

HARMONIZED ORGANIC AGRICULTURE STANDARD FOR WEST AFRICA

SECOND DRAFT

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INTRODUCTION

Organic agriculture entails production system that sustains the health of soils, ecosystems, biodiversity and people. It is also a system of production which does not use synthetic fertilizers and drugs, pesticides, herbicides, growth regulators, antibiotics, hormone stimulant and/or livestock feed additives to grow crops and raise animals. It combines traditional knowledge, innovation, modern science, technologies and practices to benefit the shared environment and promote fair relationships and a good quality of life for all involved. The aims of organic agriculture are embedded in the four principles of health, ecology, fairness and care.

The Organic Agriculture Standard in West Africa is written for organic agriculture production in West Africa with reference from existing organic standards in West Africa, the East African Organic Standard, African harmonised standard for organic production ARS:751:2013 and IFOAM Organics International Basic Standard. It has been adapted to conditions in West Africa. The aim is to unify standard for production, processing, storage, labeling and marketing system of organic agricultural products in West Africa. It can be used for self-assessment by producers and certification bodies in accordance with IFOAM accreditation.

The Harmonized Organic Agriculture Standard for West Africa is intended for the development of organic production and trade in West Africa. The standards shall support the platform for developing consumers trust and formulates stand points which can be used for international negotiations on standards. Furthermore, it can be a basis for equivalence agreements with other countries.

The Harmonized Organic Agriculture Standard in West Africa has been written for easy access and understanding of the users. The standard is not over prescriptive since organic agriculture is adapted to local conditions. The standard covers plant production, animal husbandry, bee-keeping, aquaculture, wild collection, processing, and products regardless of their final use.

Organic agriculture in West Africa is evolving and dynamic. New knowledge is continuously being generated. As a result, this standard will be revised regularly to incorporate new knowledge. The revision will involve consultations with the stakeholders.

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1. *Scope*

Key players in organic agriculture following this Organic Standard in West Africa can claim in the market place that their production or products are organic and produced according to this standard. Therefore, the standard extends from primary production and handling to processing and labeling.

This Organic Standard covers plant production, animal husbandry, bee-keeping, the collection of wild products and processing, and products therefrom, regardless of their final use.

This document covers requirements for production. This does not include inspection or certification requirements. It can, however, be used for both self-assessment and certification.

2. *Normative references*

The following standard contains provisions which, through reference in this text, constitute parts of this Standard.

Codex Alimentarius: Guidelines for the production, processing, labeling, and marketing of organically produced foods (CAC/GL 32 – 1999, Rev. 1 – 2001). These are referred to in the text as Codex Alimentarius Guidelines.

IFOAM Organics International Basic Standards for Organic Production and Processing. Version 2005. These are referred to in the text as IFOAM Organics International Basic Standards.

- **REGLEMENT (CE) NO 834/2007 DU CONSEIL** du 28 juin 2007, relatif à la production biologique et à l'étiquetage des produits biologiques et abrogeant le règlement (CEE) No 2092/91.
- **REGLEMENT(CE) NO 889/2008 DE LA COMMISSION** du 5 septembre 2008 portant modalités d'application du règlement (CE) No 834/2007 du Conseil relatif à la production biologique et à l'étiquetage des produits biologiques en ce qui concerne la production biologique, l'étiquetage et les contrôles.
- **REGLEMENT DE BASE DE L'IFOAM**, version de Janvier 2011 sur l'agriculture biologique
- **CAHIER DES CHARGES DE NATURE ET PROGRES**, version 2009 sur la production biologique
- **CAHIER DES CHARGES DE L'AFRIQUE DEL'EST**, 1ère Edition 2009 sur l'agriculture biologique
- **NORMES DU CODEX ALIMENTARIUS** (1999, GL32) sur la production, la transformation, l'étiquetage et la commercialisation des aliments issus de l'agriculture biologique
- **NORMES DU CODEX ALIMENTARIUS** sur l'usage de l'emballage et le transport des fruits et légumes frais
- **ISO 9000** version 2005 sur systèmes de management de la qualité : principes essentiels et vocabulaire
- **NORME BURKINABE NBF01-027 : 2007** sur le code d'usage recommandé pour l'emballage et le transport des fruits et légumes frais
- **NORME BURKINABE NBF01-028 : 2009** portant norme générale d'étiquetage des denrées alimentaires préemballées.
- CAC/GL 32, *Codex Alimentarius — Guidelines for the production, processing, labelling, and marketing of organically produced foods*
- IFOAM *Basic Standards for Organic Production and Processing. Version 2005.*
- East African Organic Standard, EAS 456:2007

3. *Terms and definitions*

For the purposes of this standard, the following definitions apply:

Allopathic

Relating to or being a system of medicine that aims to combat disease by using remedies (such as drugs or surgery) which produce effects that are different from or incompatible with those of the disease being treated.

Biodiversity: the variety of life forms and ecosystem types on Earth. Includes genetic diversity (i.e., diversity within and between species), species diversity (i.e., the number and variety of species), ecosystem diversity (total number of ecosystem types).

Breeding: selection of plants or animals to reproduce and/or to further develop desired characteristics in succeeding generations.

Buffer zone: a clearly defined and identifiable boundary area bordering an organic production site and adjacent areas that are established to avoid contact with substances which shall not be used according to this standard. The zone should have windbreaks, runoff diversions, diversion ditches to prevent commingling. No recommended distance. But 10 – 20 m should suffice and must be guided by the risk of contamination.

Produce from buffer zone should be harvested separately, labelled, stored and sold as non-organic. Records of buffer zone activities must be kept by the farm operators because certification bodies can demand for it at any time.

Child: In cases involving employment in hazardous sectors, *child* denotes a person under the age of 18 years

Child labour: Any employment that interferes with the legal rights of a child and culturally appropriate educational needs

Contamination: pollution of organic product or land or contact with any material that would render the product unsuitable for organic production or as an organic product.

Conventional: any material, production, or processing practice that is not organic or organic “in-conversion”.

Conversion period: the time between the start of organic management and the time when crops and animal products qualify as organic. The duration could last 1 – 3 years depending on the production system e.g. annual or perennial crops. Prescribed management requirements should be strictly adhered to during conversion period.

Crop rotation: the practice of alternating the species or families of annual and/or biennial crops grown in a certain field in a planned pattern or sequence so as to break weed, pest, and disease cycles and to maintain or improve soil fertility and the content of organic matter.

Food additive: an enrichment, supplement, or other substance which can be added to a foodstuff to affect its keeping quality, consistency, colour, taste, smell, or other technical property.

Food additive means any substance not normally consumed as a food by itself and not normally used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food results, or may be reasonably expected to result, (directly or indirectly) in it or its by-products becoming a component of or otherwise affecting the characteristics of such foods. The term does not include contaminants or substances added to food for maintaining or improving nutritional qualities, or sodium chloride.

Food fortification: The addition of one or more essential nutrients to a food, whether or not it is normally contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients in the population or specific population groups

Genetic engineering: a set of techniques from molecular biology (such as recombinant DNA) by which the genetic material of plants, animals, microorganisms, cells, and other biological units are altered in ways or with results that could not be obtained by methods of natural mating and reproduction or natural recombination. Techniques of genetic modification include, but are not limited to, recombinant DNA, cell fusion, micro and macro injection, encapsulation, gene deletion, and doubling. Genetically engineered organisms do not include organisms resulting from techniques such as conjugation, transduction, and natural hybridization.

Genetically modified organism (GMO): a plant, animal, or microbe that has been transformed by genetic engineering.

Green manure (e.g. cover crops): a crop that is incorporated into the soil for the purpose of soil improvement and which may include spontaneous crops, plants, or weeds.

Habitat: the area over which a plant or animal species naturally exists; the area where a species occurs. Also used to indicate types of habitat, e.g., seashore, riverbank, woodland, and grassland.

In-conversion: A crop which is grown both as organic and non-organic (conventional or in-conversion) on the same farm

Ingredient: any substance, including a food additive, used in the manufacture or preparation of a food or present in the final product (although possibly in a modified form).

Irradiation (ionizing radiation): processing of food products by ionizing radiation, specifically gamma rays, X-rays, or accelerated electrons capable of altering a food's molecular structure for the purpose of controlling microbial contaminants, pathogens, parasites, and pests in food, preserving food or inhibiting physiological processes such as sprouting or ripening.

Label: any written, printed, or graphic representation that is present on a product, accompanies the product or is displayed near the product.

Monoculture: Rearing of single species

Nanomaterials: Substances deliberately designed, engineered and produced by human activity to be in the nanoscale range (approx. 1-300 nm) because of very specific properties or compositions (e.g. shape, surface properties, or chemistry) that result only in that nanoscale. Incidental particles in the nanoscale range created during traditional food processing such as homogenization, milling, churning, and freezing, and naturally occurring particles in the nanoscale range are not intended to be included in this definition

Operator: an individual or organization responsible for ensuring that products meet these standards.

Organic: *organic* refers to the farming system and products described in these standards. *Organic* does not refer to organic chemistry.

Organic agriculture: farming system (and products thereof) in compliance with these standards.

Organic product: a product which has been produced, processed, and/or handled in compliance with these standards.

Organic seed and plant material: seed and planting material that is produced under organic management.

Parallel production: any production where the same unit is growing, breeding, handling, or processing the same products in both an organic and a non-organic system. A situation with organic and in conversion production of the same product is also parallel production.

Polyculture: rearing of multispecies

Processing aid: any substance or material (not including apparatuses or utensils) not consumed as a food ingredient itself and which is used in the processing of raw materials, foods, or ingredients to

fulfil a certain technical purpose during treatment or processing and which may result in the presence of residues or derivatives in the final product.

Propagation: the reproduction of plants sexually (i.e., seed) or asexually (i.e., cuttings, root division).

Shall: a required state or action.

Should: a recommended, desirable, or expected state or action.

Sustainable exploitation: a stock that is managed/exploited in such a way that the current use of the stock will not be prejudiced and does not have a negative impact on the eco-systems.

Synthetic: manufactured by chemical and industrial processes, includes products not found in nature, or simulation of products from natural sources (but not extracted from natural raw materials).

