needs into account is permitted in agreement with the adviser. Forced moulting is prohibited.

Special requirements for the rearing of pullets are mentioned in appendix D. I. 7.

### 1.5.2 Feeder poultry

Extensive feeder races are to be preferred. Otherwise the minimum ages for slaughtering as per appendix D. I. 8 have to be observed.

Fryers and turkeys:

The maximum stocking density must not exceed 21 kg live weight per square meter of floor space for fryers and turkeys.

The fowl have to be offered elevated perches.

The hours of artificial lighting may exceed the normal standard during the first three days of life.

Ducks and geese:

As soon as the animals are sufficiently feathered, an outdoor access has to be provided.

The maximum stocking rate must not exceed 21 kg live weight per square metre stable area.

Ponds have to be provided as part of the ducks' natural habitat<sup>10</sup>. Smaller areas of water have to be reinforced and must be cleaned regularly for reasons of hygiene.

Geese have to be given sufficient opportunity to graze, drink and clean themselves.

## 1.6 Horses

Horses have to be kept in groups. They must be given the opportunity to run or graze daily (stallions as far as it is possible without taking risks). The husbandry system should interfere as little as possible with the contact between the horses. Where the horses are kept in individual boxes, care should be taken that the animals at least have visual contact with each other. Foals and young horses have to grow up in groups. Shelter from bad weather must be available on the grazing land.

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<sup>9</sup> For hen houses which had been built prior to 24/08/99 the following minimum requirements are valid during a limited period of time until 2010:

- at least one covered outdoors area of 1/3 of the total floor space of the run or
- at least one grassland area of 2.5 square meters per hen or
- a covered outdoors area (of ¼ of the total floor space of the run) as well as a grassland area

<sup>10</sup> For duck houses which had been built prior to 24/08/99 there is a deadline until 2010.

### **1.7 Game reserves**

Game kept in reserves covers all types suitable for rearing under agricultural conditions (fallow deer, red deer). The game should be kept in herds of at least ten adults, the ideal ratio being ten to fifteen adult females to one stag.

Game in reserves should be kept at pasture all the year round. In order to satisfy their need for natural resting areas and for protection, shelter should be provided. If natural shelters (solitary trees, copses, hedges) are only sparsely available, then additional means of protection from wind and opportunities for concealment and shelter – scattered about the reserve – should be provided. Suitable ground conditions, such as rough concrete, gravel and grid stones should be placed at more heavily frequented points (e.g. watering and feeding spots) to enable the animals follow their instincts by scraping their hoofs.

Typical means of fraying their antlers must be made available to the male game in the reserve.

The stags' antlers may only be removed on the recommendation of a veterinary surgeon and then only in individual cases.

Where a mixture of game is kept, or in the case of separate reserves for wild boards and mouflons, special agreements based on the above criteria have to be concluded with Naturland.

### **1.8 Rabbits**

Rabbits have to be kept in groups, the limit being max. 5 for breeding animals and max. 60 for fatteners.

The size of the run must be appropriate to satisfy the animals' natural need for movement. The space must be divided and structured with separate compartments for feeding, nesting and natural congregation. Objects should always be provided for the rabbits to gnaw on.

Dams must be provided with sufficient space and nesting material to make their nests.

All the animals must have access to outdoors, where they should also be provided with sheltered areas to protect them from inclement weather.

## **2. Feeding**

### **2.1 General requirements**

The basis of animal nutrition is the feed produced on the farm itself. At least 50% of the feed must be produced on the individual farm (or from a co-operation with another organic farm approved by Naturland). Only farms with animal husbandry which produce less than 10 DU (dung units) can be excepted hereof.

Intensification beyond the site-appropriate degree by brought-in feed is not permitted. This does not affect the substitution of equal amounts from different levels of certification. To limit the nutrient supply to the farm, it is only possible to buy feed in the sense of an additional nutrient input if the stocking rate of the farm is less than 1.4 DU/ha. Purchased fodder must be certified by Naturland resp. meet certification standards approved as equivalent by Naturland. Only if availability is insufficient, for ruminants (max. 10%), pigs and poultry (max. 15%) there may also be used feed from conventional production as per appendix D. I. 3, each as the total average per year and referring to dry matter given; here, the percentage of conventional feed – except for itinerant flocks - must not exceed 25% in the daily ration.

If animal products are marketed as conventional only, a maximum of up to 20% of feed from conventional production as per appendix II C of the EC regulation is allowed in addition to the feeds as per appendix D. I. 3; in the case of feed crisis due to drought, fire or similar calamities only the feeds as per appendix II C – subject to Naturland approval - may be used as well.

If feed is purchased, a maximum of 30% of the dry matter of feed given may originate from areas which have been farmed in compliance with the standards for at least 12 months prior to their harvest. If this feed is produced on the farm itself, a maximum of 60% is allowed.

The application of mineral mixtures and vitamin preparations without any additives is exempt from these limitations. Urea, synthetic amino acids, feed from carcass disposal as well as genetically engineered organisms or products there from and the like are prohibited as feed.

## **2.2 Cattle**

In cattle feeding, the appropriate structural balance in the feed ration must be observed (hay, straw, grain-whole-plant silage) all the year round. In summer, green feed must be provided. Exclusive year-round silage-feeding is not permitted.

The feeding of calves is carried out on a basis of natural milk for at least 3 months. Pure milk fattening without feeding roughage is not permitted.

If proof can be submitted that the respective feed from organic sources is only available to a limited extent, exceptions will be permitted. This must be done in agreement with the adviser and following appendix D. I. 3. 3.1. Feed of up to an average of 10% of the dry matter of the ration may be bought from conventional sources for cattle feeding.

## **2.3 Sheep and goats**

The feeding of lambs and kids is carried out on the basis of natural milk for at least 45 days. Pure milk fattening without feeding roughage is not permitted. The grazing of areas not belonging to the farm which correspond to the requirements of these standards (e.g. fallow areas) is permissible. In migratory herding, the grazing areas and migration routes, in sheep paddocking the extensive non-farm areas have to be registered and approved.

If proof can be provided that the respective feed of organic origin is not available to a sufficient extent, it will be permitted (in accordance with appendix D. I. 3. 3.1) to buy feed of up to an average of 10% of the dry matter of the ration from conventional sources for the feeding of sheep and goats.

## **2.4 Pigs**

Their digestive physiology and ethology means that pigs also have to be fed roughage and succulent feed in a feeding programme that corresponds to the pigs' specific needs.

If there is proof that feed from organic sources for the augmentation of the protein quality of the feed is not available to a sufficient extent, feed of up to an average of 15% of the dry matter of the rations may be bought from conventional sources as per appendix D. I. 3. 3.2.

The feeding of the farrows is carried out on the basis of natural milk for at least 40 days.

## **2.5 Poultry**

The animals must be provided with a sufficient number of places to drink and feed. On hot days, water should be offered in the runs as well.

The feed given during the fattening period must contain a percentage of grain of at least 65%. In addition, roughage has to be offered to all animals as well.

If there is proof that feeding stuff from organic sources for the increase of the protein content of the feed is not available to a sufficient extent, feed of up to an average of 15% of the dry matter of the ration may be bought for poultry feeding from conventional sources as per appendix D. I. 3. 3.3.

For the feeding of laying hens, part of the grain should be offered as whole grains, if possible in the ground bedding. Small pebbles or the like have to be used.

## **2.6 Reserve game**

If it can be proved that fodder from organic sources is not available in sufficient quantity, up to 10% of the fodder requirement as an average per ration from non-organic sources may be offered to the game, as per annex D. I. 3. 3.1. Wherever possible, chestnuts and acorns should be provided from woods certified by Naturland.

## **2.7 Rabbits**

If it can be proved that fodder from organic sources is not available in sufficient quantity, up to 10% of the fodder requirement as an average per ration from non-organic sources may be offered to the rabbits, as per annex D. I. 3. 3.1.

### 3. Purchased animals

Animals may only be purchased from organic farms that are certified by Naturland or meet certification standards approved as equivalent by Naturland. Animals for breeding can be purchased from conventional farms up to 10% of the existing stock. This proportion can be exceeded in justifiable individual cases (e.g. enlargement of the farm) and in agreement with Naturland. Where the purchase of animals is not possible in accordance with the above conditions (the farm manager is obliged to report and prove this), the following conditions apply when purchasing from conventional stocks<sup>11</sup>; and the marketing deadlines as per section A. I.9 have to be observed.

- The weight of farrows must not exceed 25 kg.
- Laying hens have to be reared according to the conditions mentioned in appendix D. I. 7. If laying hens are purchased, they have to be of according origins. When selling eggs, a period of at least 6 weeks of feeding in compliance with Naturland's standards has to be maintained before any reference to Naturland may be made on the label. -In cases of origins according to appendix D. I. 7 not being available, the young laying hens reared under conventional farming methods may not be older than 18 weeks when purchased.
- Bought fattening chicks must not be older than two days at the date of stabling.

### 4. Animal health

The health of the animals has to be ensured primarily by prophylactic measures (e.g. the appropriate housing conditions, breeding, feeding). In the case of illness, natural cures are to be preferred. Treatments using chemical-synthetic preparations as well as hormones as a matter of routine and as a preventative measure are not allowed. Treatments against ecto- and endoparasites in areas where there is proof of frequent occurrence of the parasite are exempt hereof. Legal and official conditions are to be observed. It is prohibited to apply genetically modified vaccines. It is permissible to supplement the iron supply of farrows with suitable preparations.

