



STANDARDS FOR  
ORGANIC PRODUCTION AND PROCESSING

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# SECTION A: GENERAL

## 1.0 General Information

### 1.1 Scope of the JOAM Organic Standards

#### 1.1.1

These standards apply to production or handling operations or specified portions of a production or handling operation that operates within the territory of the country of Jamaica, and produces or handles crops, livestock, livestock products, or other agricultural products that are intended to be sold, labelled, or represented as having been produced and/or handled according to organic methods.

#### 1.1.2

These standards apply to the following products:

- a) unprocessed agricultural crop products, also livestock and unprocessed livestock products,
- b) processed agricultural crop and livestock products intended for human consumption prepared essentially from one or more ingredients of plant and/or animal origin;
- c) feeding stuffs, compound feeding stuffs and feed materials.

#### 1.1.3

These standards should not be seen as a final statement, but rather as a work in progress to contribute to the continued development and adoption of organic practices in Jamaica.

As such, the standards shall be maintained and revised as deemed appropriate by the JOAM Standards Committee, taking into consideration:

- members' submissions,
- changes to national and international standards,
- changes in agricultural and agro-industrial practices,
- national and international legislation,
- requests from the organic industry, and
- requests from the public.

#### 1.1.4

Within the text of these standards, the word "shall" indicates a mandatory requirement. The word "should" indicates a requirement with flexibility in the compliance methodology.

## 1.2 Objectives of Organic Production and Processing

### 1.2.1

Organic agriculture is a whole system approach based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition, animal welfare and social justice. Organic production therefore is more than a system of production that includes or excludes certain inputs.

### 1.2.2

The principal objectives of organic production and processing include:

- a) To produce sufficient quantities of high quality food, fibre and other products.
- b) To work compatibly with natural cycles and living systems through the soil, plants and animals in the entire production system.
- c) To recognize the wider social and ecological impact of and within the organic production and processing system.
- d) To maintain and increase long-term fertility and biological activity of soils using locally adapted cultural, biological and mechanical methods as opposed to reliance on inputs.
- e) To maintain and encourage agricultural and natural biodiversity on the farm and surrounds through the use of sustainable production systems and the protection of plant and wildlife habitats.
- f) To maintain and conserve genetic diversity through attention to on-farm management of genetic resources.
- g) To promote the responsible use and conservation of water and all life therein.
- h) To use, as far as possible, renewable resources in production and processing systems and avoid pollution and waste.
- i) To foster local and regional production and distribution.
- j) To create a harmonious balance between crop production and animal husbandry.
- k) To provide living conditions that allow animals to express the basic aspects of their innate behaviour
- l) To utilise biodegradable, recyclable and recycled packaging materials.
- m) To provide those involved in organic farming and processing with a quality of life that satisfies their basic needs, within a safe, secure and healthy working environment.
- n) To support the establishment of an entire production, processing and distribution chain which is both socially just and ecologically responsible.
- o) To recognize the importance of, and protect and learn from, indigenous knowledge and traditional farming systems.

## 1.3 Purpose of the JOAM Organic Standards

### 1.3.1

These standards are intended:

- a) to establish national standards governing the marketing of certain agricultural products as organically produced products,
- b) to assure consumers that organically produced products meet a consistent standard, and
- c) to facilitate import and export commerce in fresh and processed food that is organically produced.

### 1.3.2

These requirements may be applied to any system of regular inspection and certification designed to ensure the credibility of organically certified products and the building of consumer trust.

## 1.4 References

### 1.4.1

CODEX Alimentarius - Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods, GL32-1999, Rev.1-2001, United Nations FAO.

### 1.4.2

International Federation of Organic Agriculture Movements (IFOAM) Basic Standards for Organic Production and Processing, August 2002.

### 1.4.3

EEC Council Regulation 2092/91 "On organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs", 24 June 1991, as amended.

### 1.4.4

USDA National Organic Program; Final Rule: 7 CFR Part 205 of The Organic Foods Production Act of 1990, 21 December 2000.

## 1.5 Definitions

### Accreditation

The procedure by which an authoritative body gives a formal recognition that a body or person is competent to carry out specific tasks

### Agricultural product

Any agricultural commodity or product, whether raw or processed, including any commodity or product derived from livestock, that is produced for human or livestock consumption.

### Allopathic

The treatment of a disease by using remedies whose effects differ from those produced by that disease.

### Annual seedling

A plant grown from seed that will complete its life cycle or produce a harvestable yield within the same crop year or season in which it was planted.

### Audit trail

Documentation that is sufficient to determine the source, transfer of ownership, and transportation of any agricultural product labelled as "100 percent organic," the organic ingredients of any agricultural product labelled as "organic" or "made with organic (specified ingredients)" or the organic ingredients of any agricultural product containing less than 70 percent organic ingredients identified as organic in an ingredients statement.

### Ayurvedic

Traditional Indian system of medicine.

### Biodiversity

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

### Breeding

The 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 that is established to limit application of, or contact with, prohibited substances from an adjacent area.

A buffer zone shall be sufficient in size or other features (e.g., windbreaks or a diversion ditch) to prevent the possibility of unintended contact by prohibited substances applied to adjacent land areas with an area that is part of a certified operation.

### Certification, certified

The procedure by which a third party gives written assurance that a clearly identified process has been methodically assessed, such that adequate confidence is provided that specified products conform to specified requirements.

### Certification body, certifying agent

The body that is accredited to grant certification, as distinct from standard setting and inspection.

### Certification mark

A certification body's sign, symbol or logo that identifies product(s) as being certified according to the rules of a programme operated by that certification body.

Certification programme

System operated by a certification body with its own rules, procedures and management for carrying out certification of conformity.

Co-mingling

Physical contact between unpackaged organically produced and non-organically produced agricultural products during production, processing, transportation, storage or handling, other than during the manufacture of a multi-ingredient product containing both types of ingredients.

Commercially Available

The ability to obtain a production input in an appropriate form, or any combination thereof that a certifying agent may be accredited to certify under this part

Contamination

Pollution of organic product or land and water resource; or contact with any material that would render the product unsuitable for organic certification

Conventional

Conventional means any material, production or processing practice that is not certified organic or organic "in-conversion".

Conversion period

The time between the start of the organic management and the certification of crops and animal husbandry as organic.

Crop rotation

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

Culture

A microorganism, tissue, or organ growing on or in a medium.

Detergents

Substances and preparations which are intended to be used for cleaning certain products. (See Appendix 5)

Direct source organism

The specific plant, animal, or microbe that produces a given input or ingredient, or that gives rise to a secondary or indirect organism that produces an input or ingredient.

Disinfect

To reduce, by physical or chemical means, the number of potentially harmful microorganisms in the environment, to a level that does not compromise food safety or suitability.

Drift

The physical movement of prohibited substances from the intended target site onto an organic operation or portion thereof.

Exception

Permission granted to an operator by a certification body to be excluded from the need to comply with normal requirements of the standards. Exceptions are granted on the basis of clear criteria, with clear justification and for a limited time period only.

Farm unit

The total area of land under control of one farmer or collective of farmers, and including all the farming activities or enterprises.

#### Feed, feeding stuffs

Edible materials, which are consumed by livestock for their nutritional value. Feed may be concentrates (grains) or roughages (hay, silage, fodder). The term, "feed," encompasses all agricultural commodities, including pasture ingested by livestock for nutritional purposes.

#### Feed additive

A substance added to feed in micro quantities to fulfil a specific nutritional need; i.e., essential nutrients in the form of amino acids, vitamins, and minerals.

#### Feed supplement

A combination of feed nutrients added to livestock feed to improve the nutrient balance or performance of the total ration and intended to be: (1) Diluted with other feeds when fed to livestock; (2) Offered free choice with other parts of the ration if separately available; or (3) Further diluted and mixed to produce a complete feed.

#### 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.

#### Genetic diversity

Genetic diversity means the variability among living organisms from agricultural, forest and aquatic ecosystems; this includes diversity within species and between species.

#### Genetic engineering

Genetic engineering is 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 is transformed by genetic engineering.

#### GMO use

The use of GMO's and GMO derivatives as foodstuffs, food ingredients (including additives and flavourings), processing aids (including extraction solvents), feeding stuffs, compound feeding stuffs, feed materials, feed additives, processing aids for feeding stuffs, certain products used in animal nutrition, plant protection products, veterinary medicinal products, fertilisers, soil conditioners, seeds, vegetative reproductive material and livestock;

#### Genetic resources

Genetic material of actual or potential value.

#### Green manure

A crop that is incorporated into the soil for the purpose of soil improvement. 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, grassland.

#### HACCP

Hazard Analysis and Critical Control Point. A specific food safety program to identify contamination risks and actions to prevent exposure to such risks.

Homeopathic treatment

Treatment of disease based on administration of remedies prepared through successive dilutions of a substance that in larger amounts produces symptoms in healthy subjects similar to those of the disease itself.

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 (ionising radiation)

High energy emissions from radio-nucleotides, 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.

Labelling

Any written, printed or graphic representation that is present on the label of a product, accompanies the product, or is displayed near the product.

Livestock, livestock production

The production of domestic or domesticated terrestrial animals (including insects) and aquatic species farmed in fresh, salt or brackish water. The products of hunting and fishing of wild animals shall not be considered as organic production.

Marketing

Holding or displaying for sale, offering for sale, selling, delivering or placing on the market in any other form.

Media (plural) or medium (singular)

The substance in which an organism, tissue, or organ exists.

Multiplication

The growing on of seed stock or plant material to increase supply for future planting.

Natural fibre

A non-synthetic filament of plant or animal origin.

Operator

An individual or business enterprise, responsible for ensuring that products meet the certification requirements.

Organic

A labelling term that denotes products that have been produced in accordance with organic production standards and certified by a duly constituted certification body or authority.

Organic product

A product, which has been produced, processed, and/or handled in compliance with organic standards.

Organic seed and plant material

Seed and planting material that is produced under certified organic management

Organic feed, organic feeding stuff

Feed, feed materials produced in accordance with the rules of a pertinent organic standard, and duly certified as such.

#### Organic system plan

A plan of management of an organic production or handling operation that has been agreed to by the producer or handler and the certifying agent and that includes written plans concerning all aspects of agricultural production or handling described in these standards.

#### Parallel production

Any production where the same unit is growing, breeding, handling or processing the same products in both a certified organic system and a non-certified or non-organic system. A situation with “organic” and “in conversion” production of the same product is also parallel production. Parallel production is a special instance of split production.

#### Preparation, processing

The operations of preserving and/or processing of agricultural products (including slaughter and cutting for livestock products), and also packaging and/or alterations made to the labelling concerning the presentation of the organic production method of the fresh, preserved and/or processed products.

#### Primary natural ecosystem

Land area in its original evolved state; not altered by man.

#### Plant protection products

Any substance intended for preventing, destroying, attracting, repelling, or controlling any pest or disease including unwanted species of plants or animals during the production, storage, transport, distribution and processing of food, agricultural commodities, or animal feeds.

#### Pre-packaged foodstuff

Any single item for presentation as such to the ultimate consumer, consisting of a foodstuff and the packaging into which it was put before being offered for sale, whether such packaging encloses the foodstuff completely or only partially, but in any case in such a way that the contents cannot be altered without opening or changing the packaging.

#### Processing aid

Any substance or material, not including apparatus or utensils, and not consumed as a food ingredient by itself, intentionally used in the processing of raw materials, foods or its ingredients, to fulfil a certain technical purpose during treatment or processing and which may result in the non-intentional, but unavoidable presence of residues or derivatives in the final product.

#### Production

The operations on the agricultural holding involved in producing, packaging and initially labelling as products of organic production agricultural products produced on that holding.

#### Propagation

The reproduction of plants by sexual (i.e. seed) or asexual (i.e. cuttings, root division) means.

#### Sanitize

To adequately treat produce or food-contact surfaces by a process that is effective in destroying or substantially reducing the numbers of vegetative cells of microorganisms of public health concern, and other undesirable microorganisms, but without adversely affecting the product or its safety for the consumer.

#### Split production, split operation

Any operation where only part of the farm or processing unit is certified as organic. The remainder of the property can be (a) non-organic, (b) in conversion or (c) organic but not certified. Also see parallel production.

#### Synthetic

Manufactured by chemical and industrial processes. May include products not found in nature, or simulation of products from natural sources (but not extracted from natural raw materials).

Veterinary medicinal products

Any substance or combination of substances presented for treating or preventing disease in human beings or animals. Any substance or combination of substances which may be administered to human beings or animals with a view to making a medical diagnosis or to restoring, correcting or modifying physiological functions in human beings or animals is likewise considered a medicinal product.

Wild crop, wildcraft

Any plant or portion of a plant that is collected or harvested from a site that is not maintained under cultivation or other agricultural management.

## SECTION B: ORGANIC PRODUCTION

### 2.0 Organic Ecosystems

#### 2.1 Ecosystem Management

##### 2.1.1

Operators shall take measures to maintain and improve landscapes and enhance biodiversity quality.

##### 2.1.2

Clearing of primary natural ecosystems is prohibited.

##### 2.1.3

At least 10 percent of the farm/production unit shall be part of a biodiversity program.

##### 2.1.4

Biodiversity areas may include: natural fallow without grazing; hedgerows; extensively used agro-forestry systems; natural, non-commercial forests; swamps.

#### 2.2 Soil and Water Conservation

##### 2.2.1

Operators shall define and implement specific measures to prevent soil erosion. These shall include, as appropriate:

- a) minimizing the loss of topsoil through minimal tillage, contour ploughing and crop selection;
- b) maintaining soil plant cover and using other management practices that conserve soil;
- c) preventing the burning of organic matter, except when required to suppress the spread of disease or to stimulate seed germination;
- d) avoiding the cultivation of steep hills with annual crops, unless appropriate measures to prevent soil erosion are implemented;
- e) avoiding the overgrazing of pastures.

##### 2.2.2

Crop production, processing and handling systems 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 to the soil.

##### 2.2.3

At least the amount of nutrients removed by harvesting the crops, shall be returned to the land by mulch, cover crops, green manure or compost.

##### 2.2.4

Deep rooting leguminous plants should further be used to maintain or increase soil fertility.

##### 2.2.5

Regular soil analyses should be carried out to show that the soil fertility (organic matter) is not decreasing.

