



Organic and biodynamic products



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- Accord Australasia
 - Australian Food and Grocery Council
 - Australian National Retailers Association
 - Australian Organic
 - Biodynamic Agriculture Australia
 - Consumer's Federation of Australia
 - Department of Agriculture (Australian Government)
 - Joint Accreditation System of Australia and New Zealand
 - National Association for Sustainable Agriculture Australia
 - Organic Federation of Australia
 - Organic Industry Standards and Certification Council
-

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Australian Standard[®]

Organic and biodynamic products

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PREFACE

This Standard was prepared by the Standards Australia Committee FT-032, Organic and Biodynamic Products, to supersede AS 6000—2009.

The objective of this Standard is—

- (a) to establish a framework for the organic industry covering production, preparation, transportation, labelling and marketing;
- (b) to ensure that all stages of production, preparation and marketing meet the minimum requirements as outlined in this Standard;
- (c) to protect consumers against deception and fraud in the market place and unsubstantiated product claims;
- (d) to protect producers of organic products against misinterpretation of other agricultural products as organic;
- (e) to provide a guide to farmers contemplating conversion to organic farming;
- (f) to raise awareness of ecological requirements in nature and the farm environment; and
- (g) to harmonize national provisions for the production, identification and labelling of organically and biodynamically grown products.

The objective of this revision is to update—

- (i) Clauses 2.1 Farm, and 2.2 Conversion of land;
- (ii) Clause 2.14.2.9 on the sunset condition for synthetic amino acids;
- (iii) Clause 2.17 Livestock housing and range management;
- (iv) Clause 2.22 Biodynamic production; and
- (v) Appendix G (new) provides additional guidance on biodynamic production.

This Standard stipulates minimum requirements for products placed on the market with labelling that states or implies they have been produced under organic or biodynamic systems. In this Standard the production procedures are an intrinsic part of the identification and labelling of, and claims for, such products.

Appendix A provides a brief outline of a certification system for information.

The procedures for certification are set out in MP 100, *Procedures for certification of organic and biodynamic products*.

The main text of this Standard contains two distinct components:

- (A) *General principles* The first component identifies general principles that apply to organic and biodynamic activities. These are in *italic text*. General principles are intended to give the reader information and guidance on what each clause aims to achieve.
- (B) *Requirements* The second component stipulates the specific conditions (or requirements), which must be met by an operator of an organic or biodynamic unit for compliance with this Standard. These are in normal print.

Requirements outlined in this Standard are complementary and additional to other health, agricultural or food standards or regulatory requirements recognized by or enacted by the Commonwealth, States or Territories. These include but are not limited to food safety, animal welfare, environmental management and social justice.

This Standard applies in addition to Commonwealth, state/territory or local statutory laws.

Statements expressed in mandatory terms in footnotes to tables are deemed to be requirements of this Standard.

This Standard is based on the publication by Organic Industry Export Consultative Committee (OIECC), c/o Australian Quarantine and Inspection Service (AQIS) of Commonwealth Department of Agriculture Fisheries and Forestry, *National Standard for Organic and Bio-Dynamic Produce*, Edition 3.3, 1 July 2007.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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FOREWORD

The Organic Industry Export Consultative Committee (OIECC) publication, *National Standard for Organic and Bio-Dynamic Produce*, was first implemented in 1992 as the Australian Export Standard for products labelled as 'organic' or 'biodynamic'. A second edition was released in 1998, with further development resulting in a third edition in 2002. Since inception it has provided the organic industry with a nationally agreed Standard.

Organic farming systems include those that are referred to as 'biodynamic' or 'biological'. The basic principles are to achieve optimum quantities of products and food of high quality without the use of artificial fertilizers or synthetic chemicals. Organic farming requires the nurturing and maintaining of land for future generations.

Emphasis is placed on management practices, the use of renewable resources, the need for conservation of energy, soil and water resources and the maintenance of environmental quality. The production cycle is as closed as possible, with limited use of external inputs permitted by this Standard. The objective of this system is to be sustainable.

A Standard for organically produced agricultural products differs from Standards for other agricultural products in that the production procedures are an intrinsic part of the identification and labelling of, and claims for, such products.