Allopathic medicine may be used only after prescription by a veterinarian. A double waiting period - with a minimum of 48 hours - must then be observed.

If animals are treated with chemical-synthetic allopathic animal medication or antibiotics more than two times within one year their products must not be marketed with reference to Naturland anymore or the animals have to pass the conversion periods as per A; I.9 again respectively (for animals which have a life span of less than one year there is only one treatment permitted accordingly; the marketing with reference to organic production is not prohibited in this case). Vaccinations, parasite treatments as well as measures by order of state authorities are exempt hereof.

### 5. Stable hygiene

Cleaning of milking machines and other stable implements should only be executed using environmentally friendly cleaning agents and disinfectants according to appendix D. I. 9 of these standards.

### 6. Breeding

Breeding systems have to be based on breeds which are able to mate and give birth in a natural way.

Artificial insemination is permitted.

Hormone oestrus synchronization<sup>12</sup>, embryo transfer, genetic engineering as well as the use of genetically modified species are not permitted.

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<sup>11</sup> The aim is to be able to sufficiently supply stocks from organic sources only by 31<sup>st</sup> December, 2003.

<sup>12</sup> Hormones may only be applied by a veterinarian to treat particular animals therapeutically in cases of dysfunction in reproduction.

## **7. Transport and slaughtering**

Throughout each different step from transport until slaughtering there shall be a person responsible for the well-being of the animals.

Careful handling of the animal must be guaranteed. All pain or suffering must be avoided. The driving of the animals has to be done calmly and without electrical driving aids. When the animals are being loaded, special attention must be paid to suitable applications such as low ramps and non-slip floors. Existing groups have to be maintained.

During transport, sufficient room and fresh air must be guaranteed. Transport distances should be kept as short as possible. The maximum transport time should not exceed four hours and a maximum transport distance of 200 km. Transport times longer than eight hours are not permitted.

Drugs and tranquillizers must not be used. After the transport, the animal must have an opportunity to calm down.

The details regarding transport and slaughtering in the Naturland regulations on the processing of meat and meat products have to be observed.

The animals have to be stunned skilfully, with tested instruments, and individually.

As a basic principle, reserve game has to be killed by means of a shot gun, as required by animal protection law.

## **8. Co-operation**

Co-operation between organically operated farms is permitted if one or more partners do not have a sufficient basis of feed for their stock or were landless or low on land as an individual farm. The farm cooperation is treated as one farm with regard to all standards regulations. Each cooperation has to be approved by Naturland as an individual case; the corresponding conditions are to be observed. The co-operating farms must be situated in the same region and they must agree to exchange fodder and manure. (A Naturland co-operation agreement covers further details.)

This limitation to one region applies in general too to the distance of each of the animals' sheds to their particular grazing areas.

### **III. Horticulture**

The predominant principles for plant cultivation as per part B. I. are to be observed. In addition, the following regulations apply to horticulture:

#### **1. Application of manure, soil analyses, crop rotation**

- 1.1 When growing vegetables in the open the nitrogen fertilization must not exceed 110 kg N/ha and year in the average of the crop rotation on horticultural areas. Due to the higher degree of nutrient decomposition in the soil on account of a higher degree of cultivation intensity in greenhouses, more concentrated manure application (over 110 kg/ha and year) may be permissible in some cases after consultation with the adviser. In order to prevent over- or undersupply, the soil's or substratum's nutrient and humus content must be analysed at least every third year. The results of the analysis have to be evaluated in co-operation with the adviser.
- 1.2 Subject to the proviso of the adviser, a soil analysis for harmful substances (heavy metals, organic compounds) has to be carried out and presented at the beginning of the conversion and for any area rented or bought later on.
- 1.3 For greenhouse areas that are being converted and that had been cultivated conventionally for a longer period of time, a soil analysis regarding previous contamination with pesticides (e.g. chlorohydrocarbons) has to be submitted.
- 1.4 The quantity of purchased organic farm manures and organic commercial fertilizers has to be based on the results of the soil analysis and the data about the nutrient requirements of the crop rotation. Records have to be kept on the amount of fertilizers used (purchased and home grown fertilizers). All fertilizer sources have to be accounted for. The quantity and safety of purchased fertilizers have to be discussed with the adviser. Proof of up-dated analyses has to be given on request.
- 1.5 An analysis of the nitrogen level on the farm has to be submitted annually. Highly recommended for checks on the soil's nitrogen dynamics are regular N-min-analyses. These may be imposed by the advisers for certain crops or crop rotations if necessary; this applies equally to nitrate analyses of the products.
- 1.6 Fields that are expected to lie fallow for more than 12 weeks during the vegetation period (April to November) have to be cultivated with green manure.

#### **2. Soils and substrata**

- 2.1 Soils and substrata have to be produced from the market garden's own mixtures wherever possible. The use of additives is subject to Naturland's criteria for the application of compost (see appendix D. I. 10) and has to be discussed with and agreed upon by the adviser. The amount of peat applied has to be kept to a minimum. In seed and plantlet substrata, peat is permitted up to a proportion of 80% of the total amount. The extensive application of peat to improve the quality of the soil is not permitted.
- 2.2 The use of any synthetic or surrogate substrata such as polystyrene peat, rock wool, water (hydroculture, nutritive film techniques) and such is not permitted. The water sprouting of chicory roots that were nursed in the soil, however, is permissible.
- 2.3 Steaming of soils and substrates is permitted. Flat steaming (ca. 10 cm) for weed control is permitted in greenhouses. Deep steaming and steaming outdoors is not permitted; exceptions may be allowed only if rotation of crops and soil improvement measures should prove impossible; these require the explicit approval of Naturland.

### **3. Nursing of seedlings**

All seedlings needed on the farm have to be grown in the farms own nursery or bought from farms that are certified by Naturland or meet certification standards approved as equivalent by Naturland.

### **4. Weed control**

The method of flaming has to be used cautiously. "Band-flaming" of rows combined with mechanical methods between the rows has to be preferred to flaming the whole area.

### **5. Heating of green- and foil houses**

The nursing of plants is not subject to any limitations in this respect. Otherwise the heating is limited to an adequate prolongation of the cultivation period in autumn and to an early initiation in spring. Constructional measures (heat insulation), the selection of apt materials and fuels, and energy-saving heating systems should add to shorten the necessary heating period and reduce outside energy requirements.

### **6. Food quality assurance**

The nitrate content of the products has to be minimized by an adequate cultivation (location, variety, manure). The quality obtained by ways of cultivation has to be preserved by the choice of careful harvesting, preparation and storage methods. In particular with respect to these methods, any treatment with chemicals, synthetic substances or radioactive irradiation is prohibited.

#### **IV. Mushroom Cultivation**

The predominant principles of plant cultivation as per part B, I. are to be observed; in addition, the following regulations apply to mushroom cultivation:

##### **1. Fertile mushroom material**

The fertile mushroom material applied must – as far as available – be certified by Naturland or meet certification standards approved as equivalent by Naturland. If this is not available the farm manager has to give notice and proof of its non-availability.

##### **2. Substrata**

The basic materials and all other substrata components have to be purchased from farms that are certified by Naturland or meet certification standards approved as equivalent by Naturland. For mushroom cultivation on wood there has to be established proof of its origin and, if necessary, on the analyses that have been carried out.

##### **3. Cleaning and disinfection**

The use of disinfectants and chloride for cultivations, covering soils, substrates, watering, soil receptacles, tools and in the cultivation rooms is prohibited. Written proof has to be presented for the covering soil, the substrates and the transport receptacles. Permitted are lime (not extinguished), thermal decontamination, alcohol, acetic acid, adhesive traps and others.

## **V. Cultivation of ornamental plants, herbaceous perennials, copses, Christmas trees<sup>13</sup>**

The predominant principles for plant cultivation as per part B, I. are to be observed; in addition, the following regulations are applied to cultivation of ornamental plants, herbaceous perennials, copses and Christmas trees:

### **1. Manuring, soil analyses, crop rotation**

- 1.1 For herbaceous perennials, copses and Christmas trees the amount of 90 kg N/ha and year, for ornamental plants grown in the open the amount of 110 kg N/ha and year must not be exceeded. Due to the higher degree of nutrient decomposition in the soil on account of a higher degree of cultivation intensity and because of the limited nutrient availability in cultivation receptacles in greenhouses a more intense manure application (over 110 kg/ha and year) may be permissible in some cases after consultation with the adviser. In order to prevent over- or undersupply, the soil's or substrate's nutrient and humus content must be analysed at least every third year. The results of the analysis have to be evaluated in cooperation with the adviser.
- 1.2 The quantity of bought-in farm manures and organic commercial fertilizers has to be based on the results of the soil analysis and the data about the nutrient requirements of the crop rotation. Records have to be kept on the amount of fertilizers used. All fertilizer sources have to be accounted for. Quantity and harmlessness of brought-in fertilizers have to be discussed with the adviser. Proof of up-dated analyses has to be given on request.
- 1.3 A balance of the nitrogen level on the farm has to be presented annually. Highly recommended for checks on the soil's nitrogen cycle are regular N-min-analyses.
- 1.4 Fields that are probable to lie fallow for more than 12 weeks during the vegetation period (April to November) have to be cultivated with green manure. The same should be applied during winter if possible.