### 2.2.6

Where climatic conditions or other factors do not allow a permanent vegetative ground cover, vegetative or plastic mulches may be used. These shall be removed from the field at the end of the growing or harvest season.

## 2.3 Use and management of water resources

### 2.3.1

Operators shall use techniques that conserve water, such as, drip irrigation

### 2.3.2

Operators shall implement measures to improve and maintain organic matter content of the soil

### 2.3.3

Planting should be timed to minimize the need for irrigation.

### 2.3.4

Irrigation practices shall be designed for efficient use of water at an appropriate frequency.

### 2.3.5

Water and inputs shall be applied with due care to minimise runoff and reduce the risk of contaminating surface and ground water

### 2.3.6

Systems for recycling shall prevent the contamination of water either by chemicals, or by animal or human pathogens.

## 2.4 Grazing management

### 2.4.1

Grazing systems shall have a beneficial influence not only on the fattening of the animals but also on the sustainable use of the pastures. Overgrazing affecting soil fertility and/or leading to soil depletion is prohibited.

### 2.4.2

Grazing pressure, expressed as the relationship between the forage available for animals to graze and the need for forage, shall be considered in grazing plans.

### 2.4.3

Grazing plans shall be coordinated with the vegetation cycles in order that both animals and plants remain in good condition.

### 2.4.4

Annual grasses shall be allowed to set seed in order to survive.

### 2.4.5

If permanent grazing systems cannot be avoided, the stocking rate shall be kept at a level that allows natural recovery of the pasture.

### 2.4.6

Methods of organic grazing management should include, as appropriate:

- a) the improvement of pastures with leguminous plants,
- b) mixed grazing using different animal species,
- c) rotational grazing

## 2.5 Prevention of soil and water salination.

### 2.5.1

When irrigation is practiced, care shall be taken concerning the irrigation water quality. Water analyses shall be carried out to ensure that salinity levels do not exceed generally accepted levels.

### 2.5.2

Sufficient drainage shall be provided to prevent build-up of salts in the topsoil.

### 2.5.3

Regular soil analyses should be carried out to show levels of salts in the soil.

## 2.6 Genetic Engineering

### 2.6.1

The deliberate use or negligent introduction of genetically engineered organisms or their derivatives to organic farming systems or products is prohibited. This shall include animals, seed, propagation material, and farm inputs such as fertilizers, soil conditioners, vaccines or crop protection materials.

### 2.6.2

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

### 2.6.3

Inputs, processing aids and ingredients shall be traceable back one step in the biological chain to the direct source organism \*(see definition) from which they are produced to verify that they are not derived from GMOs.

Note 1: Contamination of organic product by GMOs that results from circumstances beyond the control of the operator may alter the organic status of the operation and/ or product.

## 2.7 Wild harvested products and common/public land management

### 2.7.1

Wild harvested products shall only be certified organic if they are derived from a stable and sustainable growing environment.

### 2.7.2

The people who harvest, gather, or wildcraft shall not take any products at a rate that exceeds the sustainable yield of the ecosystem, or threatens the existence of plant, fungal or animal species, including those not directly exploited.

### 2.7.3

The methods used to harvest, gather or wildcraft shall not threaten the plant, fungal or animal species, including those not directly exploited.

### 2.7.4

Operators shall harvest products only from a clearly defined area where prohibited substances have not been applied.

### 2.7.5

The collection or harvest area shall be at an appropriate distance from conventional farming, pollution and contamination.

### 2.7.6

The operator who manages the harvesting or gathering of common resource products shall be familiar with the defined collecting area.

### 2.7.7

The operator and the people who harvest, gather or wildcraft shall comply with all local and national regulations regarding use of common and public lands.

## **3.0 General Requirements**

### 3.1 Conversion Requirements

#### 3.1.1

There shall be a period of organic management, meeting all the requirements of these standards, before the resulting product may be considered as organic. A conversion plan shall be documented to establish the steps and the timeframes for whole farm conversion. The plan shall define the distinct boundaries and buffer zones that identify the area of the operation.

Note 2: Minimum conversion periods for land and crops are given in 4.2, and for livestock husbandry in 6.2.

#### 3.1.2

The start of the conversion period shall be calculated from the date of application to the certification body or, alternatively, from the date of the last application of unapproved inputs provided the operator can demonstrate that standards requirements have been met from that date. Calculation of the conversion period may not start before the date of the last non-compliant input or practice. For the length of conversion periods, refer to sections 4.2. and 6.2.

#### 3.1.3

A full conversion period shall not be required where de facto full standards requirements have been met for at least three years, and where this can be independently verified. Verification by means of a formal inspection shall be carried out prior to the first harvest.

### 3.2 Split Production and Parallel Production

#### 3.2.1

Where the whole farm is not converted (split production) the organic and conventional parts of the farm shall be clearly and continuously separate and this shall be verified by inspection.

#### 3.2.2

Simultaneous production of organic and non-organic crops or animal products (parallel production) shall only be permitted where such production is undertaken with clear and continuous separation of all product claimed as certified or certifiable as organic.

#### 3.2.3

Where farms engage in split (including parallel) production the use of genetically engineered organisms is prohibited in any production activity on the farm.

### 3.3 Maintenance of Organic Management

#### 3.3.1

The operator shall demonstrate that the production system does not involve continuous switching between organic and conventional management.

## 4.0 Crop Production

### 4.1 Choice of Crops and Varieties

#### 4.1.1

Organic seed and plant materials of appropriate varieties and quality shall be used. Where they are not commercially available, JOAM approved time limits for the use of non-organic seed and plant material shall apply.

#### 4.1.2

When organic seed and plant materials are not available, conventional materials may be used provided that they have not been treated with pesticides not otherwise permitted by these standards.

#### 4.1.3

Where untreated conventional seeds and plant materials are not available, chemically treated seed and plant material may be used, provided that:

- a) The certification body shall satisfy itself that sufficient quantities of an equivalent organically produced or untreated variety are not available;
- b) The seedling shall not have been treated, since sowing, with any product other than those listed in Appendix 2;
- c) The producer of the seedlings shall operate in compliance with the requirements of this or an equivalent organic standard;
- d) After planting, the seedlings shall be organically cultivated for at least six weeks before harvesting;
- e) Any product containing ingredients derived from such seedlings shall not be certified organic.
- f) The certification body shall establish time limits and conditions for exemptions that permit use of any chemically treated seeds and plant materials. Such time limits shall be subject to approval by JOAM.

Treated seeds may be cultivated in an area separated from the organic operation by suitable buffers, to produce organic seeds for use in the organic operation. Treated seeds shall not be planted in areas demarcated for organic production.

#### 4.1.4

Seeds, annual seedlings, and planting stock treated with prohibited substances may be used to produce an organic crop when the application of the materials is a requirement of Government phytosanitary regulations. Such use shall be subject to approval by JOAM.

### 4.2 Length of Conversion Period (Plant & Plant Products)

#### 4.2.1

Plant products from annual production shall only be considered organic when a conversion period of at least 24 months has elapsed prior to sowing/planting. In the case of perennials (excluding pastures and meadows) a period of at least 36 months prior to harvest shall be required. JOAM may decide, under certain conditions, to extend or reduce that period, having regard to previous parcel use.

#### 4.2.2

There shall be at least a 24-month conversion period prior to pastures, meadows and products harvested from them, being considered organic. JOAM may decide, under certain conditions, to extend or reduce that period, having regard to previous parcel use.

#### 4.2.3

The conversion period may be extended by JOAM depending on conditions such as past use of the land, management capacity of the operator and environmental factors.

4.2.4

Where conversion periods exceeding those stated in 3.1 are required, and labelling of product as "produce of organic agriculture in the process of conversion" or a similar description is permitted, the standards requirements shall have been met for at least 12 months prior to such labelling.

## 4.3 Plant Breeding and Multiplication

### 4.3.1

To be considered organic, only suitable methods of breeding shall be used as listed in this standard.

All multiplication practices except in-vitro-cultivation shall be under certified organic management.

The use of genetically modified organisms and/or any products derived from such organisms is prohibited.

### 4.3.2

Organic seed and plant materials shall be propagated under organic management for one generation or 12 months, prior to being certified as organic seed and plant material.

### 4.3.3

The following plant breeding methods and materials are permitted for organic plant breeding:

- a) combination breeding
- b) crossing varieties
- c) bridge crossing
- d) backcrossing hybrids with fertile F1
- e) temperature treating
- f) grafting style
- g) cutting style
- h) untreated mentor pollen

### 4.3.4

The following selection techniques are permitted:

- a) mass selection
- b) pedigree selection
- c) site-determined selection
- d) change in surroundings
- e) change in sowing time
- f) ear bed method
- g) test crossing
- h) indirect selections
- i) DNA diagnostic methods

### 4.3.5

Permitted maintenance and multiplication methods include the use of the following:

- a) generative propagation
- b) vegetative propagation
- c) partitioned tubers
- d) scales, husks, partitioned bulbs, brood bulbs, bulbils
- e) offset bulbs, etc.
- f) layer, cut and graft shoots
- g) rhizomes
- h) meristem culture

## 4.4 Diversity in Crop Production

### 4.4.1

Diversity in plant production and activity shall be assured by minimum crop rotation requirements and/or variety of plantings. Minimum rotation practices for annual crops shall be established unless the operator demonstrates diversity in plant production by other means.

#### 4.4.2

Diversity in crop production shall be achieved by a combination of:

- a) a diverse and versatile crop rotation that includes green manure, legumes and deep rooting plants;
- b) appropriate coverage of soil with diverse plant species for as much of the year as possible;

### 4.5 Soil Fertility and Fertilisation

#### 4.5.1

The fertility and the biological activity of the soil shall be maintained or increased, by:

- a) cultivation of legumes, green manures or deep-rooting plants in an appropriate multi-annual rotation programme;
- b) incorporation of livestock manure from livestock production in accordance with the provisions of these standard;
- c) incorporation of other organic material, composted or not, from holdings producing the same in accordance with these standards.

#### 4.5.2

Material of microbial, plant or animal origin shall form the basis of the fertility programme.

#### 4.5.3

Nutrients and fertility products shall be applied in a way that protects soil, water, and biodiversity.

#### 4.5.4

Material applied to the land or crop shall be in accordance with Appendix 1 and 2.

#### 4.5.5

Raw animal manure shall be composted unless it is:

- a) Applied to land used for a crop not intended for human consumption;
- b) Incorporated into the soil not less than 120 days prior to the harvest of a product whose edible portion has direct contact with the soil surface or soil particles; or
- c) Incorporated into the soil not less than 90 days prior to the harvest of a product whose edible portion does not have direct contact with the soil surface or soil particles

#### 4.5.6

Composted plant and animal materials shall be produced through a process that:

- a) established an initial C:N ratio of between 25:1 and 40:1; and
- b) attains and maintains a temperature between 55 °C and 77°C during the active period

#### 4.5.7

Manures containing human excrement (faeces and urine) are prohibited for use on crops for human consumption.

#### 4.5.8

Only crop nutrients or soil amendments included in Appendix 1 are allowed for use in organic crop production. These shall be applied in accordance with limitations for their use set out in the Appendix 4.

#### 4.5.9

The operator shall not use:

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- a) Any fertilizer or composted plant and animal material that contains a synthetic substance not included in the Appendix 3 list of synthetic substances allowed for use in organic crop production;
- b) Sewage sludge (bio solids); or
- c) Ash from burning of a plant or animal material, except wood ash, as listed in Appendix 1.

### 4.5.10

Operators shall not use burning as a means of disposal for crop residues produced on the operation: Except, that, burning may be used to suppress the spread of disease or to stimulate seed germination.

### 4.5.11

Mineral fertilisers shall only be used in a program addressing long-term fertility needs together with other techniques such as organic matter additions, green manures, rotations and nitrogen fixation by plants.

### 4.5.12

Mineral fertilisers shall be applied in the form in which they are naturally composed and extracted and shall not be rendered more soluble by chemical treatment, other than addition of water and mixing with other naturally occurring, permitted inputs.

### 4.5.13

Under exceptional circumstances, and after consideration of all relevant information, and having regard to Appendix 4, JOAM may grant exception to this requirement. These exceptions shall not apply to mineral fertilisers containing nitrogen.

### 4.5.14

Chilean nitrate and all synthetic nitrogenous fertilisers, including urea, are prohibited.

### 4.5.15

For the production of mushrooms, only the following substrates shall be used:

- a) farmyard manure and animal excrements from operations that meet these organic standards, or
- b) non-organic manures and excrements compliant with Appendix 1, comprising up to 25% of the substrate, as calculated on the weight of total components before composting (excluding covering material and any added water), and only when the organically produced manures are not available;
- c) organically produced agricultural products (e.g. straw);
- d) peat, not chemically treated;
- e) wood, not chemically treated after felling;
- f) mineral products listed in Appendix 1;
- g) water and soil.

## 4.6 Pest, Disease and Weed Management including Growth Regulators

### 4.6.1

Operators shall use management practices to prevent crop pests, weeds, and disease. These shall include, as applicable:

- a) Crop rotation and soil and crop nutrient management practices,
- b) Sanitation measures to remove disease vectors, weed seeds, and habitat for pest organisms; and
- c) Cultural practices that enhance crop health, including selection of plant species and varieties with regard to suitability to site-specific conditions and resistance to prevalent pests, weeds, and diseases.

### 4.6.2

The organic production plan shall define the applicable positive processes and mechanisms capable of accounting for management of significant pests, weeds and diseases under normal circumstances.

Pests, diseases and weeds shall be managed by a combination of the following measures:

- a) choice of appropriate species and varieties,
- b) appropriate rotation programme,
- c) mechanical cultivation procedures,
- d) protection and promotion of natural enemies of pests through provisions favourable to them (e.g. hedges, nesting sites, release of predators),
- e) non-synthetic controls such as lures, traps, and repellents.
- f) non-chemical weed controls such as mulching, mowing, livestock grazing, flame, heat or electrical weeding.

### 4.6.5

When the practices provided for in paragraphs 4.6.1 of this section are insufficient to prevent or control crop pests, weeds, and diseases, a biological or botanical substance or a substance included in the Appendix 2 list of synthetic substances allowed for use in organic crop production may be applied to prevent, suppress, or control pests, weeds, or diseases:

The conditions for using the substance shall be documented in the organic system plan.