The principal objectives of an organic production system include—

- (a) the production of quality food and fibre;
- (b) the enhancement of biological cycles in farming systems;
- (c) maintaining or improving fertility of soils;
- (d) working as far as practicable within a closed system by minimizing the use of non-renewable resources;
- (e) the avoidance of land, water and atmospheric pollution resulting from agriculture and processing practices; and
- (f) the co-existence with, and the protection of, the environment and the welfare of animals.

STANDARDS AUSTRALIA

Australian Standard

Organic and biodynamic products

SECTION 1 SCOPE AND DEFINITIONS

1.1 SCOPE

1.1.1 This Standard stipulates the minimum criteria to be met by operators before products can be labelled as ‘organic’, ‘biodynamic’ or ‘in-conversion’ or any of these.

1.1.2 Those products include unprocessed products from plants, animals, fungi and their processed derivatives.

1.1.3 The methods by which production, preparation, labelling and marketing take place are defined and specified by this Standard.

1.1.4 This Standard specifies the almost absolute restriction of synthetically derived pesticides, fertilizers and veterinary inputs in production and the restriction of processing aids and additives to the most simple and necessary ones.

NOTES:

- 1 The materials, substances, additives and processing aids in Appendices B to D include products (inputs) established and acceptable to use in organic and biodynamic agriculture. These inputs are subject to review.
- 2 Appendix F sets out the criteria to be used to evaluate changes to the inputs in Appendices B to D.

1.1.5 This Standard includes the definition and specification of practices in production and preparation that minimize environmental impacts in the operations and the environmental impact through the sourcing, manufacture, use and fate of input products.

1.1.6 This Standard specifies animal welfare requirements that focus on maintaining natural behaviour and also the broader ethical and social dimensions of agricultural production.

1.1.7 This Standard also includes measures that predicate internal recycling of energy and nutrients on the farm and measures that encourage the development of biodiversity and carbon conservation in the soil and vegetation of the farm.

1.1.8 This Standard is founded on the precautionary principle that explains the prohibition of gene technology, nanotechnology and ionizing radiation, excluding X-rays used for the detection of foreign matter, as production and processing inputs and methodologies.

1.1.9 As such, this Standard is based on the process of production and preparation as a defining factor in the nature of the finished product and, therefore, does not guarantee that the finished product is completely free from adventitious contamination arising from factors beyond the control of the operator. Nonetheless, the practices described within will maximize the quality and wholesomeness of food and other products and ensure the lowest possible risk of contamination of all finished products.

1.1.10 As a measure to confirm the truthful labelling of products produced under this Standard, it includes requirements for the preservation of the identity and traceability of organic and biodynamic products from the paddock to the consumer and that operators be subject to compliance verification. The means of achieving this is by a certification system.

NOTES:

- 1 Appendix A provides a brief outline of a certification system for information.
- 2 The procedures for certification are set out in MP 100.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

2070 Plastic materials for food contact use

4454 Composts, soil conditioners and mulches

4696 Hygienic production and transportation of meat and meat products for human consumption

MP 100 Procedures for certification of organic and biodynamic products

Food Standards Australia New Zealand

Australia New Zealand Food Standards Code

Standard 1.4.2: Maximum residue limits

1.3 DEFINITIONS

For the purpose of this Standard, the following definitions apply:

1.3.1 Adventitious contamination

Contamination that has arisen from sources external to the operator, accidents beyond the reasonable control of the operator, or occurring in an unusual place.

1.3.2 Allopathic veterinary drugs

Substances used to treat disease that produce a reaction or effects different from those caused by the disease itself.

1.3.3 Aquatic

In or around water.

1.3.4 Audit

A systematic review of the extent of conformity with specified requirements.

1.3.5 Biodegradable

Capable of being decomposed by bacteria or other biological means.

1.3.6 Biodiversity

The variety of all forms of life—the different plants, animals and microorganisms, the genes they contain and the ecosystems of which they are components. It underpins the processes that make life possible, such as hydrological cycles and the supply of such human needs as food.

1.3.7 Biodynamic

An agricultural system that introduces specific additional requirements to an organic system. These are based on the application of preparations indicated by Rudolf Steiner and subsequent developments for management derived from practical application experience and research based on these preparations.

1.3.8 Biodynamic Preparation(s)

The natural activators developed according to Steiner's original indications.

1.3.9 Biological control

The control of pests or diseases by natural organisms.