Traceability: The ability to follow the movement of a food through specified stage(s) of production, processing and distribution

Unsustainable exploitation: a stock that is exploited without consideration for sustainability and ecosystem or stock that are threatened or endangered or from an overexploited fisheries

4. General requirements for organic production

The requirements of this clause shall apply to all categories of organic production and to all operators

4.1 General

4.1.1 Operators shall avoid using chemical products that may endanger human health or the environment. If there are products that are considered to be less harmful, they shall be used. Only identifiable and traceable products should be used.

4.1.2 Operators shall take relevant precautionary and approved measures to avoid the contamination of organic sites and products. Contamination of organic products that results from circumstances beyond the control of the operator may alter the organic status of the operation, the product, or both.

4.1.3 Products with undesired substances, such as residues of pesticides or concentrations of heavy metals beyond the maximum tolerable level shall not be sold as organic. (More detailed standards will be developed in future as required).

4.1.4 The operator shall act in accordance with relevant legislation.

4.2 Genetically Modified Organism and Nanotechnology

4.2.1 The deliberate use or negligent introduction of genetically modified organisms or their derivatives to organic farming systems or products shall not be used. This shall include animals, seed, propagation material, and farm inputs such as fertilizers, soil conditioners, or crop-protection materials.

4.2.2 Organically processed products shall not use ingredients, additives, or processing aids derived from GMOs.

4.2.3 Inputs, processing aids, and ingredients shall be traced back one step in the biological chain from which they are produced in order to verify that they are not derived from GMOs.

4.2.4 Genetically modified organisms shall not be used in the conventional production activity on farms not fully converted to organic production.

4.2.5 All contaminated products with GMO are not allowed.

4.2.6 The level of contamination of agricultural products with GMO is 0.9%, above shall not be labelled as organic.

4.2.7 The deliberate or ignorant use of product issued from nano technology is not allowed in any form.

4.3 Social justice

4.3.1 Operators shall have a policy on social justice. Operators who hire fewer than 10 persons for labour are not required to have such a policy.

4.3.2 In cases where production is based on a violation of the Universal Declaration of Human Rights of the United Nations, that product shall not be declared organic.

4.3.3 Operators shall not use forced or involuntary labour.

4.3.4 Employees and contractors of organic operations shall have the freedom to associate, the right to organize, and the right to bargain collectively.

4.3.5 Employees shall have equal opportunity and adequate wages when performing the same level of work, regardless of colour, creed, or gender.

4.3.6 Operators shall not hire child labour.

Children may work on their family's farm or a neighbouring farm provided that

- such work is not dangerous to their health and safety
- it does not jeopardize the children's educational, moral, social, and physical development
- they are supervised by adults or have authorization from a legal guardian.

4.3.7 Health and safety: standards shall contain regulations on health and safety measures in organic workplaces (farms, processing, etc.). If so, suggestions for appropriate text are welcome.

4.3.8 Fair trading conditions: standards shall contain regulations on fair trading practices. If so, suggestions for appropriate text are welcome.

4.4 Documentation and transparency

4.4.1 Operators shall maintain records of their production, appropriate for the scale of production and the competence of the operators.

4.4.2 Operators shall give interested parties relevant information about their production. The operator shall maintain a system for traceability of organic products.

4.5 Adherence to relevant legislation

The operator shall act in accordance with relevant national legislation that regulates their businesses.

4.6 Knowledge about organic production

The operator shall ensure that all persons involved in organic production have adequate knowledge of organic production and the relevant parts of this standard

4.7 Contamination

- 4.6.1 The operator shall use only inputs that have been approved by this standard. An operator who seeks to use any products that are not listed and approved under this standard shall first seek clearance from the body responsible for the approval of inputs .
- 4.6.2 The operator shall take relevant precautionary measures to avoid the contamination of organic sites and products. Where there is a reasonable suspicion of substantial contamination by, for example, soil, water, air, inputs or ingredients, appropriate actions shall be taken.
- Litter and production waste, both on farms and in processing, shall be handled in such a way that they do not contaminate the organic products or the environment.
- 4.6.3 **Synthetic** chemical products shall be properly labelled and safely stored.
- 4.6.4 Litter and production waste on farms and in processing units must be handled in such a way that they do not contaminate organic products or the production environment.
- 4.6.5 Contamination of biological products, caused by circumstances beyond the operator's control may change the biological status of the operation, product or both.
- 4.6.6 Equipment and tools used in **conventional** production should be thoroughly cleaned before being used in organic production. Sprayers and other containers must be intended for organic use only
- 4.6.7 Farms, in particular market gardens, must be remote sources of water liable to be contaminated by synthetic chemical pesticides and other dangerous contaminants.
- 4.6.8 The minimum distance of market garden production sites from the shores of water reservoirs and lakes must be 100 meters, and from wastewater and drainage channels, at least 25 meters.**
- 4.6.9 Sprinkler irrigation of leafy vegetables and fruits with water from a doubtful source such as drainage channels, unmaintained wells is prohibited.
- 4.6.10 Organic production areas must be free from packaging of pesticides, fertilizers and other non-biodegradable materials.
- 4.6.11 Cultivation areas must be located upstream of conventional farms, risk areas (eg hospitals, wastewater evacuation basins, etc.)
- 4.6.12 Organic crop production areas must be located at least 30 meters **buffer zone** from busy highways and conventional farms. Otherwise, special precautions must be taken, in particular the installation of living hedges of considerable height.
- 4.6.13 Crop production areas should not be located in the landing path of airplanes.
- 4.6.14 Water used in the preparation of foodstuffs must comply with the conditions governing national law (ref. Decree setting the standards for the discharge of pollutants into the air, water and soil, then the decree defining and procedures for delimitation of water protection perimeters intended for human consumption.

5 Plant Production

5.0 Starting Organic Crop production

- The land should be somewhat virgin or be under fallow for a minimum period of three (3) years
- The history of the land could be backed up with soil testing analysis (where necessary) showing the heavy metal content of the land to be below the permissible level recommended by the FAO.
- The risks of contamination from the neighbouring land users should be very low
- The land area should be large enough to accommodate buffer zone. The buffer zone shall be 30 meter minimum based on the neighbouring activities, what substances are used, how they are applied, prevailing wind patterns, and any physical barriers between potential sources of risk and mushroom production site.
- In case of parallel production of both organic and conventional on the same farm, the organic and conventional parts of the farm shall be clearly and continuously separated.

5.1 Conversion of conventionally managed land or crops to organic

5.1.1

One (1) year for vegetables in countries where there is strict regulation for vegetable production in the conventional system and three (3) years in the countries where the condition is otherwise.

Two (2) years minimum for annual crops.

The conversion period is a minimum of three years for perennial crops.

- 5.1.2 The conversion period may be extended depending on past land use (for example, heavy use of pesticides with a risk of contamination of products).
- 5.1.3 During the conversion period, the management of the land shall fulfill the requirements of these standards.

5.2 Parallel production

- 5.2.1 The whole farm should be converted to organic production. If the whole farm is not converted, the organic and conventional parts of the farm shall be clearly and continuously separated.

These practices include the use of separate facilities (buildings, stores, equipment and machinery).

The farmer shall demonstrate through records and practices that strict adherence is applied to

1. Avoid the use of same machinery and equipment on conventional and organic farms (If the same machinery and equipment is used for conventional and organic farms. There must be a cleaning protocol that compliant to the clause 5.10.2. on contamination.)
 2. Separate storage facilities are provided for organic and conventional equipment, machinery, fertilizers and plant protection products.
 3. Separate store house for crops from organic and conventional farms
 4. Records on yields and sales are well maintained at all time for verification
- 5.2.2 Land converted to organic production shall not be alternated (switched back and forth) between organic and conventional production. Proper documentation of farm procedure, record keeping, is required.

- 5.2.3 A crop which is grown both organic and non-organic (conventional or in-conversion) on the same farm shall not be sold as organic unless the production is done in a way that allows clear and continuous separation of the organic and non-organic production (i.e. the varieties for the organic and non-organic crop differ in such a way that they can easily be distinguished from each other).

5.3 Biodiversity

- 5.3.1 Primary ecosystems such as primary forests and wetlands shall not be cleared or drained for the purpose of establishing production according to this standard.
- 5.3.2 To the extent possible and appropriate for the crop and the conditions, trees shall be left in the fields.
- 5.3.3 Boundaries such as hedges, roads, paths, and ditches should be used. They act as important wildlife corridors through agricultural land, help to maintain a diverse ecology, and provide a habitat for many beneficial animals and insects and shelter for livestock. As for the issue of roads going through the farms' buffer zones, this will be limited to minimize contamination.
- 5.3.4 Care for biodiversity should manifest itself throughout the holding to enhance landscape features, habitat, wild plants, and animal species.

5.4 Farming system diversity

- 5.4.1 Diversity in plant production and activity to secure organic matter, fertility, microbial activity, and general soil health shall be ensured by crop rotation, variation in plantings, intercropping, agroforestry, or other appropriate measures.
- 5.4.2 For annual crops, a crop rotation shall be established. For perennial crops, other plants shall be intercropped. For perennial crops that are grown as monocultures where intercropping is not possible (e.g., sugarcane), other means of diversity shall be applied to the growing system.
- 5.4.3 The operator is encouraged to use and preserve indigenous breeds, varieties and species of plants.

5.5 Soil and water conservation, including erosion control

- 5.5.1 Soil conservation shall be an integral part of the organic farming system. In order to prevent erosion by wind and water, all operators shall take measures appropriate to the specific local condition of climate, soil, slope, and land use. Examples are the use of windbreaks, soil cover, cover crops, minimum cultivation, terraces, contour planting, and late removal of crop residues.
- 5.5.2 Relevant measures shall be taken to prevent or remedy the salinization of soil and water, such as natural rocks (gypsum, sulphur, ash, etc).
- 5.5.3 Preparing land by burning vegetation is not allowed to protect organic matter and biodiversity.
- 5.5.4 Operators shall return nutrients, organic matter and other resources removed from the soil through harvesting by the recycling, regeneration and addition of organic materials and nutrients.
- 5.5.5 Grazing management shall not degrade land or pollute water resources. This applies also to all manure management and applications

5.5.6 Operators shall not deplete or excessively exploit water resources, and they shall seek to preserve water quality. Where possible, they shall recycle rainwater and monitor water extraction. Water harvest shall be practiced where appropriate.