### 4.6.4

If the ecosystem or the quality of organic products might be jeopardised, the Procedure to Evaluate Additional Inputs to Organic Agriculture (Appendix 4) and other relevant criteria shall be used to establish whether the product is acceptable.

### 4.6.5

Any formulated input shall have only active ingredients on Appendix 2, and all other components shall meet the criteria of Appendix 4. Formulated products with only active ingredients on Appendix 2 but with other components that have not been reviewed and approved by JOAM against the above criteria may not be used.

## 4.7 Avoiding Contamination

### 4.7.1

The operator shall employ measures including barriers and buffer zones to avoid potential contamination and limit contaminants in organic products.

### 4.7.2

In case of a reasonable suspicion of contamination the certification body shall ensure that an analysis of the relevant products and possible sources of pollution (soil, water, air and inputs) is undertaken to determine the

level of contamination, and shall make the appropriate responses, such as detection of contamination sources, considering background contamination and other relevant factors.

#### 4.7.3

For synthetic structure coverings, mulches, fleeces, insect netting and silage wrapping, only products based on polyethylene and polypropylene or other polycarbonates are permitted. These shall be removed from the soil after use and shall not be burned on the farmland.

#### 4.7.4

All equipment from conventional farming systems shall be thoroughly cleaned of potentially contaminating materials before being used on organically managed areas.

## 5.0 Bee Keeping

### 5.1 General Principles

#### 5.1.1

Beekeeping activities shall contribute to the protection of the environment and support agricultural and forestry productions through the pollination action of bees.

#### 5.1.2

The certification of beekeeping products shall be dependent on the conditions for extraction, processing and storage of beekeeping products, as well as the characteristics of the hives treatments and the quality of the environment.

#### 5.1.3

All beekeeping units of an operation within the same area shall comply with the requirements of these standards. Exceptions may be made where the location of some units do not meet the requirements, but all other requirements are satisfied. In such cases, the products shall not be sold, labelled, or represented as organic.

#### 5.1.4

Bee products may be sold as organically produced when the requirements of these Standards have been complied with for at least one year.

During the conversion period the wax shall be replaced according to the requirements laid down in paragraph 4.6.2

#### 5.1.5

In the choice of breeds, account shall be taken of the capacity of animals to adapt to local conditions, their vitality and their resistance to disease. Preference should be given to the use of European breeds of *Apis mellifera* and their local ecotypes.

#### 5.1.6

Apiaries shall be constituted by means of the division of colonies or the acquisition of swarms or hives from organic bee units complying with these standards, or their equivalent.

#### 5.1.7

Where bee colonies are converted to organic production, introduced bees shall come from organic production units when available.

#### 5.1.8

The reconstitution of the apiaries shall be authorized by the certification body when organically managed apiaries are not available, or in cases of high mortality of animals caused by health or catastrophic circumstances. This shall be subject to the conversion period.

#### 5.1.9

For renovation of the apiaries, the incorporation of non-organic queen bees and swarms shall not exceed 10% per year. The queen bees and swarms shall be placed in hives with combs or comb foundations coming from organic production units.



## 5.2 Location of Apiaries & Provision of Nutrition

### 5.2.1

Hives shall be situated in organically managed fields and/or wild natural areas.

A map on an appropriate scale listing the location of hives shall be provided to the certification body by the beekeeper. Where no such areas are identified, the beekeeper shall provide the certification body with appropriate documentation and evidence, including suitable analyses if necessary, that the areas accessible to his colonies meet the conditions required in these standards.

### 5.2.2

The operator shall not place hives within foraging distance of fields or other areas with a high contamination risk. The organic production plan shall demonstrate that the location of apiaries will maintain enough distance from any non-agricultural production sources possibly leading to contamination, for example: urban centres, motorways, industrial areas, waste dumps, waste incinerators, etc.

### 5.2.3

Hives shall be placed in an area that ensures access to sources of honeydew, nectar and pollen that meets organic crop production requirements sufficient to supply all of the bees' nutritional needs. This shall include access within a radius of 3 km from the apiary site, nectar and pollen sources consisting essentially of organically produced crops and/ or spontaneous vegetation, access to water.

### 5.2.4

The above requirements do not apply to areas where flowering is not taking place, or when the hives are dormant.

### 5.2.5

At the end of the production season, hives shall be left with reserves of honey and pollen sufficient for the colony to survive the dormancy period.

### 5.2.6

The artificial feeding of colonies is authorised where the survival of the hives is endangered due to extreme climatic conditions. Artificial feeding shall be made with organically produced honey, preferably from the same organic-production unit.

### 5.2.7

Certification bodies may authorize organically produced sugar syrup, or organic sugar molasses instead of organically produced honey in artificial feeding, in particular, when it is required by climatic conditions that provoke crystallisation of honey.

### 5.2.8

Products other than those authorized above are prohibited in the feeding of colonies.

### 5.2.9

Artificial feeding, when necessary, shall be carried out only between the last honey harvest and 15 days before the start of the next nectar or honeydew flow period.

### 5.2.10

The following information shall be entered in the register of the apiaries with regard to the use of artificial feeding:

- a) type of product,
- b) dates used,
- c) quantities used, and
- d) identity of the hives where it is used.

## 5.3 Disease Prevention & Treatment

### 5.3.1

Disease prevention in beekeeping shall be based on the following principles:

- a) the selection of appropriate hardy breeds;
- b) the application of certain practices encouraging strong resistance to disease and the prevention of infections, such as: regular renewal of queen bees, systematic inspection of hives to detect any health anomalies, control of male broods in the hives, disinfecting of materials and equipment at regular intervals, destruction of contaminated material or sources, regular renewal of beeswax and sufficient reserves of pollen and honey in hives.

### 5.3.2

For pest and disease control the following are permitted:

- lactic, formic acid
- oxalic, acetic acid
- sulphur
- natural essential oils (e.g. menthol, eucalyptol, camphor)
- *Bacillus thuringiensis*
- steam, direct flame and caustic soda for hive disinfection.

### 5.3.3

Where preventative measures fail, veterinary medicinal products should be used provided that:

- a) phytotherapeutic and homeopathic products shall be used in preference to allopathic products chemically synthesised, provided that their therapeutic effect is effective for the condition for which the treatment is intended;
- b) if the use of the abovementioned products should prove or is unlikely to be effective to eradicate a disease or infestation which risks destroying colonies, allopathic chemically synthesised medicinal products may be used under the responsibility of a veterinarian, or other persons authorised by the relevant Government authority.
- c) if allopathic chemically synthesised medicinal products are used, the bee products shall not be sold as organic
- d) If a treatment is applied with chemically synthesised allopathic products, during such a period, the colonies treated shall be placed in isolation apiaries and all the wax shall be replaced with wax complying with the conditions laid down in this Regulation. Subsequently, the conversion period of one year will apply to those colonies.
- e) The practice of destroying the male brood is permitted only to contain infestation with *Varroa jacobsoni* (mites).

### 5.3.4

Whenever veterinary medicinal products are to be used, the type of product (including the indication of the active pharmacological substance) together with details of the diagnosis, the posology, the method of administration, the duration of the treatment and the legal withdrawal period shall be recorded clearly and declared to the inspection body or authority before the products are marketed as organically produced.

## 5.4 Hive Management

### 5.4.1

The health and welfare of the hive shall be primarily achieved by hygiene and hive management

### 5.4.2

The destruction of bees in the combs as a method of harvesting of bee products is prohibited.

5.4.3

The use of combs, which contain broods, is prohibited for honey extraction.

5.4.4

Mutilations, such as clipping of the wings of queen bees, are prohibited.

5.4.5

The replacement of the queen bees involving the killing of the old queen is permitted.

5.4.6

Artificial insemination of queen bees is permitted.

5.4.7

The use of chemical synthetic bee repellents is prohibited during honey extraction operations.

5.4.8

The use of smoke should be kept to a minimum. Acceptable smoking materials should be natural or from materials that meet the requirements of these standards.

## 5.5 Identification and Recordkeeping

5.5.1

The maps and other documentation describing the areas of beekeeping shall be in accordance with all applicable restrictions and guidelines of the Jamaican Ministry of Agriculture, and the regions or areas designated by the ministry and/or any other governmental authority.

5.5.2

The zone where the apiary is situated shall be registered with the Ministry of Agriculture, together with the identification of the hives. The ministry and/or other authority shall be informed of the moving of apiaries with a deadline agreed on with the certification body.

5.5.3

Particular care shall be taken to ensure adequate extraction, processing and storage of beekeeping products. All the measures to comply with these requirements shall be recorded.

5.5.4

The removals of the supers and the honey extraction operations shall be entered in the register of the apiary.

## 5.6 Hive Characteristics & Materials

5.6.1

Each beehive shall primarily consist of natural materials. Use of construction materials with potentially toxic effects is prohibited.

5.6.2

During the conversion period the wax shall be replaced by organically produced wax. Where no prohibited products have been previously used in the hive and there is no risk of contamination of wax, replacement of wax is not necessary.

5.6.3

In the case of new installations or during the conversion period, non-organically produced bees wax may be authorised by the certification body in exceptional circumstances where organically produced beeswax is not available on the market and provided that it comes from the cap.

5.6.4

In cases where all the wax cannot be replaced during a one-year period, the conversion period may be extended by the certification body with the approval of JOAM.

## 6.0 Animal Husbandry

### 6.1. Animal Management

#### 6.1.1

Livestock production should contribute to the equilibrium of agricultural production systems by providing for the nutrient requirements of crops and by improving the soil's organic matter. It should establish and maintain soil-plant, plant-animal and animal-soil interdependence.

By utilising renewable natural resources (livestock manure, legumes and fodder crops), the cropping, stock-farming and the pasturage systems should allow soil fertility to be maintained and improved in the long term and should contribute to the development of sustainable agriculture.

#### 6.1.2

The operator shall ensure that the environment, the facilities, stocking density and flock/herd size provides for the behavioural needs of the animals and provides for:

- a) sufficient free movement and opportunity to express normal patterns of behaviour
- b) sufficient fresh air, water, feed and natural daylight to satisfy the needs of the animals
- c) access to resting areas, shelter and protection from sunlight, temperature, rain, mud and wind adequate to reduce animal stress
- d) the maintenance of social structures by ensuring that herd animals are not kept in isolation from other animals of the same species
- e) construction materials and production equipment that do not significantly harm human or animal health

#### 6.1.3

This provision does not apply to small herds for mostly self-sufficient production. Operators may isolate male animals, sick animals and those about to give birth.

#### 6.1.4

Housing conditions shall ensure:

- a) ample access to fresh water and feed according to the needs of the animals
- b) animals have sufficient space to stand naturally, lie down easily, turn around, groom themselves and assume all natural postures and movements such as stretching, and wing flapping
- c) where animals require bedding, adequate natural materials are provided
- d) that construction provides for ventilation of the building, that permits air circulation, dust levels, temperature, relative air humidity, and gas concentrations to within levels that are not harmful to the livestock
- e) that poultry, rabbits and pigs shall not be kept in cages
- f) that animals are protected from predation by wild and feral animals

#### 6.1.5

Landless animal husbandry systems are prohibited.

#### 6.1.6

All animals shall have access to pasture or an open-air exercise area or run, whenever the physiological condition of the animal, the weather and the state of the ground permit. Such areas may be partially covered.

#### 6.1.7

Animals may be temporarily confined because of inclement weather or absences of pasture due to temporary or seasonal conditions. Such animals shall still have access to an outdoor run.

#### 6.1.8

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.

#### 6.1.9

In organic stock-farming, all livestock on one and the same production unit shall be reared in accordance with these standards.

#### 6.1.10

Livestock not reared in accordance with these standards may be present on the holding provided they are reared on units where the buildings and parcels are separated clearly from the units producing in accordance with these standards, and a different species is involved.

The sharing of pasturage with livestock not reared in accordance with these standards shall be limited to 90 days per calendar year, provided that such animals come from husbandry in keeping with the grazing density requirements of these standards, and do not share the pasturage at the same time as livestock being reared according to these standards.

#### 6.1.11

Where livestock is reared on common land, the following shall apply:

- a) the land shall not have been treated with products other than those allowed for in Appendix 1, for at least three years;
- b) any other animals which use the land concerned, are derived from extensive production with a stocking density where the number of animals per hectare corresponds to 170 kg of Nitrogen per year/hectare.
- c) any livestock products produced by animals reared whilst using this land, shall not be regarded as being from organic production, unless adequate segregation from other animals not reared in accordance with these standards can be proved to the satisfaction of the certification body.

#### 6.1.12

The maximum hours of artificial light used to prolong natural day-length shall not exceed a maximum that respects the natural behaviour, geographical conditions and general health of the animals.

## 6.2 Length of Conversion Period

### 6.2.1

Animal products may be sold as "product of organic agriculture" only after the land and animals have all met the appropriate established conversion requirements. Management of the land, or relevant part of it, shall be subject to the requirement under 3.1 prior to animal products being considered organic.

### 6.2.

Land and animals shall be converted simultaneously, and shall satisfy the minimum conversion periods stipulated for both land and animals. With regard to dairy and egg production this period shall be at least 30 days

### 6.2.3

Animals on a farm that is converting to organic production may undergo a one-time minimum conversion period according to the following schedule and type of the production:

### 6.2.4

Conversion period:

- bovines 12 months
- small ruminants 6 months
- pigs 4 months
- broilers 10 weeks
- layers 6 weeks

## 6.3 Animals Sources/ Origin

### 6.3.1

Livestock products that are to be sold, labelled, or represented as organic shall be from livestock under continuous organic management from the last third of gestation or hatching.

### 6.3.2

Livestock used as breeder stock may be brought from a non-organic operation onto an organic operation at any time. Provided that, if such livestock are gestating and the offspring are to be raised as organic livestock, the breeder stock shall be brought onto the facility no later than the last third of gestation.

The following are prohibited:

- a) Livestock or edible livestock products that are removed from an organic operation and subsequently managed on a non-organic operation may be not sold, labelled, or represented as organically produced.
- a) Breeder or dairy stock that has not been under continuous organic management since the last third of gestation may not be sold, labelled, or represented as organic slaughter stock.