1.3.10 Buffer zone

A clearly defined and identifiable boundary area bordering an organic or biodynamic production unit that is established to limit inadvertent application or contact of prohibited substances from adjacent areas.

1.3.11 Certification

Procedures by which a certification body provides written assurance that an operator has been determined to conform to this Standard.

1.3.12 Certification body

A product certification body accredited to the appropriate accreditation criteria by an accreditation body.

1.3.13 Compost

The conversion of organic materials (e.g. decomposed vegetation, animal manure and waste products), permitted under this Standard, into humus colloids.

1.3.14 Cosmetic and skincare products

A substance or preparation intended for application to any external part of the human body, including the mucous membranes of the oral cavity and the teeth.

1.3.15 Cultural control

The management of pests and diseases by manipulation of the production system or production practices, e.g. cultivation, heat, pruning, cover crops and resistant varieties.

1.3.16 Designated protected areas

An area designated by a government body or by operational law for the protection of natural or man-made elements within it.

1.3.17 Feed ration

A feed allowance for an animal in any given period of a day or longer.

1.3.18 Feed supplement

A component added to livestock feed to correct or overcome a deficiency or to prevent the development of a deficiency.

1.3.19 Gene technology

Any technique for the modification of genes or other genetic material, in ways that do not occur in nature or through traditional sexual reproduction.

1.3.20 Genetically modified organism (GMO)

Either—

- (a) an organism that has been modified by gene technology; or
- (b) an organism that has inherited particular traits from an organism (the initial organism), being traits that occurred in the initial organism because of gene technology.

1.3.21 Homeopathic preparation/treatment

A preparation for the treatment of disease based on the administration of minute potentized doses of a substance that in larger amounts would produce symptoms in healthy animals, similar to those of the disease itself.

1.3.22 Ingredients

Substances, including additives, used in the preparation of the products specified in this Standard.

1.3.23 Ionizing radiation (irradiation)

High-energy radiation capable of producing ionization in substances through which it passes. Ionizing radiations include X-rays, neutrons and radiation from radioactive materials, such as alpha particles, beta particles and gamma rays.

1.3.24 In-conversion

A production system that, although it does not yet qualify as organic or biodynamic, has adhered to this Standard for at least one year and has been assessed as operating as such.

1.3.25 Landless production

The specific production methods used to grow products such as mushrooms, sprouts, barley and wheat grass. Hydroponic practices are excluded.

1.3.26 Labelling

Any words, particulars, trademarks, brand names, names of certification body, pictorial matter or symbols appearing on any packaging, document, notice, label, board or collar accompanying or referring to a product specified in this Standard.

1.3.27 Livestock

Domestic or domesticated aquatic and terrestrial animals (including insects and birds) raised for food or fibre, or production of food or fibre.

1.3.28 *m/m*

Mass per mass.

1.3.29 Maximum Residue Limit (MRL)

The maximum level of a chemical that is permitted to be present in food as set out in Standard 1.4.2 of Australia New Zealand Food Standards Code.

1.3.30 May

Indicates the existence of an option.

1.3.31 Mulch

The material applied to the surface of soil to protect plants from weed competition and to moderate soil moisture and temperature.

1.3.32 Nano technology

The intentional production of particles with a size less than 300 nanometres in at least one dimension. These particles are called 'nano particles'.

Nano particles produced by nature, for example, by-products of forest fires, volcanoes, salt spray or incidentally produced as a result of accepted processing methods such as flour as a by-product of traditional milling, are not excluded from an organic production or preparation system.

1.3.33 Natural

Existing or formed by nature; not synthetic.

1.3.34 Nature identical

Chemically identical to that existing in nature but may be manufactured or formulated by a chemical process.

1.3.35 Operator

Any person (corporate or individual) responsible for any step in the primary production, preparation, transportation, marketing or sale of—

- (a) organic or biodynamic products or ingredients; or
- (b) products or ingredients as referred as ‘in-conversion’, see Definition 1.3.24.

1.3.36 Organic

The application of agricultural and processing practices that emphasize—

- (a) the use of renewable resources;
- (b) conservation of energy, soil and water;
- (c) recognition of livestock welfare needs; and
- (d) environmental maintenance and enhancement, while producing optimum quantities of products without the use of artificial fertilizer or synthetic chemicals and non-essential food additives and/or processing aids.

