



Module 13

Processing Standard

Incorporates:

- Processing
 - Packing
-

This document replaces the BIO-GRO New Zealand Organic Standards, 30 April 2001: Module 4.5

The reasons for change are:

- regular review required under IFOAM accreditation;
- incorporation of notified changes since the 30 April 2001 Standards were published;
- incorporation of other changes required for ongoing compliance with the IFOAM Basic Standards, the NZFSA OOAP, and overseas market regulations;
- organic production systems are continuously evolving.

This document may be altered at any time. It was current at the date in the header of each page of the document. It is recommended that anyone intending to use this document contact BioGro or check the BioGro website www.biogro.co.nz to confirm that this is the current version.

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Table of Contents

1	Scope and purpose	3
2	References	3
3	Definitions	3
4	General Standards	4
4.1	Introduction	4
4.1.1	General guidelines for all processed food products	4
4.1.2	Food safety requirements	4
4.1.3	Environmental impact	4
4.1.4	Processing of producer-owned produce	5
4.1.5	Processing after change of ownership of the product	5
4.1.6	Parallel processing	5
4.2	Ingredient specifications	5
4.2.1	Weight definitions	5
4.2.2	Water	5
4.2.3	Certification of ingredients	5
4.2.4	BioGro certified products	6
4.2.5	Recertification of ingredients certified by other certifiers	6
4.2.6	Use of certified conversion or uncertified ingredients	6
4.2.7	Mixtures of a certified and uncertified ingredient	7
4.2.8	BioGro conversion products	7
4.2.9	Additives and processing aids	7
4.2.10	Procedure for the consideration of use of additives and processing aids in certified products	7
4.3	Processing methods and requirements	9
4.3.1	Preserving methods	9
4.3.2	Pest control	9
	a. Recommended pest treatments	9
	b. Permitted treatments	9
	c. Restricted treatments	9
	d. Prohibited treatments	10
	e. Non-compliant products	10
4.4	Packaging	10
4.4.1	Introduction	10
4.4.2	Neutrality	10
4.4.3	Energy efficiency	10
4.4.4	Adhesives	11
4.5	Labelling	11
4.5.1	Label wording general requirements	11
4.5.2	Labelling requirements for product claims / descriptions and ingredient lists	11
	a. Ingredients declaration	11
	b. Ingredients list	11
	c. Labelling of BioGro certified organic products	11
	d. Labelling of BioGro certified conversion products	11
	e. Labelling of products with 70–95 percent BioGro certified or conversion ingredients	12
	f. Labelling products with less than 70 percent BioGro certified or conversion ingredients	12
4.6	Transport, storage and distribution	12

Table of Contents

5	Specific Standards	13
5.1	Meat	13
5.1.1	Introduction	13
5.1.2	Transport	13
5.1.3	Slaughter	13
5.1.4	Chemicals	14
	a. Insecticides	14
	b. Rodenticides	14
	c. Sanitising, cleaning and adhesive materials	14
5.1.5	Carcass marking	14
5.1.6	Food additives and preserving methods	14
5.1.7	Withholding periods	14
5.1.8	Sale of meat products	14
5.1.9	Smoking of meat products	15
5.2	Dairy	15
5.2.1	Introduction	15
5.2.2	Certification of Premises	15
5.2.3	Purity	15
	a. Damage, contamination and adulteration	15
	b. Equipment cleaning and sanitising	15
	c. Permitted cleaning and sanitising products	15
	d. Restricted cleaners	16
5.2.4	Pasteurisation of milk	16
5.2.5	Butter	16
5.2.6	Yoghurt and other cultured products	16
5.2.7	Cheese	16
5.2.8	Sour milk products	17
5.2.9	Sour milk cheese	17
5.2.10	Cream	17
5.2.11	Ice-cream	17
5.2.12	Other ingredients	17
5.3	Vegetables and fruit	17
5.3.1	Integrity of produce	17
5.3.2	Fruit and vegetable juices	17
	a. Recommended processes	17
	b. Permitted additives and processing aids	17
	c. Restricted additives	18
	d. Copper residues	18
5.3.3	Jams, relishes, chutneys etc.	18
5.3.4	Storage and transport	18
5.4	Beer	18
5.4.1	Yeasts	18
5.4.2	Other ingredients	18
5.4.3	Pasteurisation	18
5.4.4	Bottling and containers	18
	a. Allowed materials	18
5.5	Wine refer Module 10 Viticulture and Winemaking	19
5.6	Seafood	19
5.6.1	Processing	19
5.6.2	Additives and processing aids	19
5.6.3	Smoking	19