### 6.3.3

Where livestock is obtained from non-organic operations, special attention shall be paid to animal health measures.

The certification body may apply, depending on local circumstances, special measures, such as screening tests, and quarantine periods.

### 6.3.4

When organic livestock is not available conventional animals may be brought in according to the following age limits:

- 2 day old chickens for meat production
- 18 week old hens for egg production
- 2 weeks for any other poultry
- piglets up to 6 weeks and after weaning
- dairy calves up to 4 weeks old that have received colostrum and are fed a diet consisting mainly of full milk.

### 6.3.5

Breeding stock may be brought in from conventional farms subject to a maximum of 10 % of adult equine or bovine (including *bubalus* and bison species) livestock and 20 % of the adult porcine, ovine and caprine livestock, livestock may be brought in, as female (nulliparous) animals, from non organic production stockfarms per year, for supplementing natural growth and for the renewal of the herd or flock, when organically reared animals are not available, and only when authorised by JOAM. Provided, that, if such livestock are gestating and the offspring are to be raised as organic livestock, the breeder stock shall be brought onto the facility no later than the last third of gestation.

### 6.3.6

Exceptions may be granted by JOAM for breeding stock to exceed 10% of the adult animals, but shall be limited to circumstances of:

- a) unforeseen severe natural or man made events
- b) considerable enlargement of the farm
- c) establishment of a new type of animal production on the farm
- d) holdings with less than 10 animals

### 6.3.7

Males for breeding may be brought in from non organic-production stock-farms provided that the animals are subsequently reared and always fed in accordance with these standards.

## 6.4 Breeds and Breeding

### 6.4.1

Breeding systems shall be based on breeds that can reproduce successfully under natural conditions without human involvement. Breeds have to be well adapted to organic production methods.

Breeds or strains of animals shall be selected to avoid specific diseases or health problems associated with some breeds or strains used in intensive production (e.g. porcine stress syndrome, PSE Syndrome, sudden death, spontaneous abortion, difficult births requiring caesarean operations, etc.). Preference is to be given to indigenous breeds and strains.

### 6.4.2

Artificial insemination is permitted.

### 6.4.3

Embryo transfer techniques and cloning are prohibited.

### 6.4.4

The use of substances to promote growth or production, (including antibiotics, coccidiostatics and other artificial aids for growth promotion purposes) and the use of hormones or similar substances to control reproduction (e.g. induction or synchronisation of oestrus), or for other purposes, is prohibited. Nevertheless, hormones may be administered to an individual animal, as a form of therapeutic veterinary treatment.

## 6.5 Feed

### 6.5.1

Feed shall ensure quality production rather than maximising production, while meeting the nutritional requirements of the livestock at various stages of their development.

### 6.5.2

Authorized fattening practices shall be reversible at any stage of the rearing process. Force-feeding is forbidden.

### 6.5.3

Animals shall be fed organic feed.

### 6.5.4

The prevailing part (at least 50%) of the feed shall come from the farm unit itself or be produced in co-operation with other organic farms in the region.

The certification body may allow exceptions with regard to local and regional conditions, and shall set a time limit.

### 6.5.5

For the calculation of feeding allowances only, feed produced on the farm unit during the first year of organic management, may be classed as organic. This refers only to feed for animals that are being produced within the farm unit. Such feed shall not be sold or otherwise marketed as organic.

### 6.5.6

Up to 30 % of the feed formula of rations on average may comprise in conversion feeding stuffs. When the in-conversion feeding stuffs come from the farm unit, this percentage can be increased to 60 %.

### 6.5.7

Young stock from mammals shall be provided maternal milk or organic milk from their own species and shall be weaned only after a minimum time that takes into account the natural behaviour of the relevant animal species, which shall be three months for bovines (including *bubalus* and bison species) and equidae, 45 days for sheep and goats and 40 days for pigs.

6.5.8

Non-organic milk shall only be substituted by operators when organic milk is not available.

6.5.9

Operators shall provide milk substitutes only in emergencies, provided that they do not contain antibiotics, synthetic additives or slaughter products

6.5.10

Rearing systems for herbivores shall be based on the maximum use of pasturage according to the availability of pastures in the different periods of the year. At least 60 % of the dry matter in daily rations shall consist of roughage, fresh or dried fodder, or silage. The certification body may permit a reduction to 50 % for animals in dairy production for a maximum period of three months in early lactation.

6.5.11

Operators may feed a limited percentage of non-organic feed under specific conditions for a limited time in the following cases:

- organic feed is of inadequate quantity or quality
- areas where organic agriculture is in early stages of development

The maximum percentage of conventional feeding stuffs authorised per year is 10 % in the case of herbivores and 20 % for other species. These figures shall be calculated annually as a percentage of the dry matter of feeding stuffs from agricultural origin. The maximum percentage authorised of conventional feeding stuffs in the daily ration, except during the transhumance period, shall be 25 %, calculated as a percentage of the dry matter.

6.5.12

Operators may feed a limited percentage of non-organic feed under specific conditions for a limited time in the following cases:

- unforeseen severe natural or man-made events
- extreme climatic or weather conditions

The prevailing part (50% at a minimum) of the feed shall come from the farm unit itself or be produced in co-operation with other organic farms in the region.

The certification body may allow exceptions with regard to local and regional conditions, subject to a set time limit.

6.5.13

For poultry, the feed formula used in the fattening stage shall contain at least 65 % cereals.

6.5.14

All ruminants shall have daily access to roughage.

6.5.15

Fodder preservatives such as the following may be used:

- bacteria, fungi and enzymes
- by-products of food industry (e.g. molasses)
- plant based products

Synthetic chemical fodder preservatives such as acetic, formic and propionic acid and vitamins and minerals are permitted in severe weather conditions.

6.5.16

Conventional feed materials of agricultural origin shall be used for animal feeding only if listed in Appendix 3 (feed materials from plant origin), subject to the quantitative restrictions imposed in this appendix, and only if they are produced or prepared without the use of chemical solvents.

6.5.17

Feed materials from animal origin (whether conventional or organically produced) can only be used if listed in Appendix 4, and subject to the quantitative restrictions imposed in this appendix.

#### 6.5.18

Animals shall only be fed vitamins, trace elements and supplements from natural sources. Synthetic vitamins, minerals and supplements may be used when natural sources are not available in sufficient quantity and quality. Only products listed in Appendix 3 may be used for animal feeding.

#### 6.5.19

The following substances are prohibited in the diet:

- a) farm animal by-products (e.g. abattoir waste) to ruminants
- b) all types of excrements including droppings, dung or other manure (all types of excrements)
- c) feed subjected to solvent extraction (e.g. hexane) or the addition of other chemical agents
- d) amino acid isolates
- e) urea and other synthetic nitrogen compounds
- f) synthetic growth promoters or stimulants
- g) synthetic appetizers
- h) preservatives, except when used as a processing aid
- i) artificial colouring agents.
- j) plastic pellets for roughage

#### 6.5.20

Antibiotics, coccidiostatics, medicinal substances, growth promoters or any other substance intended to stimulate growth or production shall not be used in animal feeding.

#### 6.5.21

Feeding stuffs, feed materials, compound feeding stuffs feed additives, processing aids for feeding stuffs and certain products used in animal nutrition shall not have been produced with the use of genetically modified organisms or products derived therefrom.

### 6.6 Livestock Manure

#### 6.6.1

The total amount of manure applied on the holding shall not exceed 170 kg of Nitrogen per year/ hectare of agricultural area used. Where necessary, the total stocking density shall be reduced to avoid exceeding this limit.

#### 6.6.2

Organic-production holdings may establish cooperation exclusively with other organically managed holdings and enterprises, with the intention of spreading surplus manure from organic production. The maximum limit of 170 kg of Nitrogen from manure per year/hectare of agricultural area used should be calculated on the basis of all of the organic-production units involved in such cooperation.

#### 6.6.3

Operators should establish lower limits than those specified in paragraph 6.6.1, taking into account the characteristics of the area concerned, the application of other nitrogen fertilisers to the land and the nitrogen supply to the crops from the soil.

#### 6.6.4

Storage facilities for livestock manure shall be of a capacity to preclude the pollution of water by direct discharge, or by run-off and infiltration of the soil.

#### 6.6.5

To ensure sound fertiliser management, the capacity of such storage facilities for livestock manure shall exceed the storage capacity required for the longest period of the year in which any application of fertiliser to

the land is either inappropriate, or when such application is prohibited in cases where the production unit is located within a designated nitrate vulnerable zone.

## 6.7 Free Range Areas and Livestock Housing

### 6.7.1

Housing conditions for livestock shall meet the livestock's biological and ethological needs (e.g. behavioural needs as regards appropriate freedom of movement and comfort). The livestock shall have access to feeding and watering. Ventilation of the buildings shall ensure that air circulation, dust level, temperature, relative air humidity and gas concentration, are kept within limits which are not harmful to the animals. The buildings shall permit plentiful natural ventilation and light to enter.

### 6.7.2

Free-range, open-air exercise areas, or open-air runs shall provide sufficient protection against rain, wind, sun and extreme temperatures, depending on the local weather conditions and the breed concerned.

### 6.7.3

Housing for livestock shall not be mandatory in areas with appropriate climatic conditions to enable animals to live outdoors.

### 6.7.4

The stocking density in buildings shall provide for the comfort and well being of the animals, which, in particular, shall depend on the species, the breed and the age of the animals. It shall also take account of the behavioural needs of the animals, which depend in particular on the size of the group and the animals' sex. The optimum density should seek to ensure the animals' welfare by providing them with sufficient space to stand naturally, lie down easily, turn round, groom themselves, assume all natural postures and make all natural movements such as stretching and wing flapping.

### 6.7.5

The minimum surface areas for indoor housing and outdoor exercise areas, and other characteristics of housing for different species and categories of animals, shall be as laid down in Section C of these standards.

### 6.7.6

The outdoor stocking density of livestock kept on pasturage, other grassland, heathland, wetland, heather, and other natural or semi-natural habitats, shall be low enough to prevent poaching of the soil and over grazing of vegetation.

### 6.7.7

Housing, pens, equipment and utensils shall be properly cleaned and disinfected to prevent cross-infection and the build-up of disease carrying organisms. Only the products listed in Appendix 5b shall be used for such cleaning and disinfection of livestock buildings and installations. Faeces, urine and uneaten or spilt food shall be removed as often as necessary to minimise smell and to avoid attracting insects or rodents. Only the products listed in Appendix 5b shall be used for the elimination of insects and other pests in buildings and other installations where livestock is kept.

## 6.8 Housing & Rearing of Mammals

### 6.8.1

All mammals shall have access to pasturage or an open-air exercise area or an open-air run which may be partially covered, and they shall be able to use those areas whenever the physiological condition of the animal, the weather conditions and the state of the ground permit. Herbivores shall have access to pasturage whenever conditions allow.

### 6.8.2

Bulls over one year old shall have access to pasturage or an open-air exercise area or an open-air run.

### 6.8.3

If the final fattening phase of cattle, pigs and sheep for meat production takes place indoors, this indoors period shall not exceed the lesser of one fifth of their lifetime or three months.

### 6.8.4

Livestock housing shall have smooth, but not slippery floors. At least half of the total floor area shall be solid, that is, not of slatted or of grid construction.

### 6.8.5

The housing shall be provided with a comfortable, clean and dry laying/rest area of sufficient size, consisting of a solid construction that is not slatted. Ample dry bedding strewn with litter material shall be provided in the rest area. The litter shall comprise straw or other suitable natural material. The litter may be improved and enriched with any mineral product authorised for use as a fertiliser in organic farming in accordance with Appendix 1.

### 6.8.6

The housing of calves in individual boxes is forbidden after the age of one week.

### 6.8.7

Housing of pigs shall comply with the minimum requirements set out in Section C of these standards. Sows shall be kept in groups, except in the last stages of pregnancy and during the suckling period. Piglets shall not be kept on flat decks or in piglet cages.

Exercise areas shall permit dunging and rooting by the animals. For the purposes of rooting different substrates can be used.

## 6.9 Housing & Rearing of Poultry

### 6.9.1

Poultry shall be reared in open-range conditions and shall not be kept in cages.

### 6.9.2

Waterfowl shall have access to a stream, pond or lake whenever the weather conditions permit in order to respect animal welfare requirements or hygienic conditions.

### 6.9.3

Buildings for all poultry shall meet the following minimum conditions:

- a) at least one third shall be solid, that is, not of slatted or of grid construction, and covered with a litter material such as straw, wood shavings, sand or turf;
- b) in poultry houses for laying hens, a sufficiently large part of the floor area available to the hens shall be available for the collection of bird droppings
- c) they shall have perches of a size and number commensurate with the size of the group and of the birds as laid down in section C of these standards.

- d) they shall have exit/entry pop-holes of a size adequate for the birds, and these pop-holes shall have a combined length of at least 4 m per 100 m<sup>2</sup> area of the house available to the birds
- e) each poultry house shall not contain more than:
  - 4,800 chickens,
  - 3,000 laying hens,
  - 5,200 guinea fowl,
  - 4,000 female Muscovy or Peking ducks or 3,200 male Muscovy or Peking ducks or other ducks,
  - 2,500 capons, geese or turkeys
- f) the total usable area of poultry houses for meat production on any single production unit, shall not exceed 1,600 m<sup>2</sup>

#### 6.9.4

In the case of laying hens natural light may be supplemented by artificial means to provide a maximum of 16 hours light per day. The continuous nocturnal rest period without artificial light shall be at least eight hours.

#### 6.9.5

Poultry shall have access to an open-air run whenever the weather conditions permit and, whenever possible, shall have such access for at least one third of their life. These open-air runs shall be mainly covered with vegetation, be provided with protective facilities, and permit animals to have easy access to adequate numbers of drinking and feeding troughs.

#### 6.9.6

For health reasons, buildings shall be emptied of livestock between each batch of poultry reared. The buildings and fittings shall be cleaned and disinfected during this time. In addition, when the rearing of each batch of poultry has been completed, runs shall be left empty to allow vegetation to grow back, and for health reasons.

#### 6.9.7

These requirements shall not apply to small numbers of poultry which are not kept in runs and which are free to roam, throughout the day.

### 6.10 Mutilation & Restriction of movement

#### 6.10.1

Mutilations are prohibited.