1.3.37 Organic management plan

A plan developed and documented by operators that identifies how they will maintain the integrity of their operation in accordance with this Standard and includes a map or floor plan of the production or preparation unit.

1.3.38 Organic management practices

Organic systems and operator practices as described in this Standard.

1.3.39 Parallel production

The production of an organic or biodynamic product that complies with this Standard by an operator who is also producing visually identical products that do not comply with this Standard.

1.3.40 Potable water

Water complying with the Australian drinking water guidelines defined by the National Health and Medical Research Council (NHMRC).

1.3.41 Preparation

The operations of processing, preserving, packaging, storing and handling of product.

1.3.42 Primary ecosystem

Pristine and anthropogenically undisturbed ecosystems.

1.3.43 Principal display panel

The panel on packaging that identifies the primary or advertised description of the product.

1.3.44 Processing aid

Substances intentionally used in the preparation of materials and fulfil an essential technological purpose during preparation.

1.3.45 Production

Any primary production involved in producing an agricultural or aquaculture product.

1.3.46 Production or processing unit

A portion of an enterprise that produces or prepares a product under specific organic management practices.

1.3.47 Prohibited substance/treatment

An input to organic production and preparation not permitted in this Standard.

1.3.48 Restaurant (cafe)

Includes take-away premises, canteens and catering operations.

1.3.49 Sanitize

To adequately treat product or product-contact surfaces by a process that is effective in destroying or substantially reducing the numbers of undesirable microorganisms, but without adversely affecting the product or its safety for the consumer.

1.3.50 Shall

Indicates that a statement is mandatory.

1.3.51 Sheet composting

A method of composting in which organic materials (e.g. plant matter, animal manure) are spread over an area of land and subjected to environmental decomposition, rather than being organized into heaps designed for management under specific heat control.

1.3.52 Should

Indicates a recommendation.

1.3.53 Synthetic

Substances formulated or manufactured by a chemical process or by a process that chemically alters compounds extracted from naturally occurring plant, animal or mineral resources.

1.3.54 Wetting agents (surfactants)

Substances used to reduce surface tension of liquids sprayed onto plants or livestock.

1.3.55 Wine

The product of the complete or partial fermentation of fresh grapes, fruit and/or vegetables, or a mixture of that product.

SECTION 2 PRODUCTION REQUIREMENTS

2.1 FARM

2.1.1 General principles

- (a) *The basic aim of an operator should be to achieve optimum quantities of quality product, while enhancing the sustainability of natural agriculture resources.*
- (b) *The aim outlined above is achieved through organic management practices, which create soils of enhanced biological activity, as indicated by the humus level, crumb structure and feeder root development, such that plants are fed through the soil ecosystem, and not principally by adding soluble fertilizers to the soil.*
- (c) *Plants grown in natural systems take up nutrients that are released slowly from humus colloids, at a rate governed by sunlight and warmth. Under such a system, metabolism of the plant and its ability to assimilate nutrients is not over-stressed by excessive uptake of soluble salts from the soil water (e.g. nitrates). Therefore the development of soil structure and humus is fundamental to organic and biodynamic systems.*
- (d) *Organic and biodynamic systems rely upon crop rotation, use of residual crops, animal manures, legumes, green manures, mechanical cultivation, cultural control, minimal application of approved mineral-bearing rocks and aspects of biological pest management to maintain soil productivity and tilth, to supply plant nutrients and to control diseases, insects, weeds and other pests.*
- (e) *The provision of organically grown feed and livestock husbandry practices that reflect the behavioural needs, ethical treatment and welfare management of livestock are also of fundamental importance where animals are kept on the farm.*

2.1.2 Requirements

2.1.2.1 The requirements of this Standard shall be applied to the land for not less than three years before products can be labelled as 'organic' or 'biodynamic'.

2.1.2.2 The requirements of this Standard shall be applied to the land for not less than 12 months before products can be labelled as 'in-conversion'.

2.1.2.3 Only inputs listed in Appendix B shall be permitted. The use of prohibited substances or treatments shall make the product ineligible for labelling under this Standard.