### **2. Soils and substrates**

- 2.1 Soils and substrates have to be produced from own mixtures wherever possible. Use of additives is subject to the Naturland criteria for the application of compost and has to be discussed with and agreed upon by the adviser. The amount of peat has to be reduced as far as possible. Peat is permitted up to a proportion of 50% of the total amount in receptacle substrates and up to a proportion of 80% in seed and plantlet substrates. Exceptions during the conversion period or because of particular cultivation needs (e.g. bog-soil plants) are only possible when discussed and agreed upon with the adviser. The extensive application of peat for soil amelioration purposes is not permitted.
- 2.2 The use of any synthetic or surrogate substrates such as polystyrene peat, Hygro peat, rock wool and such is not permitted.
- 2.3 Steaming of soils and substrates is permitted. Flat steaming (ca. 10 cm) for weed control is permitted in greenhouses. Deep steaming and steaming outdoors is not permitted; exceptions may be allowed only if rotation of crops and soil amelioration measures should prove impossible; these require explicit approval by Naturland.

### **3. Seedlings**

Seedlings needed on the farm have to be grown there or purchased from farms that are certified by Naturland or meet certification standards approved as equivalent by Naturland. If certain varieties are not available (the farm manager has to give notice and proof of non-availability) vegetatively propagated plants, seedlings, pricked off sprouts and nursery trees (for Christmas trees) from conventional farms may also be

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<sup>13</sup> Christmas trees according to these standards are trees which are planted on legally approved areas provided for this purpose. The standards also apply to ornamental twigs as a by-product of such Christmas tree cultivation areas.

used. Plants from such conventional seedlings may only be labelled as Naturland products in conversion. After two vegetation periods at the earliest, such seedlings may be labelled as Naturland certified products. The goal of organically grown seedlings can only be achieved step by step; the respective stage of development has to be taken into account when purchasing plant material.

#### **4. Purchase of raw and finished goods**

If conventional raw or finished goods are purchased, these must be distinguishable at any time on the farm (further cultivation, wrapping, sale etc.). This has to be achieved by suitable means (e.g. labelling, separate tables, houses or sheds). For the consumer the different ways of production have to be made obvious by clearly labelling the products as conventional.

#### **5. Plant pots**

Decomposable matter is to be preferred, e.g. paper, flax, jute and hemp or even clay, as long as these allow reasonable organic cultivation. Plastic pots and receptacles etc. must consist of sturdy materials, making it possible to use them several times and they must be recyclable. PVC is not permitted. Pots that are on the farm already and do not comply with these conditions may be used up during the conversion period.

#### **6. Sealing of the soil**

Standing areas for pots and containers should not be sealed if possible; the creation of sealed standing areas is permitted only if precipitation and irrigation water are collected and recycled.

#### **7. Greenhouses**

##### **7.1 Heating, energy consumption**

The heating of greenhouses is limited to the appropriate prolongation of the cultivation period in autumn and an early start in spring. The nursing of seedlings is not subject to such limitation. The lowest possible energy consumption per cultivation area as well as the most ecofriendly way of energy production have to be striven for. Respective investments (e.g. heat insulation by using suitable covering materials and energy shades; power-heat coupling; heat pump; heating with solar energy, bio-gas, wood chips, natural gas) should further shorten the necessary heating period and lower the need for extra energy.

##### **7.2 Assimilation lighting**

Assimilation lighting is only permitted in seedling nurseries.

## **VI. Fruit cultivation**

The predominant principles of plant cultivation as per part B, I. are to be observed; in addition, the following regulations are applied to fruit cultivation:

### **1. Humus management and fertilization**

- 1.1 In intensive permanent crops, such as fruit cultivation, a balanced humus supply is of essential relevance.
- 1.2 An important measure for maintaining and increasing soil fertility is permanent green. It provides various habitats and in particular enables the colonization of beneficial insects. For a better soil structure and development undergrowth such as legumes, herbs and grass are suitable. For soil maintenance measures, soil loosening, reseeding or because of drought in summer a break in greening is possible. Maintenance measures are to be carried out mechanically or thermally. The flowering period of the green should be reached. If needed, the strips of trees or the area underneath the trees may be kept clear by using mechanical and thermal methods. The soil must not be uncovered or without green on the whole area and during the whole year.
- 1.3 For further amelioration of the humus supply organic manure may be applied. The total amount of nitrogen fertilizers applied must not exceed 90 kg N/ha fruit cultivation area and year. (see annex D. I. 1).

### **2. Pest, disease and weed control**

- 2.1 In organic agriculture, one of the most important goals is the achieving of healthy plants by supporting a balanced ecological proportion of pest and beneficial species.
- 2.2 Essential measures to prevent diseases are suitable stocking densities as well as the selection of healthy and hardy plants.
- 2.3 The hardiness of copses can also be strengthened and the risk of infection can be lowered by using appropriate soil management and cultivation measures (shape pruning, rootstock building, cut part, foliage work, line spacing, maintenance underneath of trees, etc.).
- 2.4 The provisions for a healthy microclimate on the fruit cultivation sites are to be established.
- 2.5 Produce from areas that were contaminated with substances not in compliance with the standards by possible industry-wide pest control measures or by drift has to be commercialised conventionally. The farm has a special obligation regarding notification and documentation of these instances.
- 2.6 The use of synthetic chemical substances is prohibited. A list of the plant-protective agents permitted is given in appendix D. I. 2.

### **3. Supporting material**

Tropical or subtropical timbers are not permitted. Exceptions hereto are the tropical grass species, bamboo and Tonkin cane.

## VII. Viniculture and Wine Production

The predominant principles of plant cultivation as per part B, I. are to be observed; in addition, the following regulations are applied to viniculture:

### 1. Treatment of the soil

The most important means of maintaining and increasing the fertility of the soil is to ensure good plant coverage. The plants are the habitat of a wide variety of flora and fauna. Wild plants, supplemented by other suitable plants sown in to complement them, break down and stabilise the soil.

As a matter of principle, vineyards must have good plant coverage. This coverage may only be interrupted for max. 3 months over the whole area when attending to the soil, loosening it, sowing seeds, during dry periods in summer and in new fields. If every second row has plant coverage, the alternative rows may be kept free for max. 6 months (from 1<sup>st</sup> January to 1<sup>st</sup> September) upon consultation with a Naturland adviser.

It is recommended to leave one area fallow. Fallow areas are to have good plant coverage.

Where plant coverage is sown, this must be of mixed composition, preference is to be given to local strains and leguminous plants.

For preference, measures applied to this plant coverage should be mowing or rolling, and mulching. Treatment should be on an alternating basis and flowering plants are to be encouraged.

### 2. Humus management and fertilisation

The decomposition processes of active soil are the prerequisite for the balanced nutrition of crops. In order to ensure long-lasting soil activity and thus crop yields, special attention has to be paid to the basis of soil fertility.

- The humus balance has to be at least at an equilibrium within the margin of varied crop rotation. For permanent crops, this has to be guaranteed by adequate measures such as undergrowth, catch crops or permanent green.
- Biodegradable material from microbial, vegetable or animal sources is the basis of fertilisation.
- Given the importance of a balanced lime level for topsoil stability, as well as for the structure and thus the fertility of the soil, and because of the acid absorption through precipitation, special attention has to be paid to an adequate lime supply appropriate to local conditions.

The use of supplementary fertilizers (P, K, Mg) as per appendix D. I. 1. 1.5 is to be discussed with a Naturland adviser and depends on corresponding soil analyses.

The vines' nitrogen requirements are to be supplied by sowing leguminous plants. Where organic fertilizers are added, a maximum of 150 kg N/ha may be used over three years, while a max. of 70 kg may be available to the plants in the year of fertilisation. Synthetic chemical nitrogenous fertilizers and other easily soluble fertilizers, faecal sludge and compost from sewage sludge are forbidden.

For permitted fertilizers, see appendix D. I. 1.

### 3. Treatment of the soil

The soil should be treated with the aim of preserving favourable structure and encouraging biological activity, in order to offer the plants the best conditions for growth.

When loosening the soil, the natural layers should be preserved as far as possible. This is especially important when preparing the soil for new vines to be planted. When vineyards are cleared, coverage plants should be sown to stabilise the structure of the soil.

### 4. Protection and treatment of the plants

The organic treatment of plants begins with the methods of cultivation designed to strengthen the vines' resistance and lower the risk of infection. These include the treatment of the soil, fertilization and such measures as the choice of variety, spacing, training and shaping of the vines, pruning and trimming.

In order to encourage the vines' self-regulating mechanisms and resistance against pests such as fungi and insects, inhibitors, tonics and treatments as listed under appendix D. I. 2 may be applied.

Where pesticides are sprayed from the air on a general scale and are outside the vintner's control (e.g. by helicopter), or in community projects, all other methods of cultivation must be according to these standards. Produce from affected areas (where synthetic chemical means are used) may not be marketed as organic or with reference to Naturland or under the Naturland<sup>®</sup> logo.

When community land has been reallocated, the soil must be covered with a rich variety of fallow-land plants for at least one year.

The containment of undergrowth can be done mechanically or thermally.

Synthetic chemical insecticides, acaricides, nematocides, fungicides and herbicides are prohibited.

For permitted pesticides, see appendix D. I. 2.

## 5. Processing

If produce is to be marketed under the Naturland<sup>®</sup> logo, only grapes from organic agriculture, which have been grown according to these standards, may be processed to make grape juice, wine, sparkling wine or spirits.

These standards assume that national laws and regulations governing wine production have been complied with.