5.6 Soil fertility management

5.6.1 Economizing and recycling of nutrient substances, an appropriate crop rotation, and the intention of minimizing nutrient leaching are all requirements for organic production.

5.6.2 Material of microbial, plant, or animal origin shall form the basis of the fertility programme. The source of the manure has to be organic. When manure from organic source is not available, manure from conventional farm must be well cured before use.

5.6.3 Fertilizers of mineral origin shall only be applied in the form in which they naturally exist and are extracted. They shall not be rendered more soluble by chemical treatment, other than the addition of water.

5.6.4 Mineral fertilizers may only be used (with approval from Certification Bodies) in a programme addressing long-term fertility needs together with other techniques such as organic-matter additions, green manures, rotations, and nitrogen fixation by plants.

Fertilizers and soil conditioners of natural origin may be used if they are not listed as not allowed in appendix 3. Fertilizers and soil conditioners of synthetic origin shall not be used if not listed as allowed in appendix 2. Products approved for use in organic agriculture according to the IFOAM Organics International Basic Standards and Codex Alimentarius Guidelines are allowed.

5.6.5 No synthetic nitrogenous fertilizers, including urea, shall be used.

5.7 Pest, disease, and weed management

5.7.1 Physical methods for pest, disease, and weed management, including the application of heat and flooding, may be used. Cultural methods such as early planting, delay planting, cover crops, mulching and spatial crop intensification can be used.

5.7.2 Planting of resistant variety, use of natural enemies, maintenance of biodiversity and animal grazing in-between crop cycles to break the lifecycle of pest and pathogens. 5.7.3 Products for the management of pests, disease, and weeds that are prepared at the farm from local plants, animals, and micro-organisms (that are not GMO) may be used, if not listed as not allowed in appendix 3.

5.7.4 Active ingredients of natural origin in inputs for pest, disease, weed, or growth management may be used if not listed as not allowed in appendix 3. Active ingredients of synthetic origin shall not be used if not stated as allowed in appendix 2. Products approved for use in organic agriculture (Certified organic products) according to the IFOAM Organics International Basic Standards Basic Standards and Codex Alimentarius Guidelines are allowed.

5.7.5 All other ingredients in an input (non-active ingredients such as carriers and wetting agents) shall not be carcinogens, teratogens, mutagens, or neurotoxins.

5.8 Criteria for accepting and excluding inputs

- 5.8.1 The criteria to use for judging acceptance of inputs according to 5.6.3 and 5.7.3 are those in the IFOAM Organics International Basic Standards Basic Standards and Codex Alimentarius Guidelines.

5.9 Seeds, seedlings, and planting materials

- 5.9.1 Seeds, seedlings, and planting materials from organic production shall be used. If organic seeds, seedlings, and planting materials are not available, then conventional, chemically untreated seed, seedlings, and planting material may be used.

Only if these are not commercially available, chemically treated seeds, seedlings, and planting materials may be used, provided that they are not GMOs. The operator shall demonstrate the apparent need for such use. Where possible, the chemical used shall be washed off before planting. Also, where possible, such seeds shall be pre-germinated in pots and transplant.

All use of chemically treated seeds, seedlings, and planting materials shall be documented.

5.10 Crop production in the Screen or Green house

Crops could be produced in the screen house. However, the soil to be used must come from an organically certified land. Iron water tank should be avoided to prevent pollution due to rust. Vertical farming is also allowed provided the soil is from organically certified land.

5.11 Aquaponic system

Aquaponic system of farming shall be allowed, provided the water and nutrients sources are organically complaints. The system must also ensure no pollution and the materials used as anchor (e.g. coconut husk) for the plants should be from an organic system. The anchor from a natural farm may only be allowed if one from the organic system is not available.

5.12 Mushroom production

- 5.12.1 The culture media for mushroom production shall consists of organic ingredients e.g organic grain and straw. All substrate and growing media shall be prepared on the farm in compliance with organic standards or sourced from certified organic sources. In case of unavailability of certified organic raw material needed for making the substrate, the use of chemically untreated conventionally grown raw material up to a maximum limit of 25% for making compost may be allowed.

In cases where raw crop residue/ biomass is used without composting as a substrate, such as straw, hey or grains, they shall be sourced from organic operations certified as per crop production standards. Logs, sawdust or other wood-based material, when used as substrate, shall come from wood, trees or logs that have not been treated with prohibited substances. Other ingredients in the culture media and the inputs used in the mushroom production shall not be GMO and shall be in compliance with the standards for crop production.

5.12.2 Site Location and Buffers

Growers must maintain an adequate buffer between their operation and potential sources of contamination, such as from another farming operation, to minimize the risk of contamination from the drift of pesticides, herbicides, and other prohibited substances.

The required size of the buffer will vary based on the neighbouring activities, what substances are used, how they are applied, prevailing wind patterns, and any physical barriers between potential sources of risk and the mushroom production site.

5.12.3. Management of production site

The production site should be maintained in a way that prevents contact with prohibited substances. The plant material or wood used for the construction of the mushroom house, racks, substrate holding containers, boxes, trays shall be free from prohibited substance treatment. Organic and nonorganic production units must be in separate facilities separated by space and time and have separate ventilation systems, boxes, trays, tools, substrate holding racks including facilities for compost production.

5.12.4 Mushroom seed (Fungus spawn)

Organic spawn (seed) shall be used. In case of non-availability of organic spawn, the use of conventionally grown spawn may be used.

5.12.5 Conversion of conventional mushroom production to organic mushroom production

The conversion period is a minimum of three years for existing mushroom production systems. During the conversion period all management practices must be in compliance with organic standards. In case of new installations where the entire production system is being implemented in compliance with these standards, two or more production cycles must have been produced under organic conditions compliant with this standard prior to products being sold as organic.

In converting existing non-organic mushroom production systems for organic production, the operator shall implement a cleaning protocol as pertains to this standard using organic cleaning agents.

5.12.6 Pest control and sanitation

Preventive pest and disease management shall be the preferred approach.

5.13 Contamination

5.13.1 When there is an apparent and substantial risk of contamination from adjacent farms, the farmer shall employ measures, including barriers and buffer zones, to avoid or limit the contamination.

5.13.2 Equipment and tools (e.g., seed drills, fertilizer spreaders and spraying equipment) used in non-organic production shall be thoroughly cleaned before they are used in organic production.

5.13.3 Treatment of animals against ticks and other ecto-parasites shall be administered in such a way that the risk of contamination is minimized.

Wild Products

Collecting parts of plants growing naturally in natural areas (forests or savannas)

and agricultural areas is considered an organic production method provided that:

- a) The products come from a clearly defined collection area and subject to the measures established in these specifications;
- b) These areas have not undergone any treatment with products other than those listed in Annex 2 (Table 2) for a period of three years prior to collection;
- c) Harvesting does not pose a threat to the species, including those that are not directly exploited
- d) The habitat is preserved;
- e) The products come from an operator (collector) clearly identified and familiar with the area and mastering the collection operation.
- f) The harvest area is at an appropriate distance from conventional farms or other sources of contamination depending on the risk of contamination.
- g) In case of risk of contamination by aerial spraying, the picking area must be located more than 03 km.

6. Animal Husbandry

6.1 Animal management

6.1.1 Animals shall have access to fresh air, water, and feed and shall be handled according to the natural behavior of the animal. They shall have access to protection from direct sunlight, excessive noise, heat, rain, mud, and wind to reduce stress.

- a. Animals shall have access to protection from direct sunlight, excessive noise, heat, rain, mud and wind to reduce stress and ensure their well-being.
- b. Animals shall not be maltreated.
- c. Water obtained from gutters, gullies, sewage drains, industrial waste ponds or catchments, or any other water source that may be contaminated with animal or human sewage, industrial waste, municipal waste and effluents is prohibited for use in organic systems.

6.1.2 Animals shall be able to have sufficiently free movement, according to their natural behavior.

- a. Pigs shall be provided with material to root.
- b. Goats shall have the possibility of climbing.
- c. Poultry birds shall have the possibility of scratching, taking regular dust bath and run way. Animals shall have the living conditions and be managed in a way that prevents abnormal behaviour, injury and disease.

6.1.3 Housing conditions shall ensure enough lying and resting areas that correspond to the natural needs of the animals (caging is not allowed). Animals shall be provided with natural bedding where appropriate. Poultry, rabbits, pigs, and guinea pigs shall be kept in accordance with good animal husbandry practices.

6.1.4 Extensive mode of livestock management may be practiced on natural land, provided the grazing management does not degrade soil and water resources.

6.1.5 Tethering may be practiced, provided it does not affect the well-being of the animal. The animal shall have access to feed, shade, and water when needed, and shall be allowed regularly to move. The tethering shall not cause wounds or physically harm the animals.

6.1.6 Animals shall have the possibility of grazing.

Animals may be fed with carried fresh fodder where this is a more sustainable way to use land resources than grazing. Animal welfare shall not be compromised. Where fodder is carried, animals shall on a regular basis have access to an outdoor run.

6.1.7 Management system is Outside Intensive System

6.1.8 Breeds shall be sourced from ingenious breed from certified organic farms.

Herd animals should not be kept in isolation; the certification program may make specific exceptions. Nomadic farming methods could be authorized according to the traditional pastoralism in country with appropriate regulation.

6.2 Conversion, bought-in animals, and parallel production

6.2.1 Animals shall be raised organically from birth. When organic livestock is not available, conventional animals may be brought in, according to the following maximum age limits:

Species	Age
Day-old chicks for meat production	2 days
Hens for egg production	18-week-old
Other poultry	2-week-old
Rabbits	8-week-old
Piglets	3 months old
Calves	3 months
Goats and sheep	3 months

Older animals may be brought in for breeding purposes only.