2.1.2.4 Where a government authority implements a statutory action plan and prohibited substances and/or treatments not consistent with this Standard are applied, not less than 12 months shall elapse before affected products of that farm, or products of affected areas, shall be labelled as 'organic' and 'biodynamic'. Relevant testing of products may be required before any 'organic' or 'biodynamic' status is regained.

2.1.2.5 Products derived from gene technology or nano technology shall not be used in organic management practices.

2.1.2.6 Pesticides produced from synthetic chemicals shall not be used.

2.1.2.7 The operator shall, as part of the organic management plan, address the potential risks from prior operations and consequences of external contamination with substances not permitted by this Standard. This may require the implementation of buffer zones/barriers and withdrawal of contaminated product/land from organic management practice.

2.1.2.8 In case of reasonable suspicion of land and/or product contamination, the operator shall take action to establish where the contamination has occurred and if so, respond appropriately and record the action taken.

2.1.2.9 Where product has been contaminated with non-permitted substances as a result of factors beyond the control of the operator, then the chemical residue tests of the product shall register less than 10% of the Maximum Residue Limit (see Clause 1.3.29) before the product can be labelled as 'organic', 'biodynamic' or 'in-conversion'.

2.1.2.10 An operator of organic or biodynamic production areas shall not routinely switch back and forth between organic and conventional production methods.

2.2 CONVERSION OF LAND

2.2.1 General principles

- (a) *Operation is converted to organic, biodynamic or in-conversion status by the application of organic management practices.*
- (b) *A production system may be identified as 'in-conversion' for reasons such as—*
 - (i) *the farming system has not operated within the requirements of this Standard for the specified period of three years; or*
 - (ii) *the farm does not meet the quality standards, e.g. soil structure is not yet considered appropriately developed, as necessary for organic farms; or*
 - (iii) *the overall organic management system is not sufficiently developed (e.g. reliance on inputs is too high).*

2.2.2 Requirements

2.2.2.1 From the beginning of the second year the land is under organic management practices, product from such units shall be labelled as 'in-conversion'.

2.2.2.2 Land under in-conversion systems shall progress to organic status not less than three years from commencing organic management practices.

2.2.2.3 Where the whole enterprise is not converted at the same time and parallel production is carried out the following requirements apply:

- (a) Only perennial plants shall be permitted, and for no longer than 5 years.
- (b) The organic management plan shall ensure that product complying with this Standard is—
 - (i) distinguishable from product that does not comply with this Standard;
 - (ii) harvested separately and segregated from product that does not comply with this Standard; and
 - (iii) handled, and precautions taken, to avoid contamination with substances not permitted under this Standard.
- (c) The use of gene technology or nano technology shall not be permitted.

2.2.2.4 Where an operator conducts a number of separate enterprises on their farm and begins a conversion program with one or more enterprise(s) only, all of the enterprises shall be converted to organic production within 10 years.

2.2.2.5 In-conversion areas shall not be routinely switched back and forth between organic and conventional production methods.

2.3 GENE TECHNOLOGY

2.3.1 General principles

- (a) *Products or by-products that are derived from gene technology are not compatible with the principles of organic and biodynamic agriculture.*

- (b) *Before purchasing or committing new production areas to organic or biodynamic operations, operators need to assess the risk from production areas that have previously grown or produced crops or livestock that were subject to gene technology or genetically modified organisms to ensure they are able to meet the expectation of freedom of their organic or biodynamic products from gene technology or contamination.*

2.3.2 Requirements

2.3.2.1 Genetically modified organisms or their derivatives shall not be used. This includes but is not limited to, animals, seed and farm inputs, such as fertilizers, soil conditioners, vaccines, crop production materials, food additives and processing aids.

2.3.2.2 Operators shall implement a documented risk management process as part of the organic management plan to assess how they will avoid the accidental introduction of genetically modified organisms to the organic farm. These actions may include, but are not limited to—

- (a) knowing about contaminant risks;
- (b) implementing distances/buffer zones from potential contaminants;
- (c) implementing special handling, transport and storage arrangements;
- (d) maintaining samples; and
- (e) testing crops perceived to be at risk.

2.3.2.3 Inputs, processing aids and ingredients shall be traced back one step in the biological chain to the organism from which they were produced to verify that they are not derived from genetically modified organisms.