#### 6.10.2

The following exceptions shall be used only for reasons of safety (e.g. dehorning in young animals) or if they are intended to improve the health, welfare or hygiene of the livestock. Animal suffering shall be minimised and anaesthetics used where appropriate:

- Castrations
- tail docking of lambs
- dehorning
- ringing
- mulesing only for breed that require mulesing

#### 6.10.3

Physical castration is allowed in order to maintain the quality of products and traditional production practices (meat-type pigs, bullocks, capons, etc.). Such operations shall be carried out at the most appropriate age by qualified personnel and any suffering to the animals shall be reduced to a minimum.

#### 6.10.4

Livestock shall not be continuously tethered. The certification body may authorise this practice for individual animals upon justification by the operator, that this is necessary for safety or welfare reasons, and that such tethering is only for a limited period of time.

#### 6.10.5

Cattle in small holdings may be tethered if it is not possible to keep the cattle in groups appropriate to their behaviour requirements, provided they have at least twice a week access to pastures, open air runs or exercise areas.

#### 6.10.6

Where livestock are reared in groups, the size of the group shall depend upon their stage of development and the behavioural needs of the species concerned. The keeping of livestock in conditions, or on a diet, which may encourage anaemia, is prohibited.

### 6.11 Veterinary medicine

#### 6.11.1

The operator shall take all practical measures to ensure the health and well being of the animals through preventative animal husbandry practices.

#### 6.11.2

If an animal becomes sick or injured despite preventative measures that animal shall be treated promptly and adequately, if necessary in isolation and in suitable housing. Producers shall not withhold medication where it will result in unnecessary suffering of the livestock, even if the use of such medication will cause the animal to lose its organic status.

#### 6.11.3

The use of veterinary medicinal products in organic farming shall comply with the following principles:

- a) Phytotherapeutic (e.g. plant extracts (excluding antibiotics), essences, etc.), homeopathic products (e.g. plant, animal or mineral substances) and trace elements and products listed in Appendix 5b, shall be used in preference to chemically synthesised allopathic veterinary medicinal products or antibiotics, provided that their therapeutic effect is effective for the species of animal, and the condition for which the treatment is intended;
- b) If the use of the above products should not prove, or is unlikely to be, effective in combating illness or injury, and treatment is essential to avoid suffering or distress to the animal, chemically synthesised allopathic veterinary medicinal products or antibiotics may be used under the responsibility of a veterinarian;
- c) The use of chemically synthesised allopathic veterinary medicinal products or antibiotics for preventive treatments is prohibited;

#### 6.11.4

Substances of synthetic origin used to stimulate production or suppress of natural growth are prohibited

#### 6.11.5

Vaccinations are allowed with the following limitations:

- a) when an endemic disease is known or expected to be a problem in the region of the farm and where this diseases cannot be controlled by other management techniques; or
- b) when a vaccination is legally required, and
- c) the vaccine is not genetically engineered

6.11.6

Whenever veterinary medicinal products are used the type of product shall be recorded clearly, (including an indication of the active pharmacological substances involved) together with details of the diagnosis; the posology; the method of administration; the duration of the treatment, and the legal withdrawal period. This information shall be declared to the certification body before the livestock or livestock products are marketed as organically produced. Livestock treated shall be clearly identified: individually in the case of large animals; individually or by batch, in the case of poultry and small animals.

6.11.7

Withholding periods shall be not less than double of that required by legislation, or a minimum of 48 hours, whichever is longer.

6.11.8

With the exception of vaccinations, treatments for parasites and any compulsory governmental eradication schemes, where an animal or group of animals receive more than two or a maximum of three courses of treatments with chemically-synthesised allopathic veterinary medicinal products or antibiotics within one year (or more than one course of treatment if their productive lifecycle is less than one year) the livestock concerned, or produce derived from them, shall not be sold as organic products, and the livestock shall undergo the conversion periods stipulated in paragraph 6.2.4, subject to the agreement of the certification body.

6.11.9

Substances of synthetic origin used to stimulate production or suppress natural growth are prohibited

## 6.12 Transport and Slaughter

6.12.1

Animals shall be handled calmly and gently during transport and slaughter

6.12.2

The use of electric prods and other such instruments is prohibited.

6.12.3

Organic animals shall be provided with conditions during transportation and slaughter that reduce and minimise the adverse effects of:

- stress
- loading and unloading
- mixing different groups of animals or animals of different sex
- quality and suitability of mode of transport and handling equipment
- temperatures and relative humidity
- hunger and thirst; and
- the specific needs of each animal

6.12.4

Animals shall not be treated with synthetic tranquillisers or stimulants prior to or during transport.

6.12.5

Each animal or group of animals shall be identifiable at each step in the transport and slaughter process.

6.12.6

Slaughterhouse journey times shall not exceed eight hours.

6.12.7

When there is no certified organic slaughterhouse within eight hours travel time, the certification body may allow extended travel, provided that travel conditions are appropriate for the extended duration of travel.

6.12.8

For poultry, the minimum age at slaughter shall be:

- 81 days for chickens,
- 150 days for capons,
- 49 days for Peking ducks,
- 70 days for female Muscovy ducks,
- 84 days for male Muscovy ducks,
- 92 days for Mallard ducks,
- 94 days for guinea fowl,
- 140 days for turkeys and roasting geese.

Where producers do not apply these minimum slaughter ages, they shall use slow-growing strains.

## 7.0 Processing and Handling

### 7.1 General

#### 7.1.1

Handlers and processors shall not co-mingle organic products with non-organic products.

#### 7.1.2

All organic products shall be clearly identified as such, and stored and transported in a way that prevents contact with conventional product through the entire process.

#### 7.1.3

The handler and processor shall take all necessary measures to prevent organic products from being contaminated by pollutants and contaminants, including the cleaning, decontamination, or if necessary disinfection of facilities and equipment.

### 7.2 Ingredients

#### 7.2.1

All ingredients used in an organic processed product shall be organically produced except for those additives and processing aids that appear in Appendix 5a and non-organically produced ingredients that are in compliance with the labelling provisions.

#### 7.2.2

In cases where an ingredient of organic origin is unavailable in sufficient quality or quantity, JOAM may authorise use of non-organic raw materials subject to periodic review and re-evaluation. These materials shall not be genetically engineered

#### 7.2.3

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.

#### 7.2.4

Flavouring additive shall be from nonsynthetic sources only and shall not be produced using synthetic solvents and carrier systems or any artificial preservative.

#### 7.2.5

Any processing practice, such as smoking, shall be carried out and any ingredient or such processing aid shall be used only in accordance with relevant national legislation and, in the absence thereof, in accordance with the principles of good manufacturing practice for foodstuffs.

Processing practices shall be documented.

#### 7.2.6

Minerals (including trace elements), vitamins and similar isolated ingredients shall not be used unless their use is legally required or where severe dietary or nutritional deficiency can be demonstrated.

#### 7.2.7

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

#### 7.2.8

Processors shall use microorganisms grown on substrates that consist entirely of organic ingredients and substances on Appendix 5a, if available. This includes cultures that are prepared or multiplied in-house.

## 7.3 Processing Methods

### 7.3.1

Techniques used to process organic food shall be biological, physical, and mechanical in nature.

### 7.3.2

Any additives, processing aids, or other substances that chemically react with or modify organic foods shall comply with the requirements of Appendix 5a.

### 7.3.3

Extraction shall only take place with water, ethanol, plant and animal oils, vinegar, carbon dioxide, and nitrogen. These shall be of a quality appropriate for their purpose.

### 7.3.4

Irradiation is not permitted.

### 7.3.5

Filtration techniques that chemically react with or modify organic food on a molecular basis shall be restricted. It shall be carried out by the restriction of permitted filtration techniques and materials (e.g. certain ion exchange resins and absorption techniques).

### 7.3.6

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

### 7.3.7

The following conditions of storage are permitted:

- controlled atmosphere
- temperature control
- drying
- humidity regulation

### 7.3.8

Ethylene gas is permitted for ripening.

## 7.4 Pest and Disease Control

### 7.4.1

A handler or processor shall manage pests using the following methods according to these priorities:

- a) Removal of pest habitat, food sources, and breeding areas;
- b) Prevention of access to handling facilities;
- c) Management of environmental factors, such as temperature, light, humidity, atmosphere, and air circulation, to prevent pest reproduction;
- d) Use of mechanical or physical controls including but not limited to traps, light, or sound;
- e) Use of lures and repellents using nonsynthetic or synthetic substances consistent with Appendix 2

### 7.4.2

If the practices provided for in paragraphs 7.4.1(a) through (e) of this section are not effective to prevent or control pests, a nonsynthetic or synthetic substance consistent with Appendix 5b may be applied.

#### 7.4.3

Prohibited pest control practices include, but are not limited to, the following substances and methods:

- pesticides not contained in Appendix 2
- fumigation with ethylene oxide, methyl bromide, aluminium phosphide or other
- substance not contained in Appendix 5b
- ionizing radiation

The direct use or application of a prohibited method or material shall render that product no longer organic.

#### 7.4.4

The operator shall take necessary precautions to prevent contamination, including the removal of organic product from the storage or processing facility, and measures to decontaminate the equipment or facilities.

#### 7.4.5

Any operator who applies a nonsynthetic or synthetic substance to prevent or control pests shall update the operation's organic handling plan to reflect the use of such substances and methods of application. The updated organic plan shall include a list of all measures taken to prevent contact of the organically produced products or ingredients with the substance used.

#### 7.4.6

When required by local regulations, any application of prohibited substances to equipment or facilities shall not contaminate organic product handled or processed therein.

### 7.5 Cleaning, Disinfecting, and Sanitizing

#### 7.5.1

Operators shall take all necessary precautions to protect organic food against contamination by substances prohibited in organic farming and handling, pests, disease-causing organisms, and foreign substances.

#### 7.5.2

Only water and substances that appear in Appendix 5b may be used in direct contact with organic food.

#### 7.5.3

Operations that use cleaners, sanitizers, and disinfectants on food contact surfaces shall use them in a way that maintains the food's organic integrity.

#### 7.5.4

The operator is required to perform an intervening event between the use of any cleaner, sanitizer, or disinfectant and the contact of organic food with that surface, unless the substance is otherwise noted in Appendix 5b.

#### 7.5.5

Acceptable intervening events include a hot-water rinse, a sufficient flush of organic product that is not sold as organic, or adequate time for the substance to volatilise.

#### 7.5.6

Operators shall prevent the residues of boiler water additives from direct contact with organic food by the use of entrained water, filters, traps, or other means that prevent steam in contact with organic foods from carrying such compounds.

## 7.6 Packaging

### 7.6.1

Packaging material shall not contaminate organic food.

### 7.6.2

Packaging materials, and storage containers, or bins that contain a synthetic fungicide, preservative, or fumigant are prohibited.

### 7.6.3

Organic produce shall not be packaged in reused bags or containers that have been in contact with any substance likely to compromise the organic integrity of product or ingredient placed in those containers.

## 8.0 Labelling

### 8.1 Organic Product Labelling

#### 8.1.1

Organic products shall be clearly and accurately labelled as organic.

#### 8.1.2

Products for export, produced and certified to foreign national organic standards or foreign contract buyer requirements, may be labelled in accordance with the organic labelling requirements of the receiving country or contract buyer: Provided, that, the shipping containers and shipping documents meet the labelling requirements specified in these standards.

#### 8.1.3

The person or company legally responsible for the production or processing of the product shall be identifiable.

#### 8.1.4

The labelling and advertising of a product may refer to organic production methods only where:

- a) such indications show clearly that they relate to a method of agricultural production;
- b) the product was produced in accordance with these standards or imported from a third country having an organic certification programme in place;
- c) the product was produced or imported by an operator who is subject to the Jamaican inspection measures.

### 8.2 Mixed Products Labelling

#### 8.2.1

Mixed products where not all ingredients, including additives, are of organic origin and products that are entirely in compliance with these standards shall be labelled in the following way (percentages in this section refer to raw material weight):

#### 8.2.2

Where a minimum of 95% of the ingredients are of certified organic origin, products may be labelled "certified organic" or similar and may carry the certification mark of JOAM. Provided that:

- a) all the other ingredients of agricultural origin of the product shall be from those listed in Appendix 5a.,
- b) the product shall contain only substances listed in Appendix 5a, as ingredients of non-agricultural origin,
- c) the products or its ingredients of agricultural origin shall not have been subjected to treatments involving the use of substances not listed in Appendix 5a.
- d) the product or its ingredients shall not have been subjected to treatments involving the use of ionizing radiation
- e) the product shall have been prepared or imported by an operator who is subject to the inspection measures consistent with these standards.
- f) the labelling shall refer to the name and/or the code number of the certification body to which the operator who has carried out the most recent preparation operation is subject.
- g) The indications referring to organic production methods shall make it clear that they relate to a method of agricultural production and shall be accompanied by a reference to the ingredients of agricultural origin concerned, unless such reference is clearly given in the list of ingredients.
- h) the product shall have been produced without the use of genetically modified organisms and/or any products derived from such organisms.

8.2.3

Where less than 95% but not less than 70% of the ingredients are of certified organic origin, products shall not be called "organic". The word "organic" shall only be used on the principal display in statements such as "made with organic ingredients" provided there is a clear statement of the proportion of the organic ingredients.

8.2.4

Any indication that the product is certified in accordance with these JOAM standards shall be shown in close proximity to the indication of proportion of organic ingredients.

Such indications shall appear in the same colour and with an identical size and style of lettering as the other indications in the list of ingredients. Such indications shall also appear in a separate statement set in the same visual field as the sales description and indicating the percentage of the ingredients in the product.

The statement shall be in the following form: 'X % of the agricultural ingredients were produced in accordance with the rules of organic production'.

8.2.5

Where less than 70% of the ingredients are of certified organic origin and have been handled in accordance with these standards, the indication that an ingredient is organic may appear in the ingredient list. Such product shall not be called "organic".

8.2.6

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 certified origin and which are not. All additives shall be listed with their full name.

8.2.7

Multi-ingredient products shall not include organic and non-organic forms of the same ingredient.

8.2.8

A raw or processed livestock feed product sold, labelled, or represented as "100 percent organic", shall contain (by weight or fluid volume, excluding water and salt) not less than 100 percent organically produced raw or processed agricultural product. Such feed product shall have been produced and handled in accordance with these standards.