6.2.2 The animal husbandry and individual animals brought into a organic herd shall undergo a conversion period according to the following:

Type of Species	Period of conversion
Poultry	45 days
Rabbits	45 days
Sheep	3 months
Goats	3 months
Pigs	3 months
Meat production cows	12 months
Dairy production, all species	3 months
Layer eggs	45 days

6.2.3 Products from the same type of animal and the same type of production which are both organic and non-organic (conventional or in-conversion) on the same farm shall not be sold as organic unless the production is done in a way that allows for the clear and continuous separation of the organic and non-organic production.

6.3 **Breeding**

6.3.1 Breeding systems shall be based on breeds that can reproduce successfully under natural conditions and without human involvement. It is important to choose breeds that are suited to local conditions. Crossbreeding objectives should have minimal impact on the natural behavior of the animals. Certification programs should ensure that crossing targets do not jeopardize biological diversity. Local breeds must be preserved and encouraged:

- reasonable level of production with a low level of inputs,
- adaptation to local conditions,
- longevity,
- healthy,
- quality of animal products,
- breeds that reproduce naturally.

6.3.2 Organic animal management only uses breeding methods with organic production techniques. This includes artificial insemination but excludes embryo transfers and cloning.

- Crossbreeding objectives must not resort to methods which make the system too dependent on high technology and large capital.

In aquaculture systems; artificial propagation techniques can be used with the use of natural hormones only.

6.3.3 Embryo o-transfer techniques and cloning shall not be used.

6.3.4 Only indigenous aquaculture species shall be used in organic aquaculture

Organic animal management does not use hormones to induce ovulation or birth, unless it is for medical reasons.

The use of hormones to induce ovulation or birth in animals is prohibited unless medically required

6.4 Mutilations

6.4.1 Mutilations shall not be done, except in the following cases and only on young animals:

- castration
- ringing
- dehorning (only of young animals)
- disbudding of horns
- artificial propagation (aquaculture)

Mutilations shall be done in such a way that the pains on the animal are minimized. Anaesthetics shall be used where appropriate.

6.5 Animal nutrition

Organic animal management includes the food rations necessary for the nutrition and diet of the species, for example access to fiber for ruminants.

Feed should be provided to animals in a manner that respects their natural feeding behavior.

The diet must be balanced, respect the nutritional needs of the animals and take into account a reasonable level of production and / or growth rate as well as the good health of the animals.

Each animal must have access to forage.

Organic animal management limits the use of non-organic food to the non-accessibility of organic food and the organic guarantee system applies a time limit or revises the periods of this use.

The operator can use non-organic feed to feed his animals only if he does not have access to organic feed, for a maximum period of six (06) months, after which his breeding will no longer be considered as organic.

6.5.1 Animals shall be fed 100% organic feedstuff. [If/when] the quantity or quality of organic feed is inadequate, the daily maximum percentage of non-organic feed is 40% (calculated in dry matter).

6.5.2 Ruminants shall get fresh fodder through grazing or feeding. When such fodder is not available, dried fodder may be used.

6.5.3 To ensure a connection between plant production and animal husbandry, at least 50% of feed shall come from the farm itself or be produced in cooperation with other organic farms.

6.5.4 The following products shall not be included in the feed:

- meat, bone, and other abattoir waste products to ruminants (all animals)
- chicken manure or other manure to ruminants
- amino-acid isolates to solvent extraction (e.g., hexane or the addition of other chemical agents)
- urea and other synthetic nitrogen compounds
- synthetic growth promoters or stimulants synthetic substances that stimulate production and suppress natural growth
- synthetic antibiotics
- preservatives (except when used as a processing aid)
- synthetic appetizers
- artificial colouring agents
- genetically engineered organisms or products thereof

The following products can be used:

- bacteria, fungi and enzymes
- by-products of the food industry (molasses)
- plant products

Exceptions can be made in the event of exceptional weather conditions.

6.5.5 Animals may be fed vitamins, trace elements, and supplements from natural sources. Synthetic vitamins, minerals, and supplements may be used when natural sources are lacking in quantity or quality (not more than 40%).

6.5.6 Young stock from mammals shall be raised on maternal milk or organic whole milk from their own species. If organic whole milk is not available, conventional whole milk shall be used. Milk replacements are allowed only in emergencies and shall not contain ingredients mentioned in 6.5.4. Fish fry shall be raised with zooplankton and artemia.

6.6 Disease management

6.6.1 Disease prevention in organic livestock production shall be based on the following:

- the choice of appropriate breeds or strains of animals
- the application of animal-husbandry practices appropriate to each species, encouraging strong resistance to disease and the prevention of infections
- the use of good quality organic feed, regular exercise, and access to pasture or runs in the open air
- ensuring an appropriate density of livestock
- Vaccinations should only be applied when a disease is known to exist in the area and there is no possibility of preventing it by management techniques. This should always be done with the approval of the certification program. Legal vaccinations are however authorized. Genetically obtained viral vaccines should not be used in this case.
- The use of traditional ecological knowledge such as "Modal" should be encouraged

6.6.2 The organic management of animals does not use any prophylactic used in allopathic veterinary drugs.

6.6.3 The prophylactic use of allopathic medicines is not permitted.

6.6.2 If an animal becomes sick or injured despite preventative measures, it shall be treated promptly and adequately. As a first option, phyto-therapeutic and other alternative treatments shall be used if they are proven to be effective in curing sickness or healing an injury.

An operator may use chemical allopathic veterinary drugs or antibiotics only if

- preventive and alternative practices are unlikely to be effective in curing sickness or healing an injury
- [they are used under the supervision of a veterinarian]

Withholding periods shall not be less than double the period required by legislation

Operators shall not withhold medication of sick or injured animals, even if the use of such medication will cause the animal to lose its organic status.

Standards may allow specific exemptions when good management practices are insufficient to ensure the health and welfare of the animal and / or operator or when this is specifically required for the quality of the meat. Physical alterations applied under exceptions employ measures to minimize suffering.

6.6.3 Hormonal treatment may be used only for therapeutic reasons and under certified organic veterinary supervision.

6.6.4 Growth stimulants or substances used for the purpose of stimulating growth or production shall not be used.

6.7 Transport and Slaughter

6.7.1 The organic integrity of the animals during movement, handling and slaughter shall be maintained. Animals shall be handled in a caring manner during transport and slaughter. During the

movement, handling and slaughter of animals, any method (electric shock, blows, sting) that could cause stress in the animal is prohibited. The animals shall be provided with conditions that minimize the adverse effects of hunger and thirst, extreme temperatures or relative humidity stress [mixing different groups and sexes].

Animal products shall be transported under hygienic conditions to prevent contaminations from the food contact surface and the environment.

7. Bee-keeping

7.1

General principles

- a) Beekeeping is an activity that contributes to improving the environment and agricultural and forestry production through the productive action of bees.
- b) The treatment and management of beehives must respect the principles of organic farming.
- c) Foraging areas should be large enough to provide bees with adequate and sufficient food and access to water.
- d) The sources of natural nectar, honey dew and pollen consist mainly of plants from organic farming or natural vegetation.
- e) The health of bees is protected through preventive measures such as the choice of appropriate breeds, a favorable environment, a balanced diet and appropriate husbandry practices.
- f) The beehives will consist mainly of natural materials, presenting no risk of contamination to the environment and bee products.
- g) When bees are placed in natural areas, consideration should be given to native insect populations.
- h) Organic bees wax should be used for the first baiting, where organic wax is not available, conventional bee wax. Conventional bee wax can be used as long as it is not treated with synthetic products.
- i) Producer organizations involved in the Participatory Guarantee System must determine the areas in which beekeeping in accordance with the rules of organic production is not possible.

Origin of bees

- a) When choosing breeds, account must be taken of the adaptability of bees to local conditions, their vitality and their resistance to disease.
- b) Introduced bees must come from organic production units, if available, otherwise from traditional beekeeping.

7.2 Apiary Management

7.2.1: Location of Apiary

- Hives shall be situated in organically managed fields and/or wild natural areas.
- Hives may be placed 3 km radii in an area that ensures non-use of agro-chemicals, access to sources of nectar, and pollen that meet organic crop production requirements.
- Apiaries must provide adequate and sufficient bee forage plants such as Eucalyptus trees, citrus spp., sunflower and other flowering plants.
- Bees should have access to clean, hygienic water. Also, the location of the aviary should be at a site where the presence of the bees is unlikely to cause a public nuisance.

- Forage plants must be free from potential pollution from vehicle exhausts, smoke from incinerators or chemical-laden plants. The health of bee colonies shall be maintained by good agricultural practices, with emphasis on disease prevention through breed selection and hive management.
- Foraging radius of 3 km shall be maintained from the apiary to sources of contaminants.
- Ensure non-use of synthetic materials, for example, avoid the use of agrochemical products (dust, sprays, etc.) in and outside the hives and apiaries.

In determining the location of the apiary, the following factors should be considered

- the use of indigenous breeds that adapt well to local conditions
- renewal of queen bees, if necessary. Queen bees' wings shall not be clipped.
- regular cleaning of hives and bee equipment with clean water
- regular renewal of beeswax
- availability of hives of sufficient pollen and honey
- systematic inspection of hives to detect any anomalies
- systematic control of male broods in the hive
- infested hives should be cleaned with lemon juice or natural bio-pesticides. If pest infestation is high the hives can be destroyed, if need be.
- avoid all forms of burning close to the apiary.

7.2.2 **Hive materials**

Hives shall consist of materials presenting no risk of toxic effects to the bees or contamination of the environment or the bee products. Natural materials should be used in building bee hives; and wooden, untreated, hives are more preferable.

7.3 **Conversion of conventional beekeeping to organic beekeeping**

- Bee colonies can be converted to organic bee colonies within a period of three years. During conversion, the bee colonies shall be isolated and the foundation comb shall be made from organic wax.
- Bee products can be sold as organically produced when the requirements of these standards have been complied for at least three years. The non-contaminated conventional wax may be used for starter combs/ foundation combs. However, beeswax for new foundations shall be sourced from the organic production unit.