2.3.2.4 Where crops or livestock have been produced using gene technology within a production unit, a risk management plan shall be in place in the organic management plan to mitigate against future contamination from such organisms of both the farm environment and end products destined to be labelled as ‘organic’, ‘biodynamic’ or ‘in-conversion’ in accordance with this Standard. This shall include an extension of the conversion period for the farm where such risks cannot be, or have not been, shown to have been managed to prevent contamination with such prohibited substances.

2.3.2.5 The labelling of organic and biodynamic crops, livestock or agricultural products shall not be permitted where gene technology is used to grow or produce crops, livestock or agricultural products on the same farm.

2.4 BIODIVERSITY AND LANDSCAPE MANAGEMENT

2.4.1 General principles

Organic agriculture maintains, enhances and utilizes the benefits obtained from natural biodiversity, agro-biodiversity, and the diversity of the landscape at all its levels. This is achieved through:

- (a) *Genetic diversity in plants and animals as a contribution to conservation and development of genetic resources and to increase resilience of the farm ecosystem.*
- (b) *Species diversity of native, non-native and cultivated species.*
- (c) *Ecosystem diversity providing habitat quality and connectivity of ecosystems.*
- (d) *Landscape diversity including its historic character and ecological, social and cultural functions.*

2.4.2 Requirements

2.4.2.1 Operators shall have a farm biodiversity and landscape management plan as part of their organic management plan.

2.4.2.2 Production units greater than four hectares shall have 5% of their property as treed areas, grasslands, rangelands, wetlands, waterways (including lakes, ponds and streams) or other reserves that are not cultivated and not intensively farmed, within five years from the date the production unit attains in-conversion status.

2.4.2.3 *Specific requirements for each diversity described under the general principles*

2.4.2.3.1 Genetic diversity

Operators shall not reduce unnecessarily genetic diversity of crops, plants and animals.

2.4.2.3.2 Species diversity

- (a) Operators shall identify and protect priority species (rare and endangered) for their farm and demonstrate that these species are not threatened by organic production.
- (b) Lethal removal of animal species that threaten agricultural production and ecological balance shall be done humanely, ecologically and only after other methods permitted in this Standard have been reasonably assessed as ineffective.

2.4.2.3.3 Ecosystem diversity

- (a) Areas in primary ecosystems (either undisturbed or fully recovered) cannot be used for the production or preparation of products or ingredients of products, labelled as complying with this Standard. Exceptions to this provision are allowed where production complies with Clauses 2.9 and 2.20.
- (b) Operations shall not impinge upon designated protected areas.
- (c) Habitats that contain priority species shall be protected, maintained and enhanced according to the needs of that species.

2.4.2.3.4 Landscape diversity

Operators shall protect historical, sacred and cultural landscape elements. Operators shall show evidence of identification of key landscape diversity elements, and document management strategies for preservation of these elements. Where production circumstances may compromise the integrity of any element, and there is sufficient proof that all adequate alternatives have been investigated, exception from this provision may be sought on a continuing basis provided Clause 2.23.2 is satisfied.

2.5 SOIL MANAGEMENT

2.5.1 General principles

- (a) *Healthy soil is the prerequisite for healthy plants, animals and products. With organic farming, the care of a living soil and consequently the maintenance or improvement of soil structure, fertility and nutrient cycling is fundamental to all measures adopted.*
- (b) *Sufficient organic material needs to be regenerated and/or returned to the soil to improve, or at least maintain, humus levels. Conservation and recycling of nutrients is a major feature of any organic farming system.*
- (c) *Organic management practice aims to minimize the use of off-farm inputs, but also has regard to the need to optimize soil and animal health.*

2.5.2 Requirements

2.5.2.1 The fertility and the biological activity of the soil shall be maintained or increased by any combination of the following methods:

- (a) Use of legumes, green manure crops or perennial deep-rooting plants in an appropriate rotation program.
- (b) Sheet composting using animal manures. Where these are used, at least two green manure crops shall be grown before the area is planted to crops intended for human consumption.
- (c) Application of fully composted organic matter derived from selected sources as listed in Paragraph B3.
- (d) Application of Biodynamic Preparations and methods.
- (e) Tillage techniques that preserve or improve soil structure.
- (f) Incorporation of livestock into the farming system.