8.2.9

Added water and salt shall not be included in the percentage calculations of organic ingredients.

8.2.10

The percentage of all organically produced ingredients in an agricultural product sold, labelled, or represented as "100 percent organic," "organic," or "made with organic (specified ingredients or food group(s))," or that include organic ingredients shall be calculated as follows:

- a) The total net weight (excluding water and salt) of combined organic ingredients at formulation shall be divided by the total weight (excluding water and salt) of the finished product.
- b) Where product and its ingredients are liquid, the fluid volume of all organic ingredients (excluding water and salt) shall be divided by the fluid volume of the finished product (excluding water and salt).
- c) Where the liquid product is identified on the principal display panel or information panel as being reconstituted from concentrates, the calculation shall be made on the basis of single-strength concentrations of the ingredients and finished product.
- d) Where products contain organically produced ingredients in both solid and liquid form, the combined weight of the solid ingredients and the weight of the liquid ingredients (excluding water and salt) shall be divided by the total weight (excluding water and salt) of the finished product.
- e) The percentage of all organically produced ingredients in an agricultural product shall be rounded down to the nearest whole number.
- f) 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.

### 8.2.11

The percentage shall be determined by the operator who affixes the label on the consumer package and shall be verified by the certification body of that operator. The operator may use information provided by the certified production operation in determining the percentage.

## 8.3 Labelling of conversion products

### 8.3.1

The label for conversion products shall be clearly distinguishable from the label for organic products.

### 8.3.2

Crop products shall bear indications referring to conversion to the organic production method only where:

- a) the requirements of these standards are fully satisfied, with the exception of those concerning the length of the conversion period,
- b) a conversion period of at least 12 months before the harvest has been complied with
- c) such indications do not mislead the purchaser of the product regarding its difference from products that satisfy all the requirements of these standards.
- d) such indications take the form of the words 'product under conversion to organic farming', and appear in a colour, size and style of lettering which is not more prominent than the sales description of the product; in this indication the words 'organic farming' shall not be more prominent than the words 'product under conversion to'.
- e) the product contains only one crop ingredient of agricultural origin.
- f) the labelling refers to the name and/or the code number of the certification body to which the operator who has carried out the most recent production or preparation operation is subject.
- g) the product has been produced without the use of genetically modified organisms and/or any products derived from such organisms.

### 8.3.3

The product labels of JOAM certified products shall only bear JOAM's seal, where this is agreed upon in the contract with the certification body. JOAM retains the right to withdraw the permission to use its seal in case of non-compliance with its standards.

## 8.4 Labelling for types of packaging

### 8.4.1

Packages containing not less than 95% organically produced raw or processed agricultural products may display, on the principal display panel, information panel, and any other panel of the package and on any labelling or market information concerning the product, the following:

- a) The term, "100 percent organic" or "organic," as applicable, to modify the name of the product;
- b) For products labelled "organic," the percentage of organic ingredients in the product; (The size of the percentage statement shall not exceed one-half the size of the largest type size on the panel on which the statement is displayed and shall appear in its entirety in the same type size, style, and colour without highlighting.)
- c) The term, "organic," to identify the organic ingredients in multi-ingredient products labelled "100 percent organic";
- d) The JOAM logo or seal; and/or
- e) The seal, logo, or other identifying mark of the certification body which certified the production or handling operation producing the finished product and any other certifying agent which certified production or handling operations producing raw organic product or organic ingredients used in the finished product:

#### 8.4.2

The operator producing the finished product shall maintain records, in accordance with these standards, verifying organic certification of the operations producing such ingredients.

#### 8.4.3

Packaging containing products labelled “organic,” shall identify each organic ingredient in the ingredient statement with the word, “organic,” or with an asterisk or other reference mark, which shall be defined below the ingredient statement to indicate the ingredient is organically produced. Water or salt included as ingredients shall not be identified as organic.

#### 8.4.4

Packaging of such product shall identify the name of the certification body that certified the handler of the finished product. This identification shall be on the information panel, below the information identifying the handler or distributor of the product and preceded by the statement, “Certified organic by...” or similar phrase. The packaging may display the business address, Internet address, or telephone number of the certifying agent in such label.

#### 8.4.5

Packaged products labelled “made with organic (specified ingredients or food group(s)).” shall display on the principal display panel, information panel, and any other panel and on any labelling or market information concerning the product:

- a) The statement:
  - (i) “Made with organic (specified ingredients)”: Provided, That, the statement does not list more than three organically produced ingredients; or
  - (ii) “Made with organic (specified food groups)”: Provided, That, the statement does not list more than three of the following food groups: beans, fish, fruits, grains, herbs, meats, nuts, oils, poultry, seeds, spices, sweeteners, and vegetables or processed milk products; and, Provided Further, That, all ingredients of each listed food group in the product shall be organically produced; and
  - (iii) Which appears in letters that do not exceed one-half the size of the largest type size on the panel and which appears in its entirety in the same type size, style, and colour without highlighting.
- b) The percentage of organic ingredients in the product. The size of the percentage statement shall not exceed one-half the size of the largest type size on the panel on which the statement is displayed and shall appear in its entirety in the same type size, style, and colour without highlighting.
- c) The seal, logo, or other identifying mark of the certification body that certified the handler of the finished product.

#### 8.4.6

Packaging containing less than 95% but at least 70% organically produced ingredients:

- a) Shall identify in the ingredient statement, each organic ingredient with the word, “organic,” or with an asterisk, or other reference mark, which shall be defined below the ingredient statement to indicate the ingredient is organically produced. Water or salt, if included as ingredients, shall not be identified as organic.
- b) Shall, on the information panel, below the information identifying the handler or distributor of the product and preceded by the statement, “Certified organic by...” or similar phrase, identify the name of the certification body that certified the handler of the finished product: The business address, Internet address, or telephone number of the certifying agent may be included in such label.

#### 8.4.7

Packaged product containing less than 95% organically produced ingredients shall not display the JOAM logo or seal.

#### 8.4.8

Multi-ingredient packaged products with less than 70% organically produced ingredients shall identify the organic content of the product only as follows:

- a) The packaging shall identify each organically produced ingredient in the ingredient statement with the word, "organic," or with an asterisk or other reference mark which is defined below the ingredient statement to indicate the ingredient is organically produced.
- b) Where the organically produced ingredients are identified in the ingredient statement, the packaging shall display the product's percentage of organic contents on the information panel.

#### 8.4.9

Agricultural products with less than 70% organically produced ingredients shall not display:

- a) either the JOAM logo or seal, or
- b) any certification body's seal, logo or other identifying mark which represents organic certification of a product or product ingredients.

#### 8.4.10

Raw or processed livestock feed product sold, labelled or represented as either "100% organic" or "organic" may display on any package panel the following terms:

- a) The statement, "100 percent organic" or "organic," as applicable, to modify the name of the feed product;
- b) The JOAM logo or seal;
- c) The seal, logo, or other identifying mark of the certification body which certified the production or handling operation producing the raw or processed organic ingredients used in the finished product;
- d) The word, "organic," or an asterisk or other reference mark that is defined on the package to identify ingredients that are organically produced. Water or salt included as ingredients shall not be identified as organic.

#### 8.4.11

Such packaging shall display the name of the certification body that certified the handler of the finished product. This shall be displayed on the information panel, below the information identifying the handler or distributor of the product and preceded by the statement, "Certified organic by..." or similar phrase.

The business address, Internet address, or telephone number of the certifying agent may be included.

#### 8.4.12

Non-retail containers used only to ship or store raw or processed agricultural product labelled as containing organic ingredients may display the following terms or marks:

- a) The name and contact information of the certification body which certified the handler which assembled the final product;
- b) Identification of the product as organic;
- c) Special handling instructions needed to maintain the organic integrity of the product;
- d) The JOAM logo or seal;
- e) The seal, logo, or other identifying mark of the certification body that certified the organic production or handling operation that produced or handled the finished product.

#### 8.4.13

Non-retail containers used to ship or store raw or processed agricultural product labelled as containing organic ingredients shall display the production lot number of the product if applicable.

#### 8.4.14

Shipping containers of domestically produced product labelled as organic intended for export to international markets may be labelled in accordance with any shipping container labelling requirements of the foreign country of destination or the container labelling specifications of a foreign contract buyer, provided that:

- a) the shipping containers and shipping documents accompanying such organic products shall be clearly marked "For Export Only", and

- b) proof of such container marking and export shall be maintained by the handler in accordance with recordkeeping requirements for exempt and excluded operations.

#### 8.4.15

Agricultural products displayed and/or sold in bulk or in other than packaged form may use the term, “100 percent organic” or “organic,” as applicable, to modify the name of the product in retail display, labelling, and display containers: Provided, That, the term, “organic,” shall be used to identify the organic ingredients listed in the ingredient statement.

#### 8.4.16

Where the product has been produced in a certified facility, the retail display, labelling, and display containers may use:

- a) The JOAM logo or seal; and
- b) The seal, logo, or other identifying mark of the certification body that certified the production or handling operation producing the finished product and any other certification body which certified operations producing raw organic product or organic ingredients used in the finished product.

#### 8.4.17

Agricultural products in other than packaged form containing between 70 and 95 percent organically produced ingredients may use the phrase, “made with organic (specified ingredients or food group(s)),” to modify the name of the product in retail display, labelling, and display containers, provided:

- a) Such statement shall not list more than three organic ingredients or food groups.
- b) In any such display of the product’s ingredient statement, the organic ingredients shall be identified as “organic.”

#### 8.4.18

Where the product has been produced in a certified facility, such agricultural products labelled as “made with organic (specified ingredients or food group(s))” in retail displays, display containers, and market information may display the certification body’s seal, logo, or other identifying mark.

#### 8.4.19

Any agricultural product organically produced or handled on an exempt or excluded operation shall not:

- a) Display the JOAM logo or seal or any certification body’s seal or other identifying mark which represents the exempt or excluded operation as a certified organic operation, or
- b) Be represented as a certified organic product or certified organic ingredient to any buyer.

#### 8.4.20

An agricultural product organically produced or handled on an exempt or excluded operation may be identified as an organic product or organic ingredient in a multi-ingredient product produced by the exempt or excluded operation. However such product or ingredient shall not be identified or represented as “organic” in a product processed by others.

## **9.0 Social Justice**

### 9.1 Commitment to Social Justice and Human Rights

#### 9.1.1

Operators with 10 or more persons hired for labour should have a documented policy on social justice.

#### 9.1.2

Operators who hire fewer than ten (10) persons for labour are not required to have such a policy.

#### 9.1.3

In cases where evidence is found that production operations are based on violation of basic human rights and documented cases of social injustice, product from such operations shall not be declared or certified as organic.

### 9.2 Employee Rights

#### 9.2.1

Operators shall not use forced or involuntary labour.

#### 9.2.2

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

### 9.3 Work Environment

#### 9.3.1

Operators shall provide their employees and contractors equal opportunity and treatment, and shall not act in a discriminatory way.

#### 9.3.2

Children employed by organic operators shall be provided educational opportunities.

## SECTION C: Table of Housing & Free Range Areas

(Minimum indoor and outdoor surface areas for different species and types of production)

### 1. BOVINES, OVINE AND PIGS

	Indoor area (net area available to animals)		Outdoor area (exercise area, excluding pasturage)
	Live weight minimum (Kg)	M <sup>2</sup> /head	M <sup>2</sup> /head
Breeding and fattening bovine and equidae	Up to 100	1.5	1.1
	Up to 200	2.5	1.9
	Up to 350	4.0	3
	Over 350	5 with a minimum of 1 m <sup>2</sup> /100 kg	3.7 with a minimum of 0.75 m <sup>2</sup> /100 kg
Dairy cows		6	4.5
Bulls for breeding		10	30
Sheep and goats		1.5 sheep/goat	2.5
		0.35 lamb/kid	2.5 with 0.5 per lamb/kid
Farrowing sows with piglets up to 40 days		7.5 sow	2.5
Fattening pigs	Up to 50	0.8	0.6
	Up to 85	1.1	0.8
	Up to 110	1.3	1
Piglets	Over 40 days and up to 30 kg	0.6	0.4
Brood pigs		2.5 female	1.9
		6.0 male	8.0

## 2. POULTRY

	<b>Indoor area (net area available to animals)</b>			<b>Outdoor area (m<sup>2</sup> of area available in rotation/head</b>
	<b>No animals/m<sup>2</sup></b>	<b>cm perch/animal</b>	<b>nest</b>	
Laying hens	6	18	8 laying hens per nest or in case of common nest 120 cm <sup>2</sup> /bird	4, provided that the limit of 170 kg of N/ha/year is not exceeded
Fattening poultry (in fixed housing)	10 with a maximum of 21 kg live weight/m <sup>2</sup>	20 (for guinea fowl only)		4 broilers and guinea fowl 4,5 ducks 10 turkey 15 geese  In all the species mentioned above the limit of 170 kg of N/ha/year is not exceeded
Fattening poultry in mobile housing	16 (*) in mobile poultry houses with a maximum of 30 kg live weight/m <sup>2</sup>			2.5, provided that the limit of 170 kg of N/ha/year is not exceeded

(\*) Only in the case of mobile houses not exceeding 150 m<sup>2</sup> floor space which remain open at night.

## SECTION D: APPENDICES

### Introduction to Appendices

In organic agriculture the maintenance of soil fertility is achieved through the recycling of minerals and organic matter where the nutrients are made available to crops through the activity of soil micro-organisms.

Pests, diseases, and weeds can be managed through cultural practices. Organic foods are processed primarily by biological, mechanical, and physical means. The following appendices are used as a guideline, and are not intended to be comprehensive.

Appendix 4 is used to evaluate products included in Appendix 1, 2 and 3.

Appendix 6 is used to evaluate products included in Appendix 5.

Taking into consideration factors such as contamination, risk of nutritional imbalances, importation of inputs from outside the farm, and depletion of natural resources, the use of many of these inputs is already restricted.

Where there is doubt about whether products should be included in the appendices the precautionary principle should be applied.