Conversion period

- a) Bee colonies can be converted to organic production.
- b) If a treatment is administered using synthetic allopathic chemicals, the treated colonies are placed, during the treatment period, in isolation apiaries and all the wax is replaced by wax from the organic beekeeping. Then the conversion period, lasting a honey harvest cycle, applies to these colonies.
- c) If the wax has been contaminated with pesticides, it should be replaced with organic wax at the start of the conversion period.
- d) Swarms from other areas can be used without a conversion period, if there is no risk of contamination identified in these areas of origin.

7.4 **Pest and diseases Management**

a) The health of bee colonies must be maintained through good management practices, with emphasis on disease prevention through breed selection and hive management. This includes:

- The use of breeds that adapt well to local conditions;
- The renewal of queens, when necessary;
- Regular cleaning and disinfection of equipment;
- Regular renewal of beeswax;
- Sufficient availability of pollen and honey in the hives;
- The location of the hives in such a way that the temperature is favorable for the bees;
- Checking the hives to detect any anomalies;
- Disinfection, isolation or destruction of beehives and contaminated materials.

b) Physical treatments intended for the disinfection of apiaries, such as steam or direct flame, are authorized.

c) The destruction of male brood is only authorized to limit infestation by *Varroa destructor*. Formic, lactic, acetic and oxalic acids as well as menthol, thymol, eucalyptol or camphor can be used in the event of infestation by *Varroa destructor*.

d) For direct pest and disease control, the following may be used:

- lactic, oxalic, acetic acid
- sulphur
- natural essential (etheric) oils (e.g. menthol, eucalyptol, camphor, thyme or lemongrass)
- Non-GMO *Bacillus thuringiensis*
- steam and direct flame
- glycerol
- phytotherapeutic treatment
- ash from untreated wood.

If these processes and substances fail, synthetic veterinary drugs, antibiotics or synthetic pesticides can be used by exemption from CRE. But if they are used, the colony will undergo a conversion.

e) Only natural products such as propolis, wax and vegetable oils can be used in beehives.

f) Use of used motor oil for pest control is prohibited.

g) If, despite all preventive measures, the colonies become diseased or infested, they are treated immediately and if necessary, can be placed in isolation apiaries.

7.5 **Handling of Bees and harvesting of bee products**

At the harvest, colonies shall be left with reserves of honey and pollen sufficient for the survival of the colony.

- Persons engaged in the extraction of the honey shall be free from any contagious disease, shall wear clean clothes and clean their hands with a disinfectant soap.
- Synthetic repellents should be avoided during the harvesting of bee products (honey extraction).
- Supplementary feeding of colonies can be undertaken to overcome temporary feed shortages due to climatic or other exceptional circumstances. In such cases, organically produced honey or sugar-cane syrup shall be used, if available.
- Smoking shall be kept to a minimum when working in the apiary. Smoking materials shall be of natural origin. The use of chemical repellents is prohibited during honey extraction operations.
- The use of combs containing brood is prohibited for extracting honey.

Storage and packaging of bee products

- a) The existence of storage places guaranteeing the biological integrity of materials and finished products is a requirement.
- b) As well as the marking of the processing and packaging areas and rooms is an obligation.
- c) Extracted honey shall be stored in containers such as glass jars and stainless steel. Plastics and other plastic products or derivatives shall not be used as storage containers.

Keeping of documents

Keeping detailed records is important regarding the location and management of all hives.

8. Aquaculture

8.0 General

8.1 Definition:

Raising of aquatic organisms in a controlled environment using production system that involves diversities of communities and associations within the aquatic environment for the optimum production of aquatic resources. In other words, it is the harmonization of all resources within the aquatic ecosystem, including bottom and surface dwelling plants and animals; target aquaculture organism and as well as people.

Organic aquaculture principle is the production of aquatic food organisms using specific management methods that enhance and maintains the health of the production environment and the production of healthy aquatic plants and animals for the consumers. The major Organic aquaculture principle include:

- the complete use of the fish pond, both in depth, from the surface to the benthic zone over its entire surface area;
- complete use of all types of natural food present in the pond, including phyto- and zoo-plankton, benthos, aufwuchs (collection of small animals and plants that adhere to open surfaces in aquatic environments), detritus, aquatic plants;

- Taking advantage of mutual benefits while avoiding competition for food, the rearing of different fish species with complementary feeding habits within the same fattening pond.

Other equally important principles are

- protection of the environment by minimizing benthic degradation, erosion and loss of water quality, optimizing biological productivity.
- maintaining long-term biological stability through optimization of conditions necessary for biological diversity.
- recycling materials and resources to a possible maximum level within the enterprise.

8.2. Organic aquaculture organisms and facilities

8.2.1 Organic aquaculture production organisms shall be native to the environment.

- Shrimps
- Mollusks
- Finfish
- Aquatic plants

8.2.2 Organic aquaculture production system/facilities

Organic aquaculture facilities should have plants within the facility. Construction materials and a housing containing leachable toxic chemical agents should not be used.

Production system/facilities that could be used include but not limited to

- Cages
- Earthen ponds
- Concrete tanks
- Recirculation systems are permitted if the system supports the health, growth, and well-being of the species.

8.2.3. Water quality and environment

- Culture systems should be sited in locations where the water is not subject to contamination by products or substances not authorized for organic production, or pollutants that would compromise the organic nature of the products.
- The environmental effects of aquaculture operation and the monitored, measures should be put in place to minimize negative impacts on the surrounding aquatic and terrestrial environments.
- Open water units shall be sited and managed in such a way that sediment build-up underneath the unit does not exceed the assimilation capacity of the local environment.
- Nutrient cycling through practices such as Integrated Multi-Trophic Aquaculture is encouraged.

- Effluent monitoring shall be carried out, at least annually, and farms shall be equipped with waste management facilities such as natural filter beds, settlement ponds, or biological filters, seaweeds, aquatic plants and/or animals that contribute to improving the quality of the effluent.
- Mechanical filters are permitted.
- Feed waste, manure and mortalities that have been collected shall be recycled.
- Retired equipment that was used in rearing aquaculture animals shall be re-used or recycled where possible.

8.3 Practices

8.3.1 Culture system shall not be intensive.

8.3.2 Polyculture should be practised; the ratio of carnivore/omnivore to herbivore shall not exceed
 Polyculture species combinations shall be based on feeding levels or habits

8.3.3 Monoculture is not allowed.

8.3.4 Stocking density should be light and depend on the age, size and the natural behavior of the fish, production system, species and water quality. Stocking density below is recommended:

20kg	in freshwater ponds and pens and
75kg	in freshwater re-circulatory system
4kg	saltwater ponds
15kg	saltwater pens

8.4 Conversion period/brought in animals and parallel production

The following transition periods for aquaculture production units shall apply for the following types of aquaculture:

- | | |
|--|------------|
| ▪ Facilities that cannot be drained and cleaned including their existing aquatic organisms | 36 months |
| ▪ Facilities that can be drained or have been fallowed including their existing aquatic organisms. | 12 months, |
| ▪ Facilities that have been drained, cleaned, disinfected and rinsed for existing aquatic animals; no conversion period for new stock. | 12 months |
| ▪ Open water facilities, a transition period of at least or one production cycle. | 12 months |

8.4.1 Animals shall be raised organically from a hatchling. Where organic seeds are not available, seeds from conventional aquatic animals may be brought in, according to the following maximum age limits:

- 8 weeks for fingerlings
- 12 Weeks for shrimps
- 12 Weeks for mollusks

8.4.2 Operators shall not utilize artificially polyploid organisms or artificially produced monosex stock.

8.4.2 Products from the same type of animal and the same type of production which are both organic and non-organic (conventional or in-conversion) on the same farm shall not be sold as organic. There should be a clear and continuous separation between organic and non-organic production.

Organic facilities shall normally be upstream and there shall be no interference of water used in conventional farm/pond with organic farm/pond.

Aquatic Plants

Organic aquatic plants are grown and harvested sustainably without adverse impacts on natural areas.

4.6.3 Aquatic plant production shall comply with the relevant requirements of chapters 4 and 5.

Harvest of aquatic plants shall not disrupt the ecosystem or degrade the collection area or the surrounding aquatic and terrestrial environment

8.5 Breeding and seed collection

Breeding systems shall be based on breeds that can reproduce successfully under natural conditions.

8.5.1 Breeding can be induced using natural hormones and substances

Breeding should not involve the sacrificing of any of the parents or fish from unsustainable fisheries.

8.5.2. Species that cannot spawn naturally in captivity may be induced using exogenous releasing hormones **only** if other methods are not available. Such brood stock shall lose organic status when slaughtered.

8.5.3 Brood stock obtained by treatment with steroids or other hormones shall lose organic status but may continue to be used within the organic aquaculture system.

8.5.4 Techniques using genetic engineering are prohibited.

8.5.5 Sex reversal or its equivalent should not be practised.

8.5.6 The collection of wild seed should

- be done according to local regulations;
- not compromise the ecological integrity of the aquatic ecosystem;
- ensure sustainable wild populations; and
- minimize over exploitation/setting of wild seed, when possible.

- The use of epinephrine to expedite exploitation/setting is prohibited.
- The use of Tires, PVC should not be used as setting substrate.
- Culch disinfection is permitted, provided that the substances used comply with the standard specified in this document.

8.6 Feed and feeding

8.6.1 Aquaculture animals shall have access to natural food generated from the environment.

8.6.2. **Manures from organic farm**, liming materials used shall be consistent with the standard stated in this code

8.6.3 Aquatic animals should be fed 100% organic feedstuff. [If/when] the quantity or quality of organic feed is inadequate, the daily maximum percentage of non-organic feed is 40% (calculated in dry matter).

8.6.3 Integration of other agricultural produce is encouraged, a substantial quantity of feed shall come from the farm where applicable.

8.6.4 Feeding and feed rations supplied to aquaculture animals shall be compatible with diets occurring in the natural environment and be designed according to the specific nutritional needs of the species.

8.6.5 Fish meal and fish oil derived from aquatic animals and other feed sources shall be organic, when commercially available.

8.6.6 When organic fish meal or fish oil is not commercially available, it shall be preferentially sourced from trimming of fish already caught for human consumption in sustainable fisheries. Non-organic aquatic animal protein and oil sources must be from independently verified sustainable sources.

8.6.7 None synthetic vitamins and minerals should be used. Synthetic vitamins and minerals are allowed ONLY if the none synthetics are not available.