All procedures and measures when processing the grapes and in producing juice, wine and sparkling wine have to be directed at the following aims:

- manufacture of produce of superior quality
- avoidance of procedures making intensive use of raw materials and energy
- sulphurous acid kept to a minimum.
- avoidance of all substances which are harmful to the environment and dangerous to the health in their production, use and disposal
- processing and treatment of all organic residues resulting from production in such a way that they do not damage the environment. Marc, yeast and clarification dregs are to be recycled in the course of production as organic fertilizer.

### 5.1 Permissible processing procedures and oenological means of treatment

Only the following processing procedures and oenological means of treatment may be used.

#### 5.1.1 Processing procedures

- short term heating-procedure
- hot bottling of wine
- centrifuging and filtering
- thermal treatment
- warming the mash and must to 30° C or 60° C
- preparation and storage of unfermented reserves
- cold treatment
- ventilation

#### 5.1.2 Oenological means of treatment

- carbonic acid and nitrogen
- sulphurous acid and potassium bisulphite
- yeast, dried yeast
- undiluted, fresh yeast from organic production

#### To encourage yeast formation:

- thiamine
- mineral yeast nutrients, yeast membrane preparations

#### Enrichment:

- sucrose (crystallised beet sugar) preferably from organic production<sup>14</sup>
- grape must concentrate from organic production

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<sup>14</sup> By 1<sup>st</sup> April, 2003, at the latest, organically produced sugar must be used.

**Deacidification:**

- potassium bitartrate
- lactic acid bacteria
- potassium bicarbonate, potassium carbonat

**Clarification:**

- edible gelatine
- silicon dioxide in gel form or in a colloid solution (silicic brine, diatomaceous earth)
- sturgeon glue
- casein and potassium caseinates
- tannin
- egg white and albumen
- bentonites with a low iron content

**To enhance the taste:**

- charcoal
- copper sulphate
- citric acid (to stabilise iron)
- ascorbic acid
- pectolytic enzymes, free of pepsins (only for grape juice and the preparation of unfermented reserve)
- betaglucanase
- perlite

Combined preparations are only permitted if the individual components are known and approved.

**5.2 Cleansing agents and disinfectants**

All cleansing agents and disinfectants containing chlorine are prohibited.

Special attention is to be paid to ecofriendliness in the choice of cleansing agents and disinfectants.

The following agents are permitted for use when cleaning with water, steam or by mechanical means:

- peracetic acid, citric acid, tartaric acid
- H<sub>2</sub>O<sub>2</sub>
- ozone
- caustic soda
- soft soap
- sulphurous acid
- alcohol
- potassium lye, surfactants

**5.3 Packaging**

- The enterprise must take back empties.
- Caps: It is recommended that no caps be used. Caps containing lead are prohibited.
- Stoppers: corks treated with chlorine are prohibited.
- Transport packaging: the use of polystyrene is prohibited. Plastic packaging is only permitted as part of a return system. The plastic used in packaging should be PE.
- Glue: Glues containing PVC are prohibited.
- Labels: Paper and printing containing heavy metal are prohibited.

## VIII. Wild Grown Products

### 1. Definition

"Wild grown products" are defined as products that have grown without or with low influence of the operator gathering the products. The harvest has to be planned and carried out applying a sustainable system that is ecofriendly and socially acceptable.

This means in detail:

- a) The plants must not be cultivated, i.e. any measures to enhance or protect growth shall not be taken, or kept on a very low level (reproduction, soil management, cutting, extensive fertilizing, etc.).
- b) In their location the plants have to be found naturally.

"Wild grown products" following this definition can be clearly distinguished from:

- a) products of organic agriculture  
=> active organic cultivation
- b) products of traditional agriculture  
=> extensive conventional cultivation
- c) products of former farmland which is out of cultivation  
=> cultivated plants without the conditions of a natural habitat.

The only human interference consists of the harvest (gathering) of these wild grown products or in measures taken to protect their natural growth potential (protection from erosion etc.).

### 2. Requirements

- 2.1 The possibility of contamination of the products in the collecting areas by pollution from other areas has to be excluded.
- 2.2 Clear demarcation of the collecting area of the wild grown products to be certified has to be possible. Therefore the areas have to be clearly identified by way of land register maps (drawing of plans if necessary).
- 2.3 The collecting rights have to be identified clearly within the project. One or more persons have to be named that will be responsible for the following range of duties:
  - survey of all project activities (collecting time, harvested amount, number of gathering persons etc.)
  - administration
  - knowledge of the principles of organic agriculture and basic ecological principles.
- 2.4 The production method (collecting and possible cultivating measures) must be able to be proved ecofriendly. Exclusion of damage to the ecological system due to long-term exploitation has to be granted.
- 2.5 Before the start of each collecting season a maximum harvested amount has to be defined annually to prevent overexploitation.
- 2.6 Regular inspection is obligatory. At least one inspection per year has to be carried out. This independent inspection comprises particularly the inspection of the conditions listed under items 2.3 and 2.4.
- 2.7 Regular residue analysis is obligatory. A list of substances to be inspected as well as their appropriate limiting value will be given for each product.

### **3. Labelling**

For the consumer, wild grown products have to be clearly and visibly distinguishable from products of organic agriculture.

To ensure this, the origin of every "Wild grown product" has to be made clear on its label on the list of ingredients or in the information printed on the product wrapping material (not only in an additional booklet). There is no particular mandatory form for this note.

The note is not obligatory if the share of wild grown products in a mixed product is less than 25 %.

## **IX. Beekeeping**

The standards for organic beekeeping according to Naturland's standards can be ordered from Naturland e.V., Kleinhaderner Weg 1, 82166 Gräfelfing; Germany, or under [www.naturland.de](http://www.naturland.de) and [naturland@naturland.de](mailto:naturland@naturland.de).

## **X. Aquaculture**

The standards for organic aquaculture including chapters on:

- A. Pond culture of carp (*Cyprinus carpio*) and accompanying Middle European species (in particular tench *Tinca tinca* and other cyprinoids)
- B. Culture of trout, salmon and other salmonids in fresh- and seawater
- C. Marine culture of mussels (Blue mussel *Mytilus edulis* and others)
- D. Culture of Shrimp in ponds (Western White Shrimp *Litopenaeus vannamei* and others)

can be purchased from Naturland e.V.. Kleinhaderner Weg 1, 82166 Gräfelfing; Germany, or under [www.naturland.de](http://www.naturland.de) and [naturland@naturland.de](mailto:naturland@naturland.de).

## **XI. Organic Forest Management**

The standards for organic forest management and the processing standards for timber from organic forest management can be ordered from Naturland e.V., Kleinhaderner Weg 1, 82166 Gräfelfing; Germany, or under [www.naturland.de](http://www.naturland.de) and [naturland@naturland.de](mailto:naturland@naturland.de).

## **Part C. General Processing Standards**

### **I. Goals**

The manufacturers and processors who make products from organically accepted, agriculturally produced food articles, semi-luxury foods, feeds and articles for daily use (natural goods).

They continue the efforts of organically producing farmers to preserve the natural basis of life for plants, animals and humans. All those who put these standards into practice contribute actively to the protection of the environment and the natural resources.

When processing products from organic agriculture in accordance with these standards, the aim is to preserve the valuable nutritional and physiological components to the greatest possible extent, and to reach a high sensory quality and security in regard to health.

The processing standards are meant to guarantee a high quality of the end product with respect to its nutritional-physiological and organic value. At the same time, the standards strive for a high social compatibility (fitting human needs) at all steps in trade and production.

Consumers are to be protected from deception and fraud by the highest possible degree of transparency.

Permitted for use are exclusive pieces of equipment and processing methods,

- which do not cause damage to the food that might be harmful to one's health;
- which ensure the most considerate handling of the environment and the resources such as water, air and energy;
- which do not impair the health of the production personnel.

The steps of treatments and processing have to be improved according to these principles with consideration of scientific knowledge.

### **II. Contracts and certification procedures**

#### **1. Area of Application**

These standards are binding for all operations that have signed a license agreement with the Naturland® Trademark Ltd. They describe the minimum requirements that have to be fulfilled in the processing and treatment of raw materials into higher processed food articles and semi-luxury foods. These processing standards also apply to the production of non-food articles (feed, natural goods) by analogy.

The latest concurrent version of the standards passed by the associations' committee will always be the one in effect.

The processing businesses will be informed of changes.

The regulation (EEC) No 2092/91 for organic agriculture and their amendments have to be respected. Also valid are the legal requirements, in particular the laws of food and non-food articles (LMBG).

Naturland e.V. - Association for Organic Agriculture reserves the right to change these standards. Any changes will be tested, adjusted with practice and announced in time. In case of doubt or unclear details, the processing businesses are obliged to inquire with the association. Only by joint action and cooperation will further development of these guidelines in the accordance with laws of ecology be possible.

#### **2. Contracts**

The processing businesses' obligation to meet the processing standards and, if they exist, additional processing standards for specific product groups, begins with the signature of the licence agreement. (the standards for specific product groups have to be ordered from Naturland e.V., Kleinhaderner Weg 1, 82166 Gräfelfing; Germany, or under [www.naturland.de](http://www.naturland.de) and [naturland@naturland.de](mailto:naturland@naturland.de).)

Furthermore, the licence agreement settles the use of the Naturland® trademark.

#### **3. Inspection and Certification**

The requirements for controls of the processing businesses are oriented towards regulation (EEC) No 2092/91 (see appendix D. II.2: Inspection range in processing businesses).