1 Scope and purpose

This BioGro Standard contains the production requirements and audit criteria for the certification and licensing by BioGro of processors of organic products to use the BioGro trademarks and logos.

This BioGro Standard specifies the production requirements that must be met by all:

- Processors of organic products certified by BioGro; and
- Processors of organic products licensed by BioGro to use the BioGro trademarks and logos.

All organic products bearing the BioGro trademarks and logos are processed in accordance with this Standard.

Information on BioGro, applying for certification, and the use of the BioGro trademarks/logos can be obtained from *Module 1 Introduction* and *Module 3 Certification System*.

2 References

All relevant regulations and industry requirements must be complied with.

3 Definitions

The BioGro definitions of terms can be found in the BioGro Standards *Module 2: Glossary of Terms*

4 General Standards

4.1 Introduction

In all cases the requirements of these Standards are in addition to any New Zealand food, food safety, health, and labelling legislation. Certified producers must be in compliance with all relevant New Zealand national and local body regulations, and all relevant regulations for any export market(s) their products will be exported to.

4.1.1 General guidelines for all processed food products

The processing methods used must aim to conserve the composition of the ingredients in order to maximize the nutritional value and flavour of the the final product. The goal is to minimise processing or degradation of the raw materials/ingredients in the production process of the final product.

The following types of processes are allowed subject to approval from BioGro for the specific process(es) and materials used:

- mechanical and physical;
- biological;
- extraction: note that extraction can only take place with water, ethanol, plant and animal oils, vinegar, carbon dioxide, and nitrogen. These must be of a quality appropriate for their purpose;
- precipitation; and
- filtration (Note that filtration substances must not be made of asbestos nor may they be permeated with substances that may negatively affect the product). Filtration techniques that chemically react with or modify organic food at the molecular level are restricted and require written approval from BioGro.

The following types of processes are expressly prohibited:

- genetic modification and
- irradiation.

4.1.2 Food safety requirements

Processors are responsible for ensuring that their processing systems are in compliance with all relevant regulatory requirements and accepted good management practices, and that they have a food safety programme in place where this is required by regulatory bodies.

Processors must also comply with the requirements of this Module in addition to all regulatory requirements in order to gain BioGro certification for their products.

Disclaimer: The requirements of this Module are not designed to specify any particular means or method of production, and accordingly BioGro accepts no liability from persons following these requirements.

4.1.3 Environmental impact

Processing must minimise environmental impact with respect to energy use, waste products and pollution.

4.1.4 Processing of producer-owned produce

Processing of producer-owned produce must be in facilities that have current BioGro certification, or where the operator of that facility is a sublicensee of the certified producer. Where the operator of that facility is a sublicensee of the certified producer, then they must comply in full with the requirements for certification of non-primary producers, refer *Module 3 Certification System*, Section 6. In the sublicensing situation, the certified producer is responsible for the requirements of the certification process and the associated audit fees, refer *Module 3 Section 7.10*.

4.1.5 Processing after change of ownership of the product

Where ownership changes prior to processing, each facility through which the produce passes must have current BioGro certification as a processor to ensure that there is “chain of custody” for the product right through to the finished product stage. This means that responsibility for the integrity of the product must be with either a certified operator or a sublicensee at all times.