Use of water containing human excrement is prohibited

8.6.8 The following should not be included in the feed:

- Growth stimulants or substances used for the purpose of stimulating growth or production
- Urea, antibiotics and hormones used to promote growth and synthetic growth agents
- Silage preservation products except for products listed in par. 10.2
- Synthetic appetite-enhancers or synthetic flavor-enhancers
- Synthetic coloring agents.

8.7 Disease management

8.7.1 Disease prevention in organic aquaculture production shall be based on the following:

- Aquaculture animals shall have ready access to an appropriate diet in sufficient quantities and with a composition that maintains full health and vigour.
- Aquaculture animals are in close contact with their environment.
- the application of appropriate cultural practices such as maintenance of good water quality, prevention of wide species and environmental management
- Diseases shall be prevented or rapidly diagnosed and treated.
- Aquaculture animals shall have sufficient space, proper facilities and, where appropriate, the company of the animal's own kind.
- Conditions that produce unacceptable levels of stress caused by anxiety, fear, distress, boredom, sickness, pain, hunger and so on shall be minimized.
- the choice of appropriate breeds or strains of stock
- the use of good quality organic feed, regular exercise, and access to pasture or runs in the open air
- ensuring an appropriate density of stock
- operators shall routinely monitor water quality, stocking densities, health, and behaviour of each cohort (school) and manage the operation to maintain water quality, health, and natural behaviour.

8.7.2 Aquaculture facilities shall be designed, operated and managed in a manner that seeks to maximize the welfare and minimize the stress on aquaculture animals, and minimize the spread of disease within the facility, and to all adjoining ecosystems and native fish species.

8.7.3 If an aquatic animal becomes sick or injured despite preventive measures, it shall be treated promptly and adequately.

8.7.4 Injured animals should be separated for treatment where possible.

- Phytotherapeutic and other alternative treatments shall be applied to them if they are proven to be effective in curing sickness or healing an injury.

8.7.5 Chemical allopathic veterinary drugs or antibiotics could be used only if preventive and alternative practices are unlikely to be effective in curing sickness or healing an injury. When veterinary drugs are used, the withdrawal period shall be equivalent to double the label or veterinary prescription requirement, or 14 days, whichever is longer, shall be observed before the products from treated aquaculture animals can be considered organic.

However, broodstock treated with antibiotics may continue to be used within the organic aquaculture system, but shall never be organic for slaughter purposes.

Note: Use of chemical allopathic veterinary drugs and antibiotics is prohibited for invertebrates

8.7.6 Medication shall not withhold from sick or injured animals, even if the use of such medication will cause the animal to lose its organic status. All appropriate medications shall be used to restore aquaculture animals to health when methods acceptable to organic production fail. Sick and medicated aquaculture animals shall be quarantined from healthy aquaculture animals.

8.7.7 Hormonal treatment may be used only for therapeutic reasons and under certified organic veterinary supervision.

8.7.8 If necessary to prevent disease, an appropriate fallowing period shall be applied after each production cycle. During fallowing, the cage or other structure used for aquaculture animal production is emptied, cleaned and left empty before being used again.

8.7.9 Unconsumed/unused fish feed, faeces and dead animals shall be managed to support the health and welfare of the animal(s).

8.7.10 Hygienic routines shall be carried out as well as routine examinations to detect nascent diseases and production disturbances. Preventive measures should be taken.

8.7.11 Products from sick aquaculture animals or those undergoing treatment with restricted substances shall not be organic or fed to organic aquaculture animals or livestock.

8.7.12. In addition to the treatments allowed for combating illness or injury, anaesthetics may be administered to minimize pain, stress and suffering not more than twice a year when handling individual fish (e.g. vaccination, weight counts, parasite counting, fin clipping, tagging, or surgery).

8.8. Predator, pest and weed control

8.8.1 All predator and pest control practices shall target specific animals, with minimal impact on aquatic animal and wildlife habitat.

8.8.2 Predator exclusion devices (e.g. predator netting on clam beaches and vertical fencing) shall be secured at all times to ensure they do not present undue risk of entanglement or injury to wildlife.

8.8.3 Materials and methods permitted in pest control:

- Physical barriers (e.g. clam netting, vertical predator fences, traps, natural bait as an attractant to traps)
- Manual removal
- High-pressure water washing
- Dehydration through exposure to air and sun
- Hot water treatment
- Substances permitted by the organic standard in West Africa
- Dips with substances permitted in par. 10.3
- Release of natural predators
- Creation of environments fostering natural predators.

Disturbance of endangered aquatic organisms or critical animal habitat is prohibited.

Unnecessary destruction of aquatic organisms or aquatic habitat is prohibited.

Killing, capturing or injuring migratory birds and disturbing their nests is prohibited.

The following materials and methods are prohibited in pest control:

- Fumigants
- Synthetic pesticides, petroleum distillates and solvents

8.9 Harvesting, Transporting Live Aquaculture Animals and Slaughtering

8.9.1 Techniques used to capture, handle and harvest aquaculture animals shall be selected such that they cause minimal physiological stress or injury, and that natural habitats are preserved. In order to keep stress levels to a minimum, only essential handling shall take place.

8.9.2 Transportation facilities (vehicles and boats) used should be appropriate to the types of live aquaculture animals being transported. Water quality and population densities should be appropriate especially for those to be delivered live in the market.

8.9.3 Tranquillizing chemicals, paralyzing toxins and carbon dioxide should not be used.

8.9.4 Slaughtering shall minimize pre-slaughter and slaughter stress. Slaughtering should not be by suffocation.

8.9.5 Slaughter techniques shall render aquaculture vertebrate animals immediately unconscious and insensible to pain. Choice of slaughtering methods should take into consideration differences in harvesting sizes, species, and production sites.

8.9.6 Aquaculture vertebrate animals shall not be slaughtered in ponds, cages or tanks where other aquaculture animals are living.

8.9.7 Harvesting, transporting, slaughtering and subsequent handling of organic and non-organic aquaculture animals shall be clearly separated in time or space in order to completely avoid commingling.

8.10. Prohibited Substances, Techniques or Ingredients in Organic Production and Handling

The following items and methods are prohibited in organic aquaculture:

- i. All materials and products (except vaccines) produced from genetic engineering because they are not compatible with the general principles of organic production and therefore are not accepted under this standard.
- ii. Synthetic pesticides (e.g. defoliants and desiccants, fungicides, insecticides and rodenticides), wood preservatives (e.g. arsenate) or other pesticides, except as specified in this standard
- iii. Fertilizer or composted plant and animal material that contains a substance prohibited
- iv. Sewage sludge, in any form
- v. Synthetic growth regulators
- vi. Synthetic veterinary drugs, including antibiotics and parasiticides
- vii. Synthetic processing substances, aids and ingredients, and food additives and processing aids including sulphates, nitrates and nitrites.
- viii. Cloned farm animals and their descendants.
- ix. Intentionally manufactured nano-technology products or nano-processes except naturally occurring nanolised particles or those produced incidentally through normal processes such as grinding flour.
- x. Fish meal not produced from the sustainable fishing enterprise.
- xi. Amino-acid isolates to solvent extraction (e.g., hexane or the addition of other chemical agents)
- xii. Urea and other synthetic nitrogen compounds
- xiii. Synthetic growth promoters or stimulants
- xiv. Preservatives (except when used as a processing aid)
- xv. Synthetic appetizers
- xvi. Artificial colouring agents
- xvii. Equipment, packaging materials and storage containers, or bins that contain a synthetic fungicide, preservative or fumigant

- xviii. Cloned farm animals and their descendants. A producer shall know the lineage of any non-organic animal brought under organic management
- xix. Intentionally manufactured nano-technology products, or nano-processes involving intentional manipulation of matter at the nanoscale to achieve new properties or functions that are different than properties and functions of the materials at the macro scale, except naturally occurring nano-sized particles, or those produced incidentally through normal processes such as grinding flour, or nano-sized particles used in a way that guarantees no transference to product.

9. Wild collection of honey and other wild products.

9.1 Wild harvested products are organic if they are derived from a stable and sustainable growing environment. The harvest shall not be at a rate that exceeds the sustainable yield of the ecosystem, and it shall not threaten the existence of plant, fungal, or animal species, including those not directly exploited.

9.2 Operators shall harvest products only from a clearly defined area where chemical pesticides and other substances not allowed by this standard have not been applied for at least three years before harvest. The harvest area shall be at an appropriate distance from conventional farms and sources of contamination.

10. Handling, storage, and processing

10.1 Separation

10.1.1 The integrity of organic products shall be maintained throughout the phases of handling, storage, processing, and transport.

10.1.2 All organic products shall be clearly identified as such. Throughout the entire process of storage and transportation, the products shall be stored and transported in a way that prevents contact or mixing with non-organic products.

10.1.3 The operator shall take all measures necessary to prevent organic products from being contaminated.

10.1.4 Non-organically and organically grown products may only be stored together if they are packaged and labeled ready for sale. Storage facilities and containers for unpackaged produce must be kept separate and be specially labeled

10.2 Ingredients

10.2.1 All ingredients used in organically processed products shall be organically produced when available in sufficient quality and quantity. *Note: The labeling rules apply.*

10.2.2 When possible, food additives and processing aids produced with organic raw materials shall be used.

10.2.3 Water and salt may be used as ingredients in the production of organic products and are not included in the percentage calculations of organic ingredients.

10.3 Techniques

10.3.1 Techniques used to process and preserve organic products shall be biological, physical, or mechanical, ionizing radiation shall not be used.

10.3.2 Extraction shall take place only with water, ethanol, plant and animal oils, vinegar, carbon dioxide, and nitrogen.

10.3.3 Filtration equipment shall not contain asbestos or utilize techniques or substances that may negatively affect the product.

10.3.4 Controlled atmosphere may be used for storage.

10.4 Additives and processing aids

10.4.1 Processing aids are substances or materials (excluding utensils and technical equipment) that are not normally in themselves regarded as foodstuffs and that are purposely brought into contact with foodstuffs at one stage or another of their processing. Since these processing aids are removed or largely disappear during the process, only traces, if any, become components of the foodstuff concerned.