Compliance with Naturland's standards and legal regulations will be checked regularly, but at least once a year by means of announced and unannounced inspections.

In addition to the inspection range defined, the following standards have to be kept to:

- Correct Naturland labelling
- Keeping of a production diary

The detailed requirements for documentation as stipulated under regulation (EEC) No 2092/91 (appendix III B, para. 2) apply.

In its annual certificate of certification, Naturland's certification body confirms that the processing operation has complied with Naturland's standards. If current standards are infringed by the processor, the penalties contained in the list of sanctions may be imposed.

#### 4. Labelling

It is possible to label foodstuffs, luxury foodstuffs, animal feed and natural produce with a reference to Naturland®, certification by Naturland or displaying the Naturland® logo, if the raw goods and ingredients were produced according to Naturland's standards and the produce processed according to these standards (or to the standards applicable to each group of products). Processed produce which at least fulfills the conditions detailed under C. III. 2.2.1 on their origin may be labelled as follows:

- 4.1 The product contains ingredients as per letters a. or b. on the list of priorities; Ingredients as per the letters c. and d. on the list of priorities are only contained after receiving permission and they make up max. 5% of the whole.

**Naturland® Zeichen**

**Sub-title: certified organic**

- 4.2 The product contains at least 70% ingredients as per letter a. or b. on the list of priorities. The remaining ingredients (up to a maximum of 30%) have been certified as per the legal requirements.

The list of ingredients must clearly show which raw goods have been certified by Naturland and how high their percentage is of the total product, the rest being according to legal requirements.

**Naturland® Zeichen**

**Sub-title: made with organic ingredients**

The labelling and declaration of ingredients must be true, clear and in a form enabling easy comparison with other products. All the ingredients must be stated completely on each product (this includes composite ingredients) and in the order of their percentage of the whole. In the case of herbs and spices, a general term may be used, if their proportion of the product does not exceed 2%. The use of iodized salt, gelatine, flavouring and sugar in fruit produce has to be indicated clearly. It must be absolutely clear to the consumer which ingredients come from certified organic sources. Additives must be listed with their complete designation. If principle ingredients originate from foreign sources, the land of origin must be stated.

The products may be labelled individually or as a product range with the Naturland® logo. Goods sold in a speciality shop as loose goods of a product range have to be labelled clearly and precisely for the customer. The goods must be separated visually and spacially from the rest of the same product range.

Further stipulations on the labelling of produce are given in the Naturland standards applicable to specific groups of products.

The processors and their marketing agents who have concluded contracts with other businesses as suppliers or sub-contractors are advised to use the following terms to provide the consumer with the information required: "Manufactured by ..... on behalf of .....".

### III. General regulations for production

#### 1. Requirements of the Processing Business

Apart from businesses that exclusively process or treat products following the Naturland standards there are businesses which, after agreement from Naturland® Trademark Ltd., produce only a part of their assortment in accordance with the Naturland standards. The conversion of the complete assortment should be aimed at on a long-term basis. Up to then, these businesses have to guarantee a clear distinction between the raw materials, ingredients and raw goods from those of the conventional standards. This means in particular:

- Separate storage areas for the raw materials and the processed goods. The separation must be comprehensible for a control.
- The individual processing steps have to be carried out in one block for each sequence, and have to be separated spatially or in time from similar processing steps of conventional goods.
- Naturland goods should be processed before the conventional goods if possible. If this should prove impossible, thorough cleaning of the machines and tools (e.g. running empty or pre-running) is required before processing of organic goods.

Every processor dealing with organic produce must ensure that he has taken every step necessary to prevent contamination of the produce or pollution of the environment with prohibited substances. This covers both pollution with prohibited substances and possible pollution with permitted substances e.g. if they are used incorrectly. The type of steps taken and how and when implemented must be recorded in a manner comprehensible to the inspector.

- Processing steps that are not carried out frequently have to be announced in advance to Naturland within a set period of time which has to be agreed upon by Naturland® Trademark Ltd..
- The assortment produced in accordance with these standards has to be differentiated from the rest of the assortment, in the recipe used, in the form or in the appearance.

#### 2. Ingredients and processing additives

##### 2.1 Basic principles

The ingredients used when processing organic produce may be from agricultural or non-agricultural sources.

In the processing standards for specific groups of products, the ingredients, additives and processing additives permitted are shown in a list of positive ingredients.

Genetically modified organisms (GMOs) and their derivatives are incompatible with organic production. Products produced according to Naturland's standards must be produced without the use of genetically modified organisms (GMOs) and GMO derivatives. A "GMO derivative" is any substance produced from or by means of GMOs but not containing GMOs. "The use of GMOs and GMO derivatives" means their use as a foodstuff, an ingredient to foodstuffs (including additives and flavouring), processing additives (including extraction solvents), animal feed, compound fodder, the raw goods of animal feed, fodder additives, processing additives for animal feed, certain products for animal food, pesticides, fertilisers, soil ameliorators, seeds, vegetative propagation material and animals.

For the purposes of these standards, the following definitions apply: 1. organism – any biological unit capable of reproduction or passing on genetic material. 2. Genetically modified organism (GMO) – an organism, the genetic material of which has been modified in such a way as is not possible in a natural manner by cross-breeding and/or natural recombination.

In addition, the treatment of raw materials, ingredients, additives and auxiliary products with microwaves or ionising rays is not allowed.

The processor must have proof that these substances and methods are neither directly (through raw material, ingredient, raw goods, additive or auxiliary product) nor indirectly (via half finished products) used in the products produced in accordance with these standards.

##### 2.2 Raw materials, Ingredients and Raw Goods of Agricultural Origin

Products labelled with the Naturland® logo, with reference to Naturland or to certification by Naturland, contain raw goods certified by Naturland. If raw goods certified by Naturland not be available in

sufficient quality or quantity, application may be made to use ingredients from other sources from the following list of priorities.

### **2.2.1 Origin of ingredients (list of priorities):**

- a. The highest priority is accorded to the use of raw goods and ingredients directly certified by Naturland. Raw goods and ingredients from certifiers accredited by IFOAM, whose certification is recognised by Naturland as being of an equivalent standard<sup>15</sup>, may be used without any limitation if written approval has been given by Naturland.
- b. If these are not available, raw goods and ingredients from other certifiers accredited by IFOAM upon written approval by Naturland. This also applies to raw goods recertified by Naturland<sup>16</sup>.
- c. If the raw goods cited under a. and b. are not available, raw goods may be employed upon receipt of written approval, which at least fulfil the legal requirements for organic produce under the valid national legislation (e.g. EU regulations, NOP), provided they do not exceed 30% of the total contents of the product.  
However, the producer is obliged to replace these ingredients as quickly as possible with ingredients certified by Naturland.
- d. Conventional ingredients may only be used after receiving approval by Naturland and even then only for max. 5% (not including water and salt) of the final product, on condition that such ingredients are not available from organic sources.

The percentage of the proportion of the ingredients is calculated on the basis of the ingredients at the time of their application in the manufacture of the foodstuffs.

### **2.2.2 Processing Quality**

Permitted for use in processing are those raw materials, ingredients and raw goods of agricultural origin that have been selected in accordance with the given list of priorities (see 2.2.1). The processing standards of Naturland for specific product groups will apply to pre-processed ingredients. If these should not exist for particular cases, the General Processing Standards of Naturland will apply.

### **2.2.3 Combined Ingredients**

Combined ingredients are defined as those which are used for the processing of a product exclusively for technological reasons. Consumption of these combined ingredients without further processing is not possible.

The use of combined ingredients in products labelled with the Naturland trademark and the labelling of combined ingredients has to be checked and decided for each individual case. A general permission is not possible for the sake of guaranteed quality.

## **2.3 Ingredients from non-agricultural sources, and processing additives**

When processing organic agricultural products, the following ingredients from non-agricultural sources may be used:

- flavouring
- water and salt
- cultures of micro-organisms
- enzymes
- food additives
- minerals, trace elements, vitamins and similar ingredients obtained by fortification or isolation (their use only being permissible if legal requirements are observed)

The permissible ingredients and processing additives are listed in the processing standards applicable to specific product groups.

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<sup>15</sup> Certifying bodies accredited by IFOAM can be recognised as being equivalent to Naturland's certification under the multilateral agreement (MLA) if the additional requirements of Naturland's standards are fulfilled or if a bilateral agreement has been concluded.

<sup>16</sup> „Recertification“ means the recognition of a product or of a lot for a limited period of time on the basis of the documents available from third parties (e.g. inspection reports), where these documents were not compiled on Naturland's behalf.

Where no processing standards on a specific group of products as yet exist, Naturland® Zeichen GmbH must be applied to for permission to use auxiliary substances and additives, especially flavouring and enzymes. Permission will be granted on the basis of a specific list of criteria<sup>17</sup>.

The definitions of additives and technical auxiliary products are governed by the German law on foodstuffs and consumer products (abbreviated: LMGB).

### **3. Processing procedures**

The processing procedures permitted are described in the standards applying to each specific group of products.

In general, the following processing steps are permissible:

- mechanical and physical processes
- biological processes
- curing
- extraction (solely by using water, ethyl alcohol, vegetable oils and animal fats, vinegar, CO<sub>2</sub>, nitrogen and carbonic acid. The extraction media must be of foodstuff quality and suitable for use in extraction processes.
- precipitation
- filtration

The use of microwaves, ionising rays as well as organisms that have been manipulated by genetic engineering (animals, plants or others), parts of organisms or cells that have been manipulated by genetic engineering (genetic material and others), and products of organisms or cells that have been changed by genetic engineering, is prohibited.