### Revision Procedure for Appendices

Any JOAM member can request that JOAM add, delete, or change the status of an input. A member who wishes JOAM to determine whether or not an input should be permitted for use in organic production or processing shall submit a dossier. A dossier addresses all of the JOAM criteria in Appendices 4 and/or 6 and follows the format prescribed by the Standards Committee (SC). A dossier requesting deletion needs only to address the criteria the non-fulfilment of which are the reason for deletion. Requests from non-members may also be considered at the discretion of the SC.

Dossiers shall be submitted to the SC when the certification body or inspection body recommends an input that does not appear in the appendices or that is not clearly covered by the general standards or generic groups in the standards. Inputs that are the subject of dossiers may be used during the assessment period but any user, certification body or inspection body does so at their own risk and should be mindful that a negative decision may be made.

The Standards Committee reviews the dossier and makes one of five decisions:

1. **Insufficient information.** The dossier is returned to the member with a request to provide more information.
2. **Clarification of existing standards.** The member is informed that the input is already covered (allowed, restricted, or prohibited) by the standards.
3. **Reference to Experts.** The Standards Committee requires the opinion of recognized experts before it can make a decision. The JOAM SC passes a dossier to one or several experts for

evaluation. If the experts require further information, the SC requests this information and passes it to the experts. The experts provide a recommendation to the SC. The SC passes expert comment back to the applicant for further comment. The SC then makes a decision based on the recommendation and comments of the applicant.

**4. Recommendation for Change of a Relevant Appendix.** The SC informs the member that the change is recommended by the SC to be included into the JOAM Standards. The input then follows the procedure established for changes of the standards.

**5. Rejection of the Change.** The SC informs the member that the input is not considered to be appropriate for inclusion in the standards.

Final decisions and recommendations shall be published and circulated to all JOAM members.

## Appendix 1: Fertilisers and Soil Conditioners

Substance Description	JOAM Conditions for use
I. Plant and Animal Origin	
Farmyard manure, slurry and urine	Only after composting/fermentation
Poultry manure	Only from extensive poultry production without use of hormones and other growth regulators used in factory farms
Ash from manure burning	Prohibited
Guano	
Source separated human excrement from separated sources which are monitored for contamination	Not to be directly applied on edible parts
Vermicastings and vermicompost	
Blood meal, meat meal, bone, bone meal	Only after approval by JOAM
Hoof and horn meal, feather meal, fish and fish products, wool, fur, hair, dairy products	Only after approval by JOAM
Liquid fish products	Can be pH adjusted with sulphuric, citric or phosphoric acid. The amount of acid used shall not exceed the minimum needed to lower the pH to 3.5.
Biodegradable processing by-products, plant or animal origin, e.g. by-products of food, feed, oilseed, brewery, distillery or textile processing.	Only of vegetative origin
Crop and vegetable residues, mulch, green manure, straw	
Wood, bark, sawdust, wood shavings, woodash, wood charcoal	Only from chemically untreated wood
Seaweed and seaweed products	When extracted see plant preparations below, should not be collected from polluted waters or harvested in an unsustainable manner <sup>1</sup>
Plant preparations and extracts, such as liquid manures	Extraction processes is limited to the use of potassium hydroxide or sodium hydroxide; solvent amount used is limited to that amount necessary for extraction.
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.	
Humic acids	Naturally occurring deposits. Water and alkali extracts only.

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Substance Description	JOAM Conditions for use
2. Mineral Origin	
Basic slag	
Calcareous and magnesium amendments	
Potassium Chloride	Prohibited unless derived from mined source and applied in a manner that minimizes chloride accumulation in the soil
Limestone, gypsum, marl, maerl, chalk, sugarbeet lime, calcium chloride,	
Magnesium rock, kieserite and Epsom salt (magnesium sulphate)	Allowed with a documented soil deficiency.
Mineral potassium (e.g. sulphate of potash, kainite, sylvanite,)	Shall be obtained by physical procedures but not enriched by chemical processes
Natural phosphates	Cadmium content less than or equal to 90 mg/kg P205.
Pulverised rock, stone meal	
Clay (e.g. bentonite, perlite, vermiculite, zeolite)	
Lignin sulphonate	Chelating agent, dust suppressant, flotation agent
Trace elements	Shall meet EEC Directive 89/530.
Sulphur	Shall meet EEC Directive 89/284
Sulphate, carbonates, oxides, or silicates of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt.	Not to be used as a defoliant, herbicide or desiccant. Those made from nitrates or chlorides are prohibited. Soil deficiency must be documented by testing.
Sodium Nitrate	Prohibited unless use is restricted to no more than 20% of the crop's total nitrogen requirement.
Soluble boron products	Not to be used as a defoliant, herbicide or desiccant. Those made from nitrates or chlorides are prohibited. Soil deficiency must be documented by testing.
3. Microbiological	
Biodegradable processing by-products of microbial origin, e.g. by-products of brewery or distillery processing. Microbiological preparations based on naturally occurring organisms	
4. Others	
Arsenic	Prohibited
Lead salts	Prohibited
Sodium Fluoaluminate (mined)	Prohibited
Strychnine	Prohibited
Nicotine Sulphate (tobacco dust)	Prohibited

## Appendix 2: Crop Protectants and Growth Regulators

Substance Description	JOAM Conditions for use
I. Plant and Animal Origin	
Algal preparations	
Beeswax	Pruning agent
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> )	insecticide
Plant oils	
Plant preparations	
Plant based repellents	
Propolis	
Pyrethrum ( <i>Chrysanthemum cinerariaefolium</i> ), typically with a synergist, such as a vegetable oil.	The synergist Piperonyl butoxide is prohibited.
Quassia ( <i>Quassia amara</i> )	
Rotenone ( <i>Derris elliptica</i> , <i>Lonchocarpus</i> spp. <i>Thephrosia</i> spp.)	
Ryania ( <i>Ryania speciosa</i> )	
Sabadilla	
Vitamin D3	Rodenticide
2. Mineral Origin	
Chloride of lime	
Clay (e.g. bentonite, perlite, vermiculite, zeolite)	
Diatomaceous earth	
Light mineral oils (paraffin)	As insecticide, and plant disease control
Lime sulphur (Calcium polysulfide)	As insecticide, and plant disease control
Potassium bicarbonate	Plant disease control
Potassium permanganate	
Quicklime	
Silicates (e.g. sodium silicates, quartz)	
Sodium bicarbonate	
Sulphur	As insecticide, and plant disease control
3. Microorganisms	
Fungal preparations	

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Substance Description	JOAM Conditions for use
Bacterial preparations (e.g. Bacillus thuringiensis, )	
Release of parasites, predators and sterilized insects	
Viral preparations (e.g. granulosis virus)	
4. Others	
Biodynamic preparations	
Ammonium	Large animal repellent only, no contact with soil or edible portion of crop.
Carbon dioxide	
Ethyl alcohol	
Ethylene	For regulation of pineapple flowering
Hydrogen peroxide	Plant disease control
Homeopathic and Ayurvedic preparations	
Seasalt and salty water	
Soda	
Soft soap	Used in farmstead maintenance and insecticide on ornamental crops.
Boric acid	Structural pest control, no direct contact with food or crops.
Copper (copper hydroxide, copper oxide, copper oxychloride, Copper sulphate, hydrated lime)	Must be used in a manner that minimizes accumulation of copper in the soil. Prohibited as a herbicide.
Sulphur dioxide	Rodenticide, underground only (smoke bombs)
5. Traps, Barriers, Repellents	
Physical Methods	e.g. chromatic traps, mechanical traps
Nets	Petroleum based other than Polyvinyl Chloride (PVC)
Mulches	Newspaper or other recycled paper may not contain glossy finish or coloured inks.
Pheromones (Ammonium Carbonate, etc.)	in traps and dispensers only

### Appendix 3a: Feed Material

Substance Description	JOAM Conditions for use
1. Feed materials from plant origin	
<p>Cereals, grains, their products and by-products, including the following substances:</p> <p>Oats as grains, flakes, middlings, hulls and bran; barley as grains, protein and middlings; rice as grains, rice broken, bran, and germ expeller; millet as grains; rye as grains, middlings, feed and bran; sorghum as grains; wheat as grains, middlings, bran, gluten feed, gluten and germ; spelt as grains; triticale as grains; maize as grains, bran, middlings, bran, germ expeller and gluten; malt culms; brewers' grains.</p>	
<p>Oil seeds, oil fruits, their products and by-products, including the following substances:</p> <p>Rape seed, expeller, and hulls; soya bean as bean, toasted, expeller and hulls; sunflower seed as seed and expeller; cotton as seed and seed expeller; linseed as seed and expeller; sesame seed as seed and expeller; palm kernels as expeller; turnip rape seed as expeller and hulls; pumpkin seed as expeller; olive pulp (from physical extraction of olives).</p>	

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Substance Description	JOAM Conditions for use
<p>Legume seeds, their product and by-products, including the following substances:</p> <p>Chick peas as seeds; ervil as seeds; chickling vetch as seeds submitted to an appropriate heat treatment; peas as seeds, middlings, and bran; broad beans as seeds, middlings and bran; horse beans as seeds, vetches as seeds and lupine as seeds.</p>	
<p>Tuber roots, their products and by-products, including the following substances:</p> <p>Sugar beet pulp, dried beet, potato, sweet potato as tuber, manioc as roots, potato pulp (by-product of the extraction of potato starch), potato starch, potato protein and tapioca.</p>	
<p>Other seeds and fruits, their products and by-products, including the following substances:</p> <p>Carob pods, citrus pulp, apple pomace, tomato pulp, and grape pulp.</p>	
<p>Forages and roughages, including the following substances:</p> <p>Lucerne, lucerne meal, clover, clover meal, grass (obtained from forage plants), grass meal, hay, silage, straw of cereals, and root vegetables for foraging.</p>	

Substance Description	JOAM Conditions for use
<p>Other plants, their products and by-products, including the following substances:</p> <p>Molasses as a binding agent in compound feeding stuffs, seaweed meal (obtained by drying and crushing seaweed and washed to reduce iodine content), powders and extracts of plants, plant protein extracts (solely provided to young animals), spices and herbs.</p>	
<p>2. Feed materials from animal origin</p>	
<p>2.1 Milk and milk products, including the following substances:</p> <p>Raw milks, milk powder, skimmed milk, skimmed-milk powder, buttermilk, buttermilk powder, whey, whey powder, whey powder low in sugar, whey protein powder (extracted by physical treatment), casein powder and lactose powder.</p>	<p>Milk substitutes not containing antibiotics may be used in emergencies only.</p>
<p>2.2. Fish, other marine animals, their products and by-products, including the following substances:</p> <p>Fish, fish oil and cod-liver oil not refined; Fish molluscan or crustacean autolysates, hydrolysate and proteolysates obtained by an enzyme action, whether or not in soluble form, solely provided to young animals. Fish meal.</p>	
<p>3. Feed materials from mineral origin</p>	
<p>Sodium: unrefined sea salt, coarse rock salt, sodium sulphate, sodium carbonate, sodium bicarbonate, sodium chloride.</p>	

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Substance Description	JOAM Conditions for use
Calcium: lithotamnion and maerl, Shells of aquatic animals (including cuttlefish bones), calcium carbonate, calcium lactate, calcium gluconate.	
Phosphorus: bone dicalcium phosphate precipitate, defluorinated dicalcium phosphate, defluorinated monocalcium phosphate.	
Magnesium: anhydrous magnesia, magnesium sulphate, magnesium chloride, magnesium carbonate.	
Sulphur: sodium sulphate	

## Appendix 3b: Feed Additives

Substances	Description, compositional requirements	JOAM Conditions for use
1. Feed additives		
Trace elements, including the following substances:		
Iron: ferrous (II) carbonate, ferrous (II) sulphate monohydrate, ferric (III) oxide,		
Iodine: calcium iodate, anhydrous calcium iodate, hexahydrate potassium iodide.		
Cobalt: cobaltous (II) sulphate monohydrate and/or heptahydrate; basic cobaltous (II) carbonate, monohydrate.		
Copper: copper (II) oxide; basic copper (II) carbonate, monohydrate; copper (II) sulphate, pentahydrate.		
Manganese: manganose (II) carbonate; manganous oxide and manganic oxide; manganous (II) sulfate, mono- and/or tetrahydrate.		
Zinc: zinc carbonate; zinc oxide; zinc sulphate mono- and/or heptahydrate.		
Molybdenum: ammonium molybdate, natrium molybdate.		
Selenium: sodium selenate, sodium selenite.		
Vitamins, provitamins and chemically well-defined substances having a similar effect.		Vitamins authorised under Directive 70/524/EEC, and/or US FDA approved. Preferably derived from raw materials occurring naturally in feeding stuffs, or synthetic vitamins identical to natural vitamins only for monogastric animals.
D Vitamins		Max 200,000 IU/kg
Aspirin		Approved for healthcare use to reduce inflammation.
Enzymes		Enzymes authorised under Directive 70/524/EEC.
Micro-organisms.		Micro-organisms authorised under Directive 70/524/EEC.

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Substances	Description, compositional requirements	JOAM Conditions for use
<b>Preservatives, including the following substances:</b>		
Formic acid		only for silage
Acetic acid		only for silage
Lactic acid		only for silage
Propionic acid		only for silage
<b>Binders, anti-caking agents and coagulants, including the following substances:</b>		
Colloidal silica		
Kieselgur		
Sepiolite		
Bentonite		
Kaolinitic clays		
Vermiculite		
Perlite		
Processing aids used in feeding stuffs, including the following substances: Sea salt, coarse rock salt, enzymes, yeasts, whey, sugar, sugar beet pulp, cereal flour, molasses and lactic, acetic, formic, and propionic bacteria.		Processing aids for silage.
Glucose		

## Appendix 4: Evaluation of Additional Inputs to Organic Agriculture

Appendices 1, 2 and 3 refer to products for fertilisation, plant pest and disease control and feed material and feed additives in organic agriculture. Appendix 4 outlines the criteria to evaluate other inputs into organic production.