4.1.6 Parallel Processing

Where a facility processes both certified and non-certified products then that facility must have:

- a. adequate identification and separation systems in place which ensure that certified products (including ingredients) can not be commingled with uncertified products or products of different certification status;
- b. adequate cleaning, rinsing, pest management, and storage systems which ensure that certified products can not be contaminated in any way.

4.2 Ingredient specifications

Applications for certification must contain full details on all ingredients, additives, and processing aids, and the recipe (including the percentage that each ingredient comprises of the recipe) for all products to be certified.

GMOs are specifically prohibited as ingredients in certified products.

4.2.1 Weight definitions

All references made to percentage ingredients must be based on percentages by weight. Salt and water are not included in the percentage calculations of organic ingredients.

4.2.2 Water

Water used must be potable. Evidence of water potability is required by BioGro.

4.2.3 Certification of ingredients

100 percent of the ingredients of agricultural origin must be BioGro certified organic where available in sufficient quantity and quality.

Where some of the ingredients are not available as BioGro certified, then BioGro can consider approving some ingredients that are certified by another certifier, or are certified conversion, or are uncertified, subject to sections 4.2.4 – 4.2.6 below. To apply for this consideration processors must provide BioGro with documentation to confirm that BioGro certified ingredients are unavailable, and provide documentation in support of the relevant requirements of sections 4.2.4 – 4.2.6 below.

As BioGro approval may not be given, processors must not purchase such ingredients in the expectation that they will be approved prior to receiving written approval from BioGro for their use.

As BioGro certified ingredients become available they must be used instead.

4.2.4 BioGro certified products

Subject to 4.2.3 above, for a product to have BioGro certification it must contain a minimum of 95 percent BioGro certified ingredients or BioGro recertified ingredients, refer section 4.2.5 below. The remaining 5 percent may, in cases where BioGro certified or recertified ingredients are not available, include certified conversion ingredients, or, in cases where certified conversion ingredients are not available, uncertified ingredients that have been approved, in writing, by BioGro prior to use. This includes additives, processing aids, and ingredients of non-agricultural origin, refer 4.2.9, 4.2.10 and *Appendix C*. Approval to use such conversion or uncertified ingredients in the 5 percent allowance must be sought for each product, refer 4.2.6 below.

4.2.5 Recertification of ingredients certified by other certifiers

Prior to sourcing non-BioGro certified ingredients, processors must contact the BioGro office for information on the evaluation procedure for recertification. As BioGro approval may not be given, processors must not purchase ingredients not certified by BioGro in the expectation that they will be approved, prior to receiving written approval from BioGro for their use.

If a particular ingredient is not available as BioGro certified then that ingredient certified by another IFOAM accredited certifier may be able to be used, subject to prior written approval by BioGro¹. Any evaluation required by BioGro to recertify that ingredient will be at the certified processor's cost.

If an ingredient certified by another IFOAM accredited certifier is not available, then that ingredient certified by a non-IFOAM accredited certifier may be able to be used, subject to a recertification evaluation by BioGro. This evaluation is required to confirm that the production of that ingredient complies with the requirements of the BioGro Standards. This evaluation will be at the certified processor's cost.

As BioGro certified ingredients become available they must be used instead.

4.2.6 Use of certified conversion or uncertified ingredients

Except as specified under sections 4.2.3 – 4.2.5 above, 100 percent of the ingredients must be certified organic.

Where certified ingredients are not available, then written approval to use conversion or uncertified ingredients within the 5 percent allowance must be obtained from BioGro. Processors must provide BioGro with documentation to confirm that certified ingredients are unavailable and documentation proving that any uncertified ingredients for which approval is sought do not contain any contaminants, including GMOs. Specification sheets and manufacturer declarations for these ingredients must be supplied to BioGro to enable assessment of those ingredients, and residue testing for contaminants may be required.

As BioGro approval may not be given, processors must not purchase conversion or uncertified ingredients in the expectation that they will be approved, prior to receiving written approval from BioGro for their use.