### **4. Packaging**

In the use of packaging, special regard has to be paid to sparing raw materials and minimizing the impact on the environment through production, use and disposal of the packaging materials. Therefore, the role of packaging has to be restricted to a means which fulfils the hygiene requirements and which preserves the health and sensory quality of the products.

Ecological requirements have to be given preference in marketing decisions (prevention of disposal is preferred over recyclable disposable products). Only in cases where multi-use packaging is impossible or pointless is one-way packaging a reasonable solution. The materials for packing should be recyclable in the sense of multiple use of disposal (e.g. packaging of one substance or, if separable, of two substances). The packaging material permitted is listed in the processing standards specific to each product group.

### **5. Storage, bottling, bagging and transport**

All products produced in accordance with these standards must be stored and transported in a way that minimizes the reduction of their quality and the impairment to the environment. For this reason, transport distances should be kept to a minimum. Storage under special conditions (controlled atmosphere, temperature control, drying and humidity regulation) is permitted.

The products have to be clearly and unmistakably labelled during storage and transport; this applies especially for businesses which store, process and transport conventionally produced products in addition to those produced organically. Labelling during transport must be explicit.

Commingling with raw materials that were not produced in compliance with these standards must be excluded.

Substances and processing methods that are permitted for use in storage and transport will be given in positive lists for each specific product group.

### **6. Cleaning and Hygiene**

The cleaning of the production areas as well as of tools and machines must combine a minimum of impact on the environment with a maximum of hygiene. Mechanical-physical methods have to be preferred to chemical disinfection. During the first inspection, a detailed check of the hygiene has to be carried out which should include - among other things - the following aspects:

- the rooms to be cleaned

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<sup>17</sup> This can be ordered from Naturland® Zeichen GmbH, Am Haag 5, 82166 Graefelfing, Germany.

*Part C.; III. General regulations for production*

- the frequency of the cleaning
- the cleansing agents used and their composition
- the staff responsible for the cleaning

Every processor must ensure that he has undertaken everything in his power to prevent the products being contaminated and polluted with cleaning agents. Cleaning methods and the substances used therein must be recorded in a comprehensible manner for inspection purposes. The cleaning and disinfection agents permissible are listed under annex D II. 3.

**7. Pest Control**

Careful and extensive preventive measures have to be carried out to prevent the occurrence of pests. If an infestation is registered nevertheless, in many cases intensified cleaning measures will suffice to eliminate the origin of the infestation if it can be located and removed in time. If further measures should be inevitable, mechanical-physical control methods have to be preferred to the use of chemical substances. The application of chemical storage protection substances, in particular the use of ethylene oxide and hexachlorocyclohexane (HCH) is prohibited. Cases where gassing measures should be necessary require approval by the Naturland® Trademark Ltd.

These measures have to be applied for in advance. The application includes details on the substances to be applied, the waiting period scheduled and the date on which the measure is to be carried out.

The permitted measures for pest control are listed in positive lists for each specific product group.

**8. Quality Guarantee and Checks for Harmful Substances**

Methods and substances that impair the environment are avoided in Naturland agriculture as far as possible. Because of the general environmental damage, it cannot be excluded that harmful substances find their way into organically produced products.

Naturland recommends that wholesalers and processors make spot checks of organically produced products to check for contaminants, as a supplementary quality assurance measure.

## **Part D. Appendix**

### **I. Production**

#### **Appendix 1: Permissible purchased fertilizers and soil improvement agents**

The purchasing of fertilizers from organic farms is permitted. Solid manure from conventional farms, organic and mineral fertilizer – according to 1.3 and 1.5, as well as green compost have to be agreed upon by the adviser and the inspection body responsible before use. Their use is subject to the legal regulations currently in force.

##### **1.1 Solid manure from conventional farms**

- Stable manure (except poultry manure) in connection with the condition of preparation (regulated setting, addition of stone meal) and at least three months rot
- It is strongly recommended to supply the manure seller with straw from organic farms.

##### **1.2 Green compost**

- Green compost may only be used after the explicit approval by Naturland e.V. has been received as to their harmlessness with regard to residues. Soil analyses and compost checks are obligatory. Refer to the list of criteria appendix D. I. 10 and consult the adviser as to the limits and compost additives allowed.

##### **1.3 Other types of purchased manure**

- by-products of processing (horn-, hair and feather waste, castor cake and the like)
- peat without any synthetic additives, only for nursery plants
- sawdust, bark and wood waste (from timber that is not contaminated with fungicides or insecticides)
- sea algae and their extracts

##### **1.4 Supplementary mineral fertilizers**

- stone meal (composition must be known)
- clay soils (e.g. bentonite)
- lime fertilizers with a slow effect (dolomite, carbonic acid lime, shellfish lime, sea algae lime)
- raw phosphates (with a low content of heavy metals)

##### **1.5 Only if required according to the results of soil analyses and after approval of the accredited inspection body responsible**

- basic slag
- Thomas lime, converter lime, lime from iron and steelworks
- trace elements
- potassium magnesia (patent potassium), potassium sulphate, kainite
- calcium sulphate
- sulphur of natural origin
- magnesium sulphate ( $MgSO_4$ )
- calcium chloride ( $CaCl_2$ ) to prevent apples from spotting

When choosing the fertilizers their heavy metal content has to be considered, possible emissions have to be reduced to a minimum; a percentage of 90 mg Cd /per kg  $P_2O_5$  must not be exceeded in phosphate fertilizers.

##### **1.6. Miscellaneous**

- extracts and preparations from plants
- compost activators (microbial or herbal)

## **Appendix 2: Permissible plant protection products**

### **2.1 Biological and biotechnological measures**

- the encouragement and application of the natural enemies of pathogenic agents and crop pests (e.g. predatory mites, hatching wasps)
- insect traps (e.g. sexual pheromones, coloured attractants)
- mechanical repellents (e.g. traps)
- non-synthetic-chemical- deterrents and expellants (e.g. scented agents)

### **2.2 Plant –fortifying and nurturing agents**

Preparations which strengthen the resistance of the plants and inhibit certain pests and diseases:

- plant preparations (e.g. horsetail tea)
- propolis
- algae limes and extracts
- bentonites
- stone-meal
- milk and dairy products
- compost extracts
- wood ash
- beeswax
- hydrolysed protein

### **2.3 Agents against fungus diseases in agriculture, fruit growing and in special crops**

- wettable sulphur
- copper salts\* (max. 3 kg/ha and year, also for potatoes; for hops max. 4 kg/ha and year)
- sodium silicate
- lecithin
- edible natron
- sulphuric lime\*
- potassium permanganate

### **2.4 Agents against animal pests**

- virus, fungus and bacteria preparations (e.g. bacillus thuringiensis)
- preparations of ryania speciosa\*, derris elliptica\*, azadirachta indica (neem)\*
- pyrethrum extract\* (synthetic pyrethroides are prohibited)
- quassia amara\*
- oil emulsions (without synthetic chemical insecticides) on the basis of paraffin oils\* and/or plant oils
- soft soap
- stone meal
- gelatine

**\*after approval by the accredited inspection body responsible**

### Appendix 3: Permissible feed

If feed has to be bought, it has to be certified by Naturland or meet certification standards approved as equivalent by Naturland. If this is not available feed may be purchased from other farms according to the following priority list<sup>18</sup>:

- inspected according to the EU regulations on organic agriculture
- from extensive cultivation as part of a monitored scheme
- conventional agriculture.

#### 3.1 Cattle, sheep, goats, horses, game kept in reserves, rabbits

Up to 10% of the ration of the following feed can be used by ruminants if there is proof that feed of organic origin is not available to the extent necessary (a maximum of 10% of the dry matter, applied to an average ration; the percentage being calculated without the mineral substances):

- flax and colza seeds, -cakes and -expellers
- brewer yeast
- brewer's grains, apple pomace
- dairy products

Basic feed from areas in conversion that have been incorporated in the farm for the first time and have been cultivated in compliance with the standards for less than 12 months as well can be used without further approval. However, it must be taken into account with regard to the 10% limit.

#### 3.2 Pigs

Permitted feed for pigs up to 15% of the ration, if there is proof that feed for the improvement of the protein quality is not available from organic sources in the necessary quantities:

- sunflower-, flax- and colza seeds, -cakes and -expellers
- brewer's grains, apple pomace
- potato protein
- brewer's yeast
- dairy products
- maize gluten feed, wheat gluten feed

#### 3.3 Poultry

Permitted feed for poultry up to 15% of the ration, if there is proof that feed for the improvement of the protein quality is not available from organic sources in the necessary quantities:

- sunflower-, flax- and colza seeds, -cakes and -expellers
- brewer's grains, apple pomace
- potato protein
- brewer's yeast
- dairy products
- maize gluten feed

For the feeding of young stock only:

- Soy beans, steam heated, and soy cake
- Fish, miscellaneous marine creatures and their products and side products (marine creatures resulting from by-catches or remnants of seafood processing only)

#### 3.4 All animal species

- molasses to produce pellets
- seaweed meal
- powders and extracts of plants (only for young stock)
- spices and flavouring
- edible oil for dust fixation, up to 2% (if permitted according to EU regulation No 1804/1999)
- supplements and additives in animal feeding according to appendix II C and D of the EEC regulation No 2092/91:

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<sup>18</sup> The requirements of the EU regulation on the purchase of products from conventional sources must be observed at the same time.