10.4.2 All usage of additives and processing aids is to be avoided as far as possible. Only substances obtained through physical separation processes, cooking processes and/or fermentation are permitted as additives.

10.4.3 Preparations of enzymes and microorganisms used in food processing may be used with the exception of genetically engineered microorganisms and their products.

10.4.4 Synthetic minerals (including trace substances), vitamins, amino acids, and other nitrogen compounds may be used for food fortification only where legally required or in cases in which dietary or nutritional deficiency can be demonstrated.

10.4.5 Synthetic and nature-identical colourings, flavourings, and taste enhancing substances shall not be used. Only natural substances may be used.

10.4.6 Food additives and processing aids for organic farming can be found in appendix 4.

10.4.7 Criteria for approval or disapproval of additives and processing aids are those defined in the IFOAM Basic Standards, **Harmonized African organic standard** and the Codex Alimentarius Guidelines.

10.5 Packaging materials

10.5.1 Packaging material shall not contaminate the organic product.

10.5.2 Packaging materials and storage containers or bins that contain synthetic fungicides, preservatives, or fumigants shall not be used.

10.5.3 Organic produce shall not be packaged in bags or containers that have been used for chemical fertilizers or pesticides or other substances that may compromise the organic integrity of the organic product.

10.5.4 Environmentally adapted packaging shall be preferred. PVC and other chlorine-based plastics shall be avoided to the extent possible. Operators should adopt practices to minimize packaging materials.

10.5.5 The packaging materials must be adequately sterilized following organic standards

10.5.6 When you are transporting organic or in-conversion crops to other units, including wholesalers and retailers, you must make sure they are in suitable packaging or containers. They must be closed to prevent substitution and labelled or accompanied by a document that shows:

Your company name and address, and owner if different

The name and organic status of the product

The certification code, and

Traceability code.

10.6 Hygiene and Pest management

10.6.1 Pest-control measures shall be established and maintained to ensure that areas used for the storing, handling, and processing of organic products are effectively protected against pests.

10.6.2 You must control pests and disease by carefully designing and managing your whole farm system to achieve health, diversity and vitality in your soils and crops. You will then encourage natural growth and a balanced farm ecosystem.

10.6.3 Pest and pathogen control shall be achieved mainly by means of scrupulous cleaning and hygiene.

10.6.4 To manage pests, the following methods may be used:

- preventative methods such as disruption, elimination of habitat, and access to facilities
- mechanical, physical, and biological methods
- substances approved in this standard including the use of natural phytosanitary substances

10.6.5 If the methods listed above are unsuccessful, conventional pest and disease control may be used. The use shall not contaminate the organic product. Organic products shall be moved out of the treated area. The operator shall take precautions to prevent contamination and include measures to decontaminate the equipment or facilities.

10.6.6 In cases in which the fumigation of premises, plant, or equipment is required, the treatment shall be carried out under the supervision of a suitably qualified person or organization. Chemical substances shall be properly labelled and stored.

10.6.7 Records of date, substance, and area treated shall be kept of all pest-control and fumigation measures taken.

10.6.8 These are the substances and methods for pest and disease control that shall not be used:

- fumigation with ethylene oxide, methyl bromide, and aluminium phosphide ionizing radiation (irradiation)

11. Labelling

11.1 Products produced in accordance with these standards may be labelled “PGS Certified Organic” based on the percentage organic materials contained excluding water and salt. Only prescribed label given below should be used for raw or processed agricultural product certified with this standard. Any GMO produce or product containing GMO ingredients must not be labeled organic.

11.2 A raw or processed product sold, labeled, or represented as “100% organic” shall contain, by weight, excluding water and salt, 100% organic ingredients.

11.3 A raw or processed agricultural product sold, labeled, or represented as “organic” shall contain, by weight, excluding water and salt, not less than 95% organic ingredients. The remaining ingredients may include non-organic ingredients or substances fulfilling these standards.

11.4 A multi-ingredient product sold, labelled or represented as “With organic” shall contain, by weight, excluding water and salt, at least 70% organic ingredients. The remaining ingredients may include non-organic ingredients fulfilling these standards.

11.5 Any product / produce undergoing certification with this Standard for the first time and has fulfilled 10.2 to 10.4 may be labeled “PGS Certified In - Conversion”.

11.6 For a product in which less than 70% of the ingredients are organic, “organic” may be stated in the ingredient panel or in conjunction with the organic ingredient.

All ingredients of a multi-ingredient product shall be listed on the product label in order of their weight percentage. It shall be apparent which ingredients are of organic origin and which are not. All additives shall be listed with their full and scientific name. Where herbs and/or spices constitute less than 2% of the total weight of the product, they may be listed as “spices” or “herbs” without stating the percentage.

11.7 The name and contacts of the responsible producer shall appear on the packaging material on which this label is appearing. The label must be written in a language that is readable and understandable by the consumer.

11.8 A statement that the product is “produced according to Organic Agriculture Standard in West Africa” may be made on the labels (as mentioned in 10.5.5)

Appendix 1. IFOAM Principles of Organic Agriculture

Preamble

These Principles are the roots from which organic agriculture grows and develops. They express the contribution that organic agriculture can make to the world and a vision to improve all agriculture in a global context.

Agriculture is one of humankind's most basic activities because it is all that people need to nourish themselves daily. History, culture and community values are embedded in agriculture. The Principles apply to agriculture in the broadest sense, including the way people tend soils, water, plants and animals in order to produce, prepare and distribute food and other goods. They concern the way in which people interact with living landscapes, relate **with one** another and shape the legacy of future generations.

The Principles of Organic Agriculture serve to inspire the organic movement in its full diversity. They guide IFOAMs development of positions, programs and standards. In addition, they are presented with a vision of their worldwide adoption.

Organic agriculture is based on:

The Principle of Health
The Principle of Ecology
The Principle of Fairness
The Principle of Care

Each principle is articulated through a statement followed by an explanation. The principles are to be used as a whole. They are composed as ethical principles to inspire action.

The Principle of Health

Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

This principle points out that the health of individuals and communities cannot be separated from the health of ecosystems - healthy soils produce healthy crops that foster the health of animals and people.

Health is the wholeness and integrity of living systems. It is not simply the absence of illness, but the maintenance of physical, mental, social and ecological well-being. Immunity, resilience and regeneration are key characteristics of health.

The role of organic agriculture, whether in farming, processing, distribution, or consumption, is to sustain and enhance the health of ecosystems and organisms from the smallest in the soil to human beings. In particular, organic agriculture is intended to produce high quality, nutritious food that contributes to preventive health care and well-being. In view of this, it should avoid the use of fertilizers, pesticides, animal drugs and food additives that may have adverse health effects.

The Principle of Ecology

Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

This principle roots organic agriculture within living ecological systems. It states that production is to be based on ecological processes, and recycling. Nourishment and well-being are achieved through the ecology of the specific production environment. For example, in the case of crops, this is the living soil; for animals, it is the farm ecosystem; for fish and marine organisms, it is the aquatic environment.

Organic farming, pastoral and wild harvest systems should fit the cycles and ecological balances in nature. These cycles are universal but their operation is site-specific. Organic management must be adapted to local conditions, ecology, culture and scale. Inputs should be reduced by reuse, recycling and efficient management of materials and energy in order to maintain and improve environmental quality and conserve resources.

Organic agriculture should attain ecological balance through the design of farming systems, establishment of habitats and maintenance of genetic and agricultural diversity. Those who produce, process, trade, or consume organic products should protect and benefit the common environment including landscapes, climate, habitats, biodiversity, air and water.

The Principle of Fairness

Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities

Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relationship with other living beings.

This principle emphasizes that those involved in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties – farmers, workers, processors, distributors, traders and consumers. Organic agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products.

This principle insists that animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behaviour and well-being.

Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.

The Principle of Care

Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Organic agriculture is a living and dynamic system that responds to internal and external demands and conditions. Practitioners of organic agriculture can enhance efficiency and increase productivity, but this should not be at the risk of jeopardizing health and well-being of others. Consequently, new technologies need to be assessed and existing methods reviewed. Given the incomplete understanding of ecosystems and agriculture, care must be taken.

This principle states that precaution and responsibility are the key concerns in management, development and technology choices in organic agriculture. Science is necessary to ensure that organic agriculture is healthy, safe and ecologically sound.

However, scientific knowledge alone is not sufficient. Practical experience, accumulated wisdom and traditional and indigenous knowledge offer valid solutions, tested by time. Organic agriculture should prevent significant risks by adopting appropriate technologies and rejecting unpredictable ones, such as genetic engineering. Decisions should reflect the values and needs of all who might be affected, through transparent and participatory processes.