As certified ingredients become available they must be used instead and any unused conversion or uncertified ingredients otherwise disposed of.

Where the use of an uncertified ingredient has been approved by BioGro then the processor must continue to try to source that ingredient as certified, and to report on this to BioGro as part of their annual application for renewal of certification. Continuing use of an uncertified ingredient will only be approved where the processor supplies, at least annually, adequate evidence that that ingredient is still not available as certified in sufficient quantity and quality.

¹ While there is a multilateral agreement on certification transference amongst IFOAM accredited certifiers, there are some exceptions. Contact the BioGro office for further information.

4.2.7 Mixtures of a certified and uncertified ingredient

Within a certified product, there must not be any one particular ingredient in both certified and uncertified form.

4.2.8 BioGro conversion products

BioGro conversion products must contain only one ingredient of agricultural origin, and that ingredient must have a status of at least BioGro conversion, and must constitute at least 95 percent of the product. The remaining 5 percent may, in cases where BioGro certified ingredients are not available, contain non-BioGro certified or conventional ingredients that have been approved in writing by BioGro prior to use. This includes additives and processing aids of non-agricultural origin, refer 4.2.9, 4.2.10 and *Appendix C*.

4.2.9 Additives and processing aids

Additives and processing aids (refer 4.2.10 and *Appendix C*) can only be considered for use in order to:

- a. maintain the nutritional value of a product; and/or
- b. enhance the keeping quality or stability of the product; and/or
- c. provide the product with an acceptable composition, consistency and appearance provided that, in doing so, it does not deceive the consumer concerning the nature, substance and quality of the product;

and subject to the provision that:

- d. there is no possibility to produce a similar product without the use of that additive or processing aid; and
- e. it is not used to alter the speed of processing or to recreate or improve flavours, colours or nutritional value lost during processing; and
- f. it is not included in amounts greater than the minimum required to achieve the function for which it is permitted; and
- g. it contains no other substance not permitted in these Standards, and
- h. the total amount of additives, processing aids, and conversion and non certified ingredients is less than 5 percent of the recipe; and
- i. it is not a GMO.

Fortification with vitamins and minerals is not normally allowed. Fortification with natural ingredients may be able to be considered for some products such as infant foods.

Irradiation is not permitted as a processing aid.

Specification sheets and manufacturer declarations are required so that BioGro can assess that any additives and processing aids to be used are not genetically modified and/or are not the product of genetic modification.

4.2.10 Procedure for the consideration of use of additives and processing aids in certified products**a. Introduction**

Additives and processing aids considered for use can only be those listed in *Appendix C*. They must be evaluated and approved by BioGro before being used. Once approved, these products will be subject to periodic review in light of alternative products that may have become available in the interim.

The following aspects and criteria provide a rationale for approving additives and processing aids listed in *Appendix C* for certified products.

Irradiation is specifically prohibited as a processing aid or for other uses.

b. Necessity

Additives and processing aids are only allowed in certified products if:

- i. they are essential to the production;
- ii. the authenticity of the product is respected; and
- iii. the product cannot be produced or preserved without them.

c. Criteria for the approval of additives and processing aids

- i. There are no other acceptable technologies available to process or preserve the certified product.
- ii. The use of those additives or processing aids assists in minimising physical or mechanical damage to the foodstuff which might result from the use of other technologies.
- iii. The hygiene of the product cannot be guaranteed to be as effective by other methods, such as a reduction in distribution time or improvement of storage facilities.
- iv. There are no natural materials of approved quality and quantity, or other allowed processes that can replace the use of those additives or processing aids.
- v. The additives or processing aids do not compromise the authenticity of the product.
- vi. 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.
- vii. Additives and processing aids do not detract from the overall quality of the product.

d. Step by step procedure for consideration of the use of additives and processing aids

- i. Instead of using additives or processing aids, the preferred choice is:
 - certified ingredients which are used as a whole product or are processed in accordance with the BioGro Standards, e.g. flour used as a thickening agent or vegetable oil as a releasing agent; and
 - foods or materials of non-agricultural origin which are produced only by mechanical or simple physical procedures, e.g. salt.
- ii. The second choice is:
 - isolated food substances produced physically or by enzymes, e.g. starch, tartrates, pectin; and
 - purified products of materials of non-agricultural origin and micro-organisms, e.g. ascorbic acid, enzymes and micro-organism preparations such as starter cultures.
- iii. In certified products the following categories of additives and processing aids are not permitted:
 - “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 / modification; and
 - carriers and preservatives used in the preparation of additives and processing aids.