- trace elements
- carrier material of herbal origin
- binders, anti-caking agents and coagulants
- vitamins
- enzymes
- micro-organisms

### **3.5 Processing aids for silage**

- lactic-, acetic-, formic- and propionic acid bacteria
- feed-sugar
- molasses
- whey
- sea salt, coarse rock salt
- enzymes, yeasts

When weather conditions do not allow for adequate fermentation, Naturland may authorise the use of lactic-, formic-, propionic- and acetic acids in the production of silage.

**Appendix 4: Permissible animal stocking density (corresponding to 1.4 dung units)**

Animal stocking density is related to dung units.. A dung unit (DU) is defined as the animal stocking density with an annual output of faecal matter and urine containing not more than 80 kg nitrogen nor more than 70 kg of phosphate (P<sub>2</sub>O<sub>5</sub>).

<b>Species or strain of animal</b>	<b>maximum number of animals per hectare</b>
equines over 6 months (equidae)	2
veal calf	5
other cattle under one year old	5
male cattle 1 - 2 years	3,3
female cattle 1-2 year	3,3
male cattle over 2 years	2
breeding heifers	2,5
fattening heifers	2,5
dairy cattle	2
cows not suitable for breeding	2
other cows	2,5
ewes	13,3
mother goats	13,3
farrows	74
breeding sows (without farrows)	6,5
fattening pigs	10
other pigs	10
fattening hens	280
laying hens	140
pullets	280
fattening ducks	210
fattening turkeys	140
fattening geese	280
fallow deer kept in reserves, including offspring and stags	10
red deer kept in reserves, including offspring and stags	5
breeding rabbits including offspring and males	105

Adjustments should be made for animals which produce different amounts of dung depending on their strain.

If the animals are not kept year-round or if they are to be allocated differently because of their age or the purpose to which they are put, then the above figures will be calculated on the average of the animals kept annually.

**Appendix 5: Minimum surface areas indoors and outdoors and other characteristics of housing in the different species and types of production**

<b>1. Cattle, sheep and pigs</b>			
	Indoor area (net area available to animals)		Outdoor area (exercise area, excluding pasturage)
	Live weight in kg	Minimum size in square meters per animal	Square meters per animal
breeding and fattening cattle and equines	up to 100 up to 200 up to 350 over 350	1.5 2.5 4.0 5.0 minimum of 1 square meter per 100 kg	1.1 1.9 3.0 3.7, minimum of 0.75 square meters per 100kg
dairy cattle		6	4.5
bulls for breeding		10	30
sheep and goats		1.5 per sheep/goat 0.35 per lamb/kid	2.5 0.5 per lamb/kid
suckling sows with farrows up to 40 days		7.5 per sow	2.5
fattening pigs	up to 50 up to 85 up to 110	0.8 1.1 1.3	0.6 0.8 1.0
farrows	over 40 days and up to 30 kg	0.6	0.4
brood pigs		2.5 female brood pig 6.0 male brood pig	1.9 8.0
breeding rabbits (including offspring and males)		1.6	
fattening rabbits	up to 60 days over 60 days	0.15 0.25	

<b>2. Poultry</b>				
	Indoor area (net area available to animals)			Outdoor area (square meters of area available in rotation per animal)
	Number of animals per square meter	centimetre (cm) of perch per animal	Nest	Square meters per animal
laying hens	6	18	8 laying hens per nest or in case of common nest 120 cm <sup>2</sup> per animal	4 if the limit of 170 kg N per hectare per year is not exceeded
fattening poultry (in fixed housing)	10 with a maximum of 21 kg live weight per square meter	20 ( for guinea fowl only)		4 fryers and guinea fowl 4.5 ducks 10 turkeys 15 geese In all the species mentioned above the limit of 170 kg N per hectare per year must not be exceeded
fattening poultry (in mobile housing)	16 (*) in mobile poultry houses with a maximum of 30 kg live weight per square meter			2.5 if the limit of 170 kg N per hectare per year is not exceeded
(*) Only in the case of mobile houses not exceeding 150 square meters floor space which remain open at night.				

**Appendix 6: Required conditions of poultry housing**

- They must have entry/exit pop-holes of a size adequate for the birds, and these pop-holes must have a combined length of at least 4 meters per 100 square meters area of the house available to the birds.
- Each poultry house must not contain more than:

chickens	4800
laying hens	3000
guinea fowl	5200
Muscovy or Peking ducks	female: 4000 male: 3200
capons, geese, turkeys	2500
Total usable area of poultry houses for meat production on any single production unit must not exceed	1600 square meters

## **Appendix 7: Rearing of pullets**

### **7.1 Scope/implementation**

This appendix of the regulation applies to all producers rearing pullets who supply Naturland® farms with pullets. It will enter into binding force on 01/04/2001.

The regulations for the husbandry of laying hens (see B. II. 1. 5.1) are applied by analogy to pullets as well (Animals, housing equipment, cleaning and disinfection, exercise area management). In addition, the following shall apply:

### **7.2 Organizing the pullet supply**

#### **Purchase of pullets**

Pullets shall be purchased from organically managed pullet rearing farms if available, and according to point B. II. 3 of these regulations. If organically raised pullets are not available the purchase of conventional pullets by the producer farming organic laying hens is possible within a limit of up to the 18<sup>th</sup> week of their lives. The husbandry requirements mentioned below have to be observed.

#### **Time limits for marketing**

The pullets providing eggs which are sold under the Naturland certification logo have at all events to have been kept and fed on an organic farm at least six weeks prior to the sale of the eggs. This farm must operate according to the standards defined in the current standards.

#### **Husbandry conditions from the first day on**

In any case, the pullets must be reared under controlled conditions according to the regulations mentioned in 7.3 to 7.5 from the first week on. With this aim in view, particular inspection contracts will be signed with pullet farmers as long as there is not given an extensive availability of organic pullets.

Exemptions hereof can only be made if:

- there is proof that pullets had been ordered at least 6 months in advance at a contracted pullet farmer (copy to the concerned member association respectively) and
- nationwide there are no animals available that have been farmed according to these husbandry requirements (only up to 01/01/2002) or
- the stock of laying hens is less than 100 animals.

### **7.3 Animals**

#### **Principle**

When choosing breeds or lines the animals' ability of adapting to various environmental conditions, their vitality and robustness against illness, parasites and infections have to be taken into account.

#### **Purchase of chicks**

If possible chicks are descended from organically produced breeding animals.

#### **Operations in animals**

Changing operations in the animal like beak trimming, wing clipping etc. are not permitted.

#### **Cocks**

From the beginning of rearing, there should be housed at least one cock per every 100 animals that are being reared in each flock.

## 7.4 Husbandry requirements

### Principle

To avoid possible behavioural disturbances the pullets should have the opportunity of learning about the natural behaviour during rearing that may be exercised in the laying stable.

The rearing of the pullets should be carried out in a way that enables the development and building up of robustness and a natural immunization. The rearing of pullets takes place in floor management or in aviary systems. The stable system which is used for rearing the pullets should be identical to the one used in the laying stable later on.

### Stable

#### Hen house

The particular hen houses and groups of pullets must be physically separated in a way that reduces infections and/or parasite contamination and enables a sustainable management of grassland exercise areas. Buildings, stable equipment and husbandry systems are to be structured and kept in a way that corresponds to the requirements of health and wellness of the stockman and the animals (hen house climate, low dust pollution, daylight etc.)

#### Calculation of stocking density

During the first weeks of their lives, chick rings are permitted.

From the 12<sup>th</sup> week on a maximum of 10 animals per square meter of the run available is permitted, for younger animals there is a maximum of 18 kg live weight per square meter (point of reference for the 6<sup>th</sup> week of their lives: 18 animals per square meter in indoors area). In hen houses with more than one level the number of animals is restricted to 24 per square meter of total floor space (base of the hen house) (12<sup>th</sup> week of their lives).

The calculation of the run available includes all areas that have a width of at least 30 cm, a maximum gradient of 14% and a minimum headroom of 45 cm.

In stables with an integrated climate conditioned outdoors area a maximum of 13 pullets per square meter (12<sup>th</sup> week of their lives) of the run available may be reared in the warm area, given the condition the climate conditioned outdoors area is permanently accessible during the period of activity, is fenced round and lighted and has wind protection facilities.

#### Scratching area in the hen house

From the beginning of housing, there must be litter available to the chicks so they can manipulate it. A minimum of half of the exercise area in the stable must be available as a littered scratching area. The litter must be kept loose, dry and clean.

#### Light

If possible the stable is to be lighted sufficiently by daylight. To carry out a lighting programme the entry of light and the duration may be reduced using corresponding equipment.

#### Feeding facilities

The feeding place offered, the feeding equipment and the littered areas for the offering of grains must be created in a way that enables all animals to feed simultaneously.

#### Drinking facilities

There is clean, fresh drinking water available to the animals at all times.

#### Perches

Perches above ground level must be available from the first week of the chicks' lives; from the 12<sup>th</sup> week of their lives there is available 12 cm perch per animal; one third hereof are perches above ground level. The cross section of the perches is at least 30 x 30 mm, the upper edges are rounded. There are only taken into account such perches having a minimum of 25 cm of a horizontal distance from each other for the calculation of the total length of perches.