2.5.2.2 The use of off-farm fertilizers (as listed in Paragraph B3) shall be regarded as a supplement to nutrient recycling, not as a replacement for nutrients generated on the farm.

2.5.2.3 Records shall be kept of the nutrient inputs (i.e. source, amount and use).

2.5.2.4 Soils shall be cultivated using implements and techniques that maintain or improve soil structure.

2.6 WATER MANAGEMENT

2.6.1 General principles

- (a) *Water and agriculture are inextricably linked. The harvest, storage, use and fate of water are integral components of an organic farm. Management of water will include management of vegetation, soil and drainage on the organic or biodynamic farm.*
- (b) *Recycling of water is carried out where possible.*
- (c) *Surface water leaving an organic farm does not contain greater levels of nutrients, salts and turbidity than when the surface water entered the farm.*

2.6.2 Requirements

2.6.2.1 On-site harvest of water for agricultural use (including stock water, aquaculture, irrigation and processing) shall allow for maintenance of on-farm and local ecosystems that are under the immediate influence of the operator. Provision shall be made for environmental flows to maintain existing riverine health, wetlands and biodiversity.

2.6.2.2 Where appropriate, operators shall design, measure and monitor irrigation water application to minimize water loss.

2.6.2.3 Water that is derived from sources that may introduce undesirable contamination, for example by non-permitted substances, to the property shall undergo a risk assessment to determine the level of monitoring and management required.

2.6.2.4 Water containing treated human and industrial effluents, and/or their treated by-products from off-site sources shall only be used—

- (a) after the water has been subject to effective treatments and has re-entered a public waterway system; or

- (b) if directly used for irrigation purposes, only after the water has been treated to such a level that state/territory authorities deem the water suitable for unrestricted agricultural use. Use of such reclaimed water shall only be applied to organic production areas if one or more of the following occurs:
 - (i) it is applied to green manure crops; or
 - (ii) it is applied to seedlings, prior to transplant; or
 - (iii) it is applied to any production system not designated for human or animal consumption; or
 - (iv) it is applied to grazing areas no less than 8 days before grazing; or
 - (v) for crops for human consumption, such reclaimed water may only be applied, and in such a manner as to preclude contact with any edible portion of the product during growth and harvest.

Use of such reclaimed water shall be documented.

2.6.2.5 Human and industrial wastewater that does not meet the requirements of Clause 2.6.2.4(b) shall only be used on timber producing wood lots, provided such application does not contribute to ground or surface water contamination. Such water sources shall be used with caution as they have the potential to exclude the land from future grazing and agricultural use under this Standard.

2.6.2.6 Raw animal liquid waste shall be from organic management practices that comply with this Standard and shall only be applied to green manure crops or pastures and never be directly applied to edible crops for human consumption. Application of such substances shall not contaminate ground water.

2.6.2.7 Adequate dams and/or drinking facilities shall be established to allow rotational grazing management. Establishment of such sites shall ensure overgrazing does not permanently occur near water sites.

2.7 PLANT PRODUCTION

2.7.1 General principles

- (a) *The crops and varieties grown are those best suited to local and regional conditions, the least susceptible to pest and disease, and of a good nutritional and physiological quality.*
- (b) *The proper choice of variety, stimulation of soil fertility, careful sowing and cultivation techniques (e.g. rotation, variety, use of mixed cropping, plant spacing, use of green manures) hinders the incidence of pests and diseases. Varied microenvironments such as decoy crops, tree lines and maintaining natural areas within the farm, provide favourable conditions for the natural enemies of pest and disease organisms.*
- (c) *In broad acre organic farming systems livestock are an integral part.*

2.7.2 Requirements

2.7.2.1 The growing of organic crops is a soil based activity, therefore growing in earthless media shall be prohibited. This includes hydroponics culture, nutrient-rich plastic films and similar methods and techniques.

2.7.2.2 The only exception to Clause 2.7.2.1 shall be the 'landless productions' covered under Clause 2.10.

2.7.2.3 Crop rotations shall be used to aid long-term soil fertility and ensure healthy plants. Operators shall include deep rooted and leguminous species within crop rotations.

2.7.2.4 Seedling production shall use products compatible with this Standard.

2.7.2.5 Organic plants shall be grown from organic seed or organic plant propagation material. New seeds and new vegetative reproductive material shall be considered organic when grown in accordance with this Standard for at least one generation or, in the case of perennial crops, two growing seasons.