4.1 Checklist for amending the permitted substance list for fertilisation and soil conditioning purposes.

Criteria to be considered	Comments
4.1.1. The material is essential for achieving or maintaining soil fertility or to fulfil specific nutrient requirements, for specific soil-conditioning and rotation purposes which cannot be satisfied by the practices outlined in Chapter 4 or of other products included in Appendix 1, and	
4.1.2. The ingredients are of plant, animal, microbial or mineral origin which may undergo the following processes:	
• physical (mechanical, thermal)	
• enzymatic	
• microbial (composting, digestion), and	
4.1.3. Their use does not result in, or contribute to, unacceptable effects on, or contamination of, the environment, including soil organisms, and	
4.1.4. Their use has no unacceptable effect on the quality and safety of the final product.	

4.2 Checklist for amending the permitted substance list of plant disease or pest and weed control

Criteria to be considered	Comments
4.2.1. The material is essential for the control of a harmful organism or a particular disease for which other biological, physical or plant breeding alternatives and/or effective management techniques are not available, and	
4.2.2. The substances (active compound) should be plant, animal, microbial or mineral origin which may undergo the following processes:	
• physical	
• enzymatic	
• microbial, and	
4.2.3. Their use does not result in, or contribute to, unacceptable effects on, or contamination of, the environment.	

4.2.4. Nature identical products such as pheromones, which are chemically synthesised may be considered if the products are not available in sufficient quantities in their natural form, provided that the conditions for their use do not directly or indirectly contribute to contamination of the environment or the product.	
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Inputs should be evaluated regularly and weighed against alternatives. This process of regular evaluation should result in organic production becoming ever more friendly to humans, animals, the environment and the ecosystem.

#### 4.3 Criteria for evaluation of additional inputs to organic agriculture.

##### 4.3.1. Necessity

Each input must be necessary. This will be investigated in the context in which the product will be used. Arguments to prove the necessity of an input shall be drawn from such criteria as yield, product quality, environmental safety, ecological protection, landscape, human and animal welfare. The use of an input may be restricted to:

- Specific crops (especially perennial crops)
- Specific regions
- Specific conditions under which the input may be used

##### 4.3.2. Nature and Way of Production

###### 4.3.2.1 Nature:

The origin of the input should usually be (in order of preference):

- Organic - vegetative, animal, microbial,
- Mineral

Non-natural products which are chemically synthesised and identical to natural products may be used. When there is any choice, renewable inputs are preferred. The next best choice is inputs of mineral origin and the third choice is inputs which are chemically identical to natural products. There may be ecological, technical or economic arguments to take into consideration in the allowance of chemically identical inputs.

###### 4.3.2.2. Way of Production:

The ingredients of the inputs may undergo the following processes:

- Mechanical
- Physical
- Enzymatic
- Action of micro-organisms
- Chemical (as an exception and restricted)

###### 4.3.2.3. Collection:

The collection of the raw materials comprising the input shall not affect the stability of the natural habitat nor affect the maintenance of any species within the collection area.

##### 4.3.3. Environment

###### 4.3.3.1. Environmental Safety

The input shall not be harmful or have a lasting negative impact on the environment. Nor should the input give rise to unacceptable pollution of surface or ground water, air or soil. All stages during processing, use and breakdown shall be evaluated.

The following characteristics of the input shall be taken into account:

###### 4.3.3.2. Degradability

All inputs shall be degradable to CO<sub>2</sub>, H<sub>2</sub>O, and/or to their mineral form.

Inputs with a high acute toxicity to non-target organisms should have a maximum half-life of five days.

Natural substances used as inputs which are not considered toxic do not need to be degradable within a limited time.

#### **4.3.3.3. Acute toxicity to non-target organisms.**

When inputs have a relatively high acute toxicity for non-target organisms, restrictions for their use is needed.

Measures have to be taken to guarantee the survival of these non-target organisms. Maximum amounts allowed for application must be set. When it is not possible to take adequate measures, the use of the input is not permitted.

#### **4.3.3.4. Long-term chronic toxicity.**

Inputs that accumulate in organisms or systems of organisms and inputs which have, or are suspected of having, mutagenic or carcinogenic properties shall not be used. If there are any risks, sufficient measures shall be taken to reduce any risk to an acceptable level and to prevent long lasting negative environmental effects.

#### **4.3.3.5. Chemically synthesised products and heavy metals**

Inputs shall not contain harmful amounts of manufactured chemicals (xenobiotic products). Chemically synthesised products may be accepted only if nature identical.

Mineral inputs should contain as few heavy metals as possible. Due to the lack of any alternative, and long-standing, traditional use in organic agriculture, copper and copper salts are an exception for the time being.

The use of copper in any form in organic agriculture must be seen, however, as temporary and use shall be restricted with regard to environmental impact.

### 4.3.4. Human Health and Quality

#### **4.3.4.1. Human Health**

Inputs shall not be harmful to human health. All stages during processing, use and degradation shall be taken into account. Measures shall be taken to reduce any risks and standards set for inputs used in organic production.

#### **4.3.3.2. Product Quality**

Inputs shall not have negative effects on the quality of the product - e.g. taste, keeping quality, visual quality.

### 4.3.5. Ethical Aspects - Animal Welfare

Inputs shall not have a negative influence on the natural behaviour or physical functioning of animals kept at the farm.

### 4.3.6. Socio-Economic Aspects

#### **4.3.5.1. Consumers' perception:**

Inputs should not meet resistance or opposition of consumers of organic products. An input might be considered by consumers to be unsafe to the environment or human health, although this has not been scientifically proven. Inputs should not interfere with a general feeling or opinion about what is natural or organic - e.g. genetic engineering.

## Appendix 5 a: List of Approved Additives and Processing Aids

Where the substances listed in this annex can be found in nature, natural sources are preferred. Substances of certified organic origin are preferred.<sup>1</sup>

International Numbering System	Product Name	Additive	Proc. Aid	JOAM Conditions For Use
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 labeled "made with organic grapes", provided total sulphite concentration less than 100ppm.
INS 270	lactic acid	X	X	
INS 290	carbon dioxide	X	X	
INS 300	ascorbic acid	X		
INS 306	tocopherols, mixed natural concentrates	X		Anti-oxidant in fats and oils
INS 322	lecithin	X	X	
INS 330	citric acid	X	X	
INS 331	Sodium citrate	X		Acidity regulator, sequestrant, emulsifier, stabilizer.
INS 332	Potassium citrate	X		Acidity regulator, sequestrant, stabilizer
INS 333	calcium citrates	X		
INS 334	tartaric acid	X	X	only for wine
INS 335	sodium tartrate	X	X	
INS 336	potassium tartrate	X	X	
INS 339	Sodium phosphates	X		For use only in dairy foods.
INS 341	mono calcium phosphate	X		only for "raising flour"
INS 400	alginic acid	X		
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		

<sup>1</sup> Food additives may contain carriers which shall be evaluated

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International Numbering System	Product Name	Additive	Proc. Aid	JOAM Conditions For Use
INS 415	xanthan gum	X		
INS 440	pectin	X		unmodified
INS 471	Mono- and di-glycerides of fatty acids	X		Emulsifier, stabilizer.
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		Only in agricultural products labeled "made with organic". Prohibited in agricultural products labeled "organic".
INS 508	Potassium chloride	X		Gelling agent
INS 509	Calcium chloride	X	X	
INS 511	Magnesium chloride	X	X	Only for soybean products
INS 516	Calcium sulphate	X		For soybean products, confectionery and in bakers' yeast
INS 518	Magnesium sulphate	X		As a firming agent
INS 524	Sodium hydroxide	X	X	For sugar processing and for the surface treatment of traditional bakery products. Prohibited for use in lye peeling of fruits and vegetables.
INS 526	Calcium hydroxide	X	X	Food additive for maize tortilla flour. Processing aid for sugar
INS 550	Sodium silicate	X	X	For tree fruit and fibre processing
INS 551	Silicon dioxide, amorphous	X		Anticaking agent.
INS 553	Talc		X	
INS 558	Bentonite		X	Only for fruit and vegetable products
INS 901	Beeswax		X	
INS 903	Carnauba wax		X	
INS 917	Potassium iodide	X		Treatment of flour. Only in agricultural products labeled "made with organic". Prohibited in agricultural products labeled "organic".
INS 938	argon	X		
INS 941	nitrogen	X	X	
INS 948	oxygen	X	X	
	activated carbon		X	
	casein		X	only for wine
	Cornstarch (native)	X		Only when not available in organic form.

International Numbering System	Product Name	Additive	Proc. Aid	JOAM Conditions For Use
	diatomaceous earth		X	only for sweeteners and wine
	egg white albumen		X	only for wine
	ethanol		X	Disinfectant and sanitizer only.
	Ethylene		X	For post-harvest ripening of tropical fruit
	gelatin	X	X	only for wine, fruit and vegetable
	Glycerin	X		Produced by hydrolysis of fats and oils.
	Gums (arabic, guar, locust bean, carob bean)	X		Water extracted only. Only when not available in organic form.
	Hydrogen peroxide		X	Per NOP.
	isinglass		X	only for wine
	kaolin		X	
	Kelp	X		Asa thickner and dietary supplement. Only when not available in organic form.
	Lecithin (unbleached)	X		Only when not available in organic form.
	Ozone		X	
	perlite		X	
	preparations of bark		X	only for sugar
	Tocopherols	X		Derived from vegetable oil when rosemary extracts are not a suitable alternative.
	Yeast	X		Nonsynthetic only. Growth on petrochemical substrate and sulphite waste liquor is prohibited.

#### Flavouring Agents:

- Organic flavouring extracts (including volatile oils)
- Volatile (essential) oils produced by means of solvents such as oil, water, ethanol, carbon dioxide and mechanical and physical processes
- Natural smoke flavour
- Natural flavouring preparations are only to be approved based on the JOAM Procedure to Evaluate Additives and Processing Aids (Appendix 6)

#### Preparations of Micro-organisms and Enzymes for use in food processing:

These may be used as ingredient or processing aids with approval based on the JOAM Procedure to Evaluate Additives and Processing Aids for Organic Food Products (Appendix 6).

- Organic certified microorganisms
- Preparations of microorganisms

- Enzymes and enzyme preparations derived from edible, nontoxic plants, nonpathogenic fungi, or nonpathogenic bacteria.

**Colouring Agents:**

Colours from nonsynthetic sources only.

## Appendix 5 b: List of Approved Products for Cleaning and Disinfection

This list applies to the cleaning and disinfection of buildings, equipment, utensils, transportation carriers and transportation containers used in the handling of livestock, storage of products, and the processing and packaging of organic products.

Substance Description	JOAM Conditions for use
Potassium and sodium soap	
Water and steam	
Milk of lime	
Lime, hydrated	Not permitted to cauterize physical alterations or deodorize animal wastes.
Quicklime	
Caustic soda	
Caustic potash	
Hydrogen peroxide	
Natural essences of plants	
Citric, peracetic acid, formic, lactic, oxalic and acetic acid	
Alcohol (ethanol, isopropanol)	
Chlorine (Calcium Hypochlorite, Chlorine Dioxide, Sodium Hypochlorite)	
Chlorohexidine	Allowed for surgical procedures conducted by veterinarian, and as a teat dip when alternative germicidal agents or physical barriers have lost their effectiveness.
Copper Sulphate	Livestock topical treatment, external parasiticide only.
Glycerin	Allowed as a livestock teat dip, must be produced through the hydrolysis of fats or oils.
Iodine	
Ivermectin	Allowed in emergency treatment for dairy and breeder stock when organic system plan-approved preventive management does not prevent infestation. Prohibited in slaughter stock
Lidocaine	Allowed as a local anesthetic only. Use requires a withdrawal period of 90 days after administering to livestock intended for slaughter and 7 days after administering to dairy animals.
Magnesium sulphate	
Mineral Oil	Livestock topical treatment, external parasiticide only.
Nitric acid	
Phosphoric acid	
Procaine	As a local anesthetic only. Use requires a withdrawal period of 90 days for slaughter animals, and 7 days for dairy animals.
Oxytocin	Allowed in postparturition therapeutic applications only.
Formaldehyde	

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Substance Description	JOAM Conditions for use
Sodium carbonate	
Strychnine	Prohibited

## **Appendix 6: Evaluation of Additives, Processing Aids, Cleaning & Disinfection Products**

### 6.0. Introduction

Additives, processing aids, flavouring agents and colours shall be evaluated according to this Appendix. The following aspects and criteria should be used for evaluation of additives and processing aids in organic food production.

### 6.1. Necessity

Additives and processing aids may only be allowed in organic food products if each additive or processing aid is essential to the production and:

- the authenticity of the product is respected.
- the product cannot be produced or preserved without them.

### 6.2. Criteria for the Approval of Additives and Processing Aids

Additives and processing aid may be approved where:

- There are no other acceptable technologies available to process or preserve the organic product.
- The use of additives or processing aids which minimise physical or mechanical damage to the foodstuff as a substitute for other technologies which if used would result in such damage.
- The hygiene of the product cannot be guaranteed as effectively by other methods (such as a reduction in distribution time or improvement of storage facilities).
- There are no natural food sources available of acceptable quality and quantity which can replace the use of additives or processing aids.
- Additives or processing aids do not compromise the authenticity of the product.
- The additives or processing aids do not confuse the customer by giving the impression that the final product is of higher quality than is justified by the quality of the raw material. This refers primarily, but not exclusively, to colouring and flavouring agents.
- Additives and processing aids should not detract from the overall quality of the product.

### 6.3. Procedure for the use of Additives and Processing Aids

#### **6.3.1 Instead of using additives or processing aids, the preferred first choice is:**

- Foods grown under organic conditions which are used as a whole product or are processed in accordance with the JOAM Basic Standards - e.g. flour used as a thickening agent or vegetable oil as a releasing agent.
- Foods or raw materials of plant and animal origin produced only by mechanical or simple physical procedures - e.g. salt.

#### **6.3.2. The second choice is:**

- substance isolated from food and produced physically or by enzymes - e.g. starch, tartrates, pectin.
- Purified products of raw materials of non-agricultural origin and micro-organisms - e.g. acerola fruit extract, enzymes and micro-organism preparations such as starter cultures.

#### **6.3.3. In organic food products the following categories of additives and processing aids are not allowed:**

- "Nature identical" substances.
- Synthetic substances primarily judged as being unnatural or as a "new construction" of food compounds such as acetylated cross-linked starches.
- Additives or processing aids produced by means of genetic engineering.

- Synthetic colouring and synthetic preservatives.
- Carriers and preservatives used in the preparation of additives and processing aids shall also be taken into consideration.