Appendix 2. List of substances which may be used in organic plant production

Indicative

Note to the reader: These lists are now basically the full lists from the IFOAM **Organic International** Basic Standards and the Codex Alimentarius Guidelines. By reference in the text, these inputs will be accepted in use. However, many of them are currently not in country. Is it a better solution to list only products that are currently in use, taking into consideration that the other substances can be used when the need arises, through the reference to IFOAM and the Codex in the standard? (text to be taken out of final version of standard)

Fertilizers and soil conditioners

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
I. Plant and Animal Origin	
Farmyard manure, slurry, liquid manure and urine	Manure: Composting compulsory to avoid the proliferation of weeds. Liquid manure: Avoid its use when leafy vegetables and fruits are ripe. Urine: must be well cured
Guano	Regular watering after spreading to avoid plant burns
Products consisting of the mixture of animal excrements and plant matter (litter): litters of small ruminants, poultry.	Waste from conventional farm are prohibited except it is composted.
Compost from solid animal faeces including poultry droppings and composted manure	
Dried manure and dehydrated poultry manure	
Improved parking	Surface used as a resting place for animals (cattle, sheep, goats etc.)
Liquid animal feces	Use after controlled fermentation and / or appropriate dilution. Waste from conventional farm is prohibited
Source separated human excrement from separated sources which are monitored for contamination	Not to be directly applied on edible parts

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
Vermicastings	
Blood meal, meat meal, bone, bone meal	
Hoof and horn meal, feather meal, fish and fish products, wool, fur, hair, dairy products	Maximum content of chromium (VI) dry matter, in mg / kg: 0
Biodegradable processing by-products, plant or animal origin (e.g., by-products of food, feed, oilseed, brewery, distillery, or textile processing), cakes, mill by-products, etc feed manufacturing, biofuels, neem cakes, palm kernels, spoiled organic cotton seeds, peanut shells, corn bran)	GMO by-products are prohibited
Crop and vegetable residues, mulch, green manure, cover crops (leguminous crops such as lablab, mucuna, etc), Straw	GMO by-products are prohibited
Wood, bark, sawdust, wood shavings, wood ash, wood charcoal, wood chips, composted bark, ash from extracts of plant preparations for treatment	Based on wood not treated with synthetic chemicals after felling
Seaweed and seaweed products	
Peat (prohibited for soil conditioning)	Excluding synthetic additives; only for inclusion in potting mixes
Plant preparations and extracts	
Compost made from ingredients listed in this appendix, spent mushroom waste, humus from worms and insects, urban composts from separated sources which are monitored for contamination	
Compost made from organic waste	
Green manure and green leaf manure	
Agricultural waste (straw, peanut shell, Coconut fibers etc.)	
Kitchen waste from organic products	

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
Composted or fermented household waste	<p>Products obtained from source-sorted household waste subjected to composting or anaerobic fermentation.</p> <p>Only household plant and animal waste, produced in a collection system controlled and / or accepted by the State.</p> <p>Maximum levels in mg / kg of dry matter (cf. Regulations 834/2007 and 889/2008): cadmium 0.7; copper 70; nickel: 25; lead: 45; zinc: 200; mercury : 0.4; chromium (total): 70; chromium (VI): 0</p>
II. Mineral Origin	
Basic slag	
Calcareous and magnesium amendments	
Limestone, gypsum, marl, maerl, chalk, sugar beet lime, calcium chloride,	
Magnesium rock, kieserite and Epsom salt (magnesium sulphate)	
Mineral potassium (e.g., sulphate of potash, muriate of potash, kainite, sylvanite, patentkali)	Shall be obtained by physical procedures but not enriched by chemical processes
Natural phosphates	Use after acidification
Pulverized rock, stone meal	
Clay (e.g., bentonite, perlite, vermiculite, zeolite)	
Sodium chloride	
Trace elements	
Sulphur	

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
III. Microbiological	
Biodegradable processing by -products of microbial origin (e.g., by -products of brewery or distillery processing)	
Microbiological preparations based on naturally occurring organisms	
IV. Others	
Biodynamic preparations	
Calcium lignosulfonate	
Azole	

Appendix 2. List of substances which shall not be used in organic plant production

<i>Description, Compositional Requirements of Substance</i>	<i>Comments</i>
<i>Human feces,</i>	Contamination risks
Sewage sludge	Danger of heavy metal contamination

Contamination risks

Sewage sludge

Prohibited

Crop Protectants and Growth Regulators

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
I. Plant and Animal Origin	
Algal preparations	As far as obtained by: (i) physical processes including dehydration, freezing and grinding; (ii)

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
	extraction with water or potassium hydroxide solutions, provided that the minimum amount of solvent necessary is used for extraction; (iii) fermentation.
Animal preparations and oils	
Beeswax	
Chitin nematocides (natural origin)	
Coffee grounds	
Corn gluten meal (weed control)	
Dairy products (e.g., milk, casein)	
Gelatine	
Lecithin	
Natural acids (e.g., vinegar)	
Neem (<i>Azadirachta indica</i>)	
Plant oils	
Plant preparations	
Plant-based repellents	
Propolis	
Pyrethrum (<i>Chrysanthemum cinerariaefolium</i>)	The synergist Piperonylbutoxide shall not be used.
Quassia (<i>Quassia amara</i>)	
[Rotenone (<i>Derris elliptica</i> , <i>Lonchocarpus</i> spp., <i>Tephrosia</i> spp.)]	Studies show a link between rotenone and Parkinson's disease; therefore, any use should be limited and include precautionary measures.
Ryania (<i>Ryania speciosa</i>)	
Sabadilla	
Seaweed, seaweed meal, and seaweed extracts	

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
Tobacco tea (pure nicotine is shall not be used)	
II. Mineral Origin	
Chloride of lime	
Clay (e.g., bentonite, perlite, vermiculite, zeolite)	
Copper salts (e.g., sulphate, hydroxide, oxychloride, octanoate)	Max 8 kg/ha per year (on a rolling average basis)
Diatomaceous earth	
Light mineral oils (paraffin)	
Lime sulphur (Calcium poly sulfide)	
Potassium bicarbonate	
Potassium permanganate	
Quicklime	
Silicates (e.g., sodium silicates, quartz)	
Sodium bicarbonate	
Sulphur	
III. Microorganisms	
Fungal preparations	
Bacterial preparations (e.g., Bacillus thuringiensis)	
Release of parasites, predators, and sterilized insects	
Viral preparations (e.g., granulosis virus)	
IV. Others	
Biodynamic preparations	
Calcium hydroxide	

<i>Description, Compositional Requirements of Substance</i>	<i>Conditions for use</i>
Carbon dioxide	
Ethyl alcohol	
Homeopathic and Ayurvedic preparations	
Iron phosphates (for use as molluscicide)	
Sea salt and salty water	
Soda	
Soft soap	
Sulphur dioxide	
V. Traps, Barriers, Repellents	
Physical methods (e.g., chromatic traps, mechanical traps)	
Mulches, nets	
Pheromones (in traps and dispensers only)	

Appendix 3. List of natural substances which shall not be used in organic plant production

<i>Description, Compositional Requirements of Substance</i>	<i>Comments</i>
<i>Nicotine</i>	Tobacco tea is allowed

Appendix 4. List of additives and processing aids for organic food processing

Indicative.

Where the substances listed in this annex can be found in nature, natural sources are preferred. Substances of certified organic origin are preferred.

Int'l Numbering System	<i>Product</i>	Additive	Processing Aid	Limitation/Note
INS 153	Wood ash	X		Traditional cheeses
INS 170	Calcium carbonate	X	X	
INS 181	Tannin		X	Only for wine
INS 184	Tannic acid		X	Filtration aid for wine
INS 220	Sulphur dioxide	X		Only for wine
INS 224	Potassium metabisulphite	X		Only for wine
INS 270	Lactic acid	X	X	
INS 290	Carbon dioxide	X	X	
INS 296	L-malic acid	X	X	
INS 300	Ascorbic acid	X		
INS 306	Tocopherols, mixed natural concentrates	X		
INS 322	Lecithin	X	X	
INS 330	Citric acid	X	X	
INS 331	Sodium citrates	X		
INS 332	Potassium citrates	X		
INS 333	Calcium citrates	X		
INS 334	Tartaric acid and salts	X	X	Only for wine
INS 335	Sodium tartrate	X	X	
INS 336	Potassium tartrate	X	X	
INS 341	Mono calcium phosphate	X		Only for "raising flour"
INS 342	Ammonium phosphate	X		Restricted to 0.3 gm/l in wine
INS 400	Alginic acid	X		

Int'l Numbering System	<i>Product</i>	Additive	Processing Aid	Limitation/Note
INS 401	Sodium alginate	X		
INS 402	Potassium alginate	X		
INS 406	Agar	X		
INS 407	Carrageenan	X		
INS 410	Locust bean gum	X		
INS 412	Guar gum	X		
INS 413	Tragacanth gum	X		
INS 414	Arabic gum	X		Only for milk products, fat products, confectionary , sweets, eggs
INS 415	Xanthan gum	X		Only fat, fruit, and vegetable products and cakes and biscuits
INS 416	Karay a gum	X		
INS 440	Pectin	X		Unmodified
INS 500	Sodium carbonates	X	X	
INS 501	Potassium carbonates	X	X	
INS 503	Ammonium carbonates	X		Only for cereal products, confectionery, cakes, and biscuits
INS 504	Magnesium carbonates	X		
INS 508	Potassium chloride	X		
INS 509	Calcium chloride	X	X	
INS 511	Magnesium chloride	X	X	Only for soybean products
INS 513	Sulphuric acid		X	pH adjustment of water during sugar processing
INS 516	Calcium sulphate	X		For soybean products, confectionery and in bakers' yeast

Int'l Numbering System	<i>Product</i>	Additive	Processing Aid	Limitation/Note
INS 517	Ammonium sulphate	X		Only for wine, restricted to 0.3 mg/l
INS 524	Sodium hydroxide	X	X	For sugar processing and for the surface treatment of traditional bakery products
INS 525	Potassium hydroxide		X	pH adjustment for sugar processing
INS 526	Calcium hydroxide	X	X	<ul style="list-style-type: none"> • Food additive for maize tortilla flour • Processing aid for sugar
INS 551	Silicon dioxide (amorphous)		X	For wine, fruit, and vegetable processing
INS 553	Talc		X	
INS 901	Beeswax		X	
INS 903	Carnauba wax		X	
INS 938	Argon	X		
INS 941	Nitrogen	X	X	
INS 948	Oxygen	X	X	
	Activated carbon		X	
	Bentonite		X	Only for fruit and vegetable products
	Casein		X	Only for wine
	Diatomaceous earth		X	Only for sweeteners and wine
	Egg-white albumen		X	Only for wine
	Ethanol		X	
	Gelatine		X	Only for wine, fruit, and vegetable
	Hazelnut shells		X	
	Isinglass		X	Only for wine
	Kaolin		X	

Int'l Numbering System	<i>Product</i>	Additive	Processing Aid	Limitation/Note
	Perlite		X	
	Preparations of bark		X	
	Vegetable oil		X	Greasing or releasing agent
	Water		X	

REFERENCES

East African Organic Products Standard

IFOAM Organics International

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Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries.

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<http://www.naturland.de/certifiedorganicaquaculture.html> (retrieved 7th July 2012)

The publications referred to in par. 2.1.1 may be obtained from the Canadian General Standards Board, Sales Centre, Gatineau, Canada K1A 1G6. Telephone 819-956-0425 or 1-800-665-2472. Fax 819-956-5740. E-mail ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Website www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html.