2.7.2.6 Where an operator can actively demonstrate that material satisfying Clause 2.7.2.5 is not available in sufficient quality and quantity, the use of seed or vegetative reproductive material not in accordance with this Standard may be used.

2.7.2.7 Seed and transgenic plants of gene technology or nano technology derived substances shall not be used for treating plants.

2.8 PLANT PROTECTION

2.8.1 General principles

- (a) *Management practices rather than reliance on the substances for control of pests and diseases is one of the principal aims of organic agriculture.*
- (b) *Where used, mulches should be of natural materials.*

2.8.2 Requirements

2.8.2.1 Pests, diseases and weeds shall be controlled and/or managed by any of the following relevant practices:

- (a) Choice of appropriate species and varieties.
- (b) Biological control.
- (c) Appropriate rotation programs.
- (d) Specific biodynamic measures.
- (e) Mechanical controls such as traps and barriers.
- (f) Light and sound.
- (g) Mechanical cultivation.
- (h) Mulching and mowing.
- (i) Grazing of livestock.
- (j) Protection of natural enemies of pests through provision of favourable habitats (e.g. hedges, nesting sites).
- (k) Flame/steam weeding.

2.8.2.2 Operators may use the inputs permitted in Paragraph B4, only in cases of imminent or serious threat to the crop and where the measures identified in Clause 2.8.2.1 are, or may be ineffective. Operator records identifying the reasons for use of inputs shall be kept.

2.8.2.3 Mulching materials shall not contain substances prohibited by this Standard and their use shall be documented.

2.8.2.4 Where permitted woven plastic/synthetic materials are used, their complete retrieval from the production area after use shall be undertaken.

2.8.2.5 Solid non-woven plastic or synthetic material sheets for mulching are not permitted. Plastic film mulch is permitted on a restricted basis and use shall comply with all conditions and restrictions as described in Clauses 2.23.2 and 2.23.3.

2.9 HARVEST OF PLANTS FROM NATURAL ENVIRONMENTS

2.9.1 General principle

The collection of plants and parts thereof, growing naturally in pristine areas can be classed as an organic production method.

2.9.2 Requirement

The following criteria shall be met before products can be labelled as 'organic':

- (a) Products shall be sourced from a clearly defined collection area.
- (b) Collection areas have received no treatments with products other than those permitted in Appendix B for a period of not less than three years before any collection.
- (c) Where the collection area is grazed by livestock, the livestock shall be managed in accordance with this Standard.
- (d) The collection of plants or parts thereof by the operator and/or other operators within the collection area shall not disturb the stability of the natural habitat or the maintenance of the species in the collection area.

2.10 LANDLESS PRODUCTION SYSTEMS

2.10.1 General principle

Landless production systems refer to plant products where production is not linked directly to the soil.

2.10.2 Requirements—General

2.10.2.1 The requirements of this Standard shall be applied to the production unit for two production cycles or 3 months, whichever is the greater, before products can be labelled as 'organic' or 'biodynamic'.

2.10.2.2 Under this system, parallel production shall not be permitted.

2.10.2.3 Only substances permitted in Appendices B and C shall be used for pests and disease management or for sanitation purposes.

2.10.3 Requirements—Mushroom production

2.10.3.1 Mushrooms grown in a natural environment shall comply with the requirements stipulated in Clause 2.9.

2.10.3.2 Buildings used for mushroom growing shall be dedicated exclusively to organic production.

2.10.3.3 Healthy growing environment shall be maintained by the use of preventative pest and disease management, sanitation, proper airflow and removal of spent material. To assist this process, the following methods shall be employed:

- (a) Controlled atmosphere (airtight vessels containing carbon dioxide or nitrogen, infrared radiation and forced air circulation).
- (b) Physical and barrier methods for fly and pest control, along with substances permitted in Paragraph B4.

2.10.3.4 Growing equipment/trays shall be new or sanitized.

2.10.3.5 Cleaning and sanitization using steam, heating, ethanol and hydrogen peroxide treatment of buildings and equipment is allowed. Other sterilization or sanitation substances are allowed for buildings, growing containers or any other equipment provided they are permitted in Paragraph C1.

2.10.3.6 Only organically sourced spawn shall be used.