#### Dust bathing

From the first week of their lives the animals must have the possibility of dust bathing.

#### Stable exits

The hen house exits to the outdoors area are sufficiently sized so the chickens can circulate without problems or limitations.

**Climate conditioned outdoors area**

From the 12<sup>th</sup> week of their lives at the latest the animals must have access to a reinforced and covered climate conditioned outdoors area which must be of the size of at least ¼, in newly built hen houses at least 1/3 of the run available<sup>19</sup>. The climate conditioned outdoors area can be fixed in the stable system and taken into account in the calculation of the stocking density (see calculation of stocking density).

**Exercise area**

In addition to the climate conditioned outdoors area there should be an outdoor run or a grassland run equipped with protective facilities available from the 12<sup>th</sup> week on.

Non-reinforced exercise areas must be laid out in way that enables either the establishment of pasture rotation or, for smaller exercise areas, the taking of measures (e.g. soil exchange) in regular periods to reduce parasite and nutrient contamination to a minimum.

**7.5 Feeding**

Pullet rearing farms operating according to Naturland standards may utilize up to 15% of the total dry matter of feed of agricultural origin which was not produced in compliance with the standards, given the condition the fodder concerned are listed in the positive list of fodder (appendix D. I. 3 of these standards) respectively. Contractual producers who do not operate according to these standards or who do not meet the requirements of the EC regulation for organic agriculture but who observe the husbandry requirements described in here only may not use meat and bone meal and coccidiostatics.

From the 7<sup>th</sup> week at the latest the pullets must be allowed to feed on a suitable grain mix from the litter.

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<sup>19</sup> In case of restructuring being necessary it has to be realized in a limited period of time until 31.12.2002.

**Appendix 8: Minimum ages for slaughtering of poultry**

<b>Poultry species</b>	<b>Minimum age in days</b>
chickens	81
capons	150
Peking ducks	49
female Muscovy ducks	70
male Muscovy ducks	84
mallard ducks	92
Guinea fowl	94
turkeys and broiling geese	140

**Appendix 9: Products authorised for cleaning and disinfection**

- alcohol
- caustic potash
- caustic soda
- quicklime
- acetic acid
- formaldehyde
- potassium and sodium soap
- lime
- milk of lime
- lactic acid
- sodium hypochloride
- sodium carbonate
- oxalic acid
- peracetic acid
- natural essences of plants
- phosphoric acid (dairy equipment)
- nitric acid (dairy equipment)
- water and steam
- hydrogen peroxide
- citric acid
- cleaning and disinfection products for teats and milking facilities

## Appendix 10: Criteria for the use of compost in Naturland® farms

When purchasing compost the following criteria have to be observed:

green compost may only be applied with the express approval of Naturland e.V., if it is certain that it does not contain any problematical residues. To ascertain this, it is imperative to conduct soil analyses and examine the compost, and the permitted components of this green compost of limited.

Garbage compost and compost obtained from recycling operations are not permitted.

### 1. Soil analysis

A soil analysis regarding the present contamination with the heavy metals lead, cadmium, chrome, copper, nickel, mercury and zinc is required.

As a standard the following soil values are valid (soil value 1 according to Eickmann and Kloke) in mg/kg dry matter: lead 100; cadmium 1; chrome 50; copper 50; nickel 40; mercury 0.5; zinc 150.

For soils with pH values under 6, clay content under 8 % and a high geogenic source of contamination, special care is required.

The soil analysis has to be carried out at least every 10 years.

### 2. Compost analysis

A compost analysis regarding the contamination with the heavy metals lead, cadmium, chrome, copper, nickel, mercury and zinc is required. The values of compost class 1 according to Riess (1992) are valid in mg/kg dry matter:

Lead 75; cadmium 0.75; chrome 75; copper 50; nickel 30; mercury 0.5; zinc 200.

The analysis has to be carried out at least once a year.

If applicable, an analysis regarding harmful organic substances must be carried out. For dioxin and furan there is a limit of 17ng ITE/kg dry matter, for PCB a limit of 0.033mg/kg dry matter per single congene or 0.2 mg/kg dry matter PCB (6).

### 3. Compost starting materials

#### a) Permitted without limitation:

- green forage, cut forage, foliage (not from roadsides and other more contaminated areas)
- cut reed grass, underwater cut forage (not from more contaminated waters)
- Materials from non-treated timber: bark, sawdust, shavings, wood
- Mushroom substrate
- Foodstuff waste from organic production and processing
- Lees, yeast, siliceous filters from organic processing

#### b) Permitted with limitation:

In individual cases only, residue analyses must be presented if required, maximum proportion 20-50%; approval by the advisor

- Vegetable/fruit waste from conventional production
- Oilseed residues from conventional production
- Materials from treated timber: bark, sawdust, shavings, wood
- Animal waste, wool
- Side products of processing (horn meal; hair and feather waste; castor cake and similar substances; not for application on forage areas)

#### c) Not permitted:

- Kitchen waste from selective collection (green bin)
- Paper
- Tobacco
- Waste from leather processing
- Stranded goods

### 4. Applied amount

The general limit of 0.5 dung units per hectare and year in the average of the crop rotation (with the exception of horticulture-, fruit growing and viticulture) is valid.

## II. Processing

### Appendix 1: List of Substances Permitted for Pest Control

#### 1. Preventive Measures

##### Structural Measures:

The Structural conditions of the business and storage rooms must be examined with respect to weaknesses. The weaknesses should be removed if possible. In particular, the following areas should be regarded:

- roof and beam constructions (background, gaps, connections)
- ceiling panels (background, cracks, conjunctions)
- wall panels (hollow spaces, paint peeling off)
- pipes (bridges of warmth and cold, condensation)
- insulations (defective seals, hiding corners)
- air conditioning systems (seals, walls that were broken through)
- walls (hiding places, plaster cracks)
- blind spots and hollow spaces (behind separating walls)
- adjoining rooms, upper and lower floors (possibilities for migrations)
- shelves (corners, gaps between the wood and walls, gaps on the floor)
- machines, cases, boxes and so on (potential hiding places)
- wastes, dust, dirty areas in the whole storing area

##### Measures to be taken:

- fly meshes (mesh width 1-2mm) to close the windows for flying insects
- sealing of passages from pipes and air conditioning, meshes to close the passages
- insulation of cold and hot water pipes, thorough sealing of the insulations
- if possible, foam materials, stone or glass wool should be avoided

##### Measures for storing raw materials and ingredients

- thorough cleansing of all rooms, silos, containers and machines (e.g. with brooms, vacuum cleaners, compressed air)
- organisation of storage rooms should guarantee overall view, avoiding dark corners
- avoiding hollow spaces, lowered ceiling, panels and so on
- cleaning with hot water
- goods should be stored on pallets to allow checks and cleansing measures from below
- providing an extra room for observation of goods that are newly stored in order to control the presence of insects

##### Measures to be taken in case of insect infestation

- insect traps such as adhesive boards, cereal probes, light- and pheromone traps can provide more information on the type and impact of the infestation in addition to the simple monitoring, and serve as a constant surveillance of the premises.

##### Preventive measures and instruments for observation

- insect meshes (on all places that allow the intrusion of insects, e.g. fly meshes at the windows aiding the ventilation of air)
- thermal measures (cooling, ventilation, blast freezing; temperatures above 40 degrees and below -20 degrees centigrade kill off insects and their eggs)
- light traps (light traps in the ultraviolet range must be used only in closed rooms since they will otherwise attract insects from outside)
- adhesive foils (for areas with little dust; transparent foils for windows)
- pheromone traps (for observation and trapping of masses of butterflies, bugs and cockroaches indoors)
- natural oils (ethereal oils emulsified for water solubility have a repellent or even toxic effect. Combinations of rape, dill or coconut oil (specialist shops) are applied with special hot steam methods and damage the insect's chitin shell as well as their eggs and larvae).

#### 2. Controlling of Rodents

Rodents can be driven away by animal oils and supersonic sound machines. Live traps and fatal traps for rats and mice are available in specialist stores. If these measures should not suffice, substances causing blood coagulation should be applied (only in secured, lockable and solid bait boxes; baits must be of paste to exclude carrying off). In summer, drinkable baits may be installed in safe places.

Specialists for pest control have to be informed of these standards. Control measures have to be sent to the Naturland® Trademark Company Ltd. for expert advice and approval.

**Appendix 2: Range of inspection in the processing business**

- documentation of the current offer as well as of the advertisement method and business papers
- documentation of the products brought into the market with classification, recipes and labelling
  
- certificate, trade certificate or specification of all raw materials
- list of suppliers
- recipes of half-finished and finished products
- documentation of ingredients used, additives and auxiliary products
  
- overview of the processing methods
- overview of machines and tools (among others, type and function of the machines)
- means of transport and warehouse
  
- list of the packaging materials used
- list of the cleansing agents used
- list of the means for pest control applied
  
- hygiene survey

**Appendix 3: Products authorised for cleaning and disinfection**

- alcohol
- caustic potash
- caustic soda
- quicklime
- acetic acid
- formaldehyde
- potassium and sodium soap
- lime
- milk of lime
- lactic acid
- sodium hypochloride
- sodium carbonate
- oxalic acid
- peracetic acid
- natural essences of plants
- phosphoric acid (dairy equipment)
- nitric acid (dairy equipment)
- water and steam
- hydrogen peroxide
- citric acid
- cleaning and disinfection products for teats and milking facilities