4.3 Processing methods and requirements

All equipment, contact surfaces, and processing premises must be cleaned under BioGro-approved procedures prior to processing of organic products.

Where the facility has parallel production then there must be adequate separation and identification systems to ensure that all ingredients of certified products and the certified products are protected from commingling and contamination by non-certified products.

4.3.1 Preserving methods

The following processes are permitted:

- freezing;
- salting;
- preserving in certified sugar syrup, honey or vinegar;
- sun drying, dehydration, and evaporation;
- vacuum packing, including use of pre-vacuum gas flushing using carbon dioxide, nitrogen, or approved inert gases;
- canning; and
- bottling.

Preserving products by smoking may be approved by BioGro depending on the materials and process used. Prior written approval must be obtained from BioGro.

4.3.2 Pest control

Pest control must be achieved primarily through good facility and site management practices.

a. Recommended pest treatments

Recommended treatments include:

- i. light, including UV-light traps;
- ii. physical barriers;
- iii. sound; and
- iv. ultrasound.

b. Permitted treatments

Permitted treatments include:

- i. controlled atmosphere;
- ii. diatomaceous earth;
- iii. traps, including pheromone traps;
- iv. temperature control; and
- v. BioGro certified materials such as baits.

c. Restricted treatments

Restricted treatments require prior written approval from BioGro. Restricted treatments include:

- i. Fumigation of processing plants, packhouses, and stores with restricted materials. Prior written approval must be obtained from BioGro if fumigation of the plant or store is being considered, either as part of the annual management plan, or due to a particular problem. BioGro will stipulate a withholding period dependent on the fumigation used, during which no certified products may be processed or stored.
- ii. Use of bait stations containing chemical/synthetic materials. Bait stations must be located outside product handling areas.

d. Prohibited treatments

All other pest control treatments are prohibited unless approved in writing by BioGro. In particular:

- i. irradiation is prohibited, and
- ii. fumigation with ethylene oxide, methyl bromide, or aluminium phosphide is prohibited.
- iii. the direct use or application of a prohibited method or material renders that product no longer certified. All necessary precautions must be taken to prevent contamination, including the removal of certified product from the facility, and measures to decontaminate the equipment and facilities. Application of prohibited substances to equipment and facilities must not contaminate certified product handled and processed therein.

e. Noncompliant Products

The certified producer must have a product recall procedure which includes covering the situation where a prohibited material(s) or practice(s) is used in a certified facility. The procedure must include the actions to be taken including:

- i. Removal of certified status and any labelling indicating certification from the affected product(s);
- ii. Removal of certified ingredients and product(s) from the facility;
- iii. Measures to be taken to decontaminate the equipment and/or facilities;
- iv. Timelines, and status of the facility, before certified ingredients and product(s) can be returned to the facility and the facility used again for certified handling and processing.

4.4 Packaging

4.4.1 Introduction

Packaging for certified products must be chosen with the aim of minimizing environmental impact.

Certified producers must obtain written approval from BioGro for any packaging and printing of that packaging for certified products. The following guidelines offer criteria for choosing packaging types for both retail packs and/or transportation.

4.4.2 Neutrality

The packaging, including any reused packaging or storage containers, must not contain any substance capable of contaminating the product during its maximum storage and shelf life.

Packaging materials, storage containers, or bins in contact with certified product must not contain any synthetic pesticides (including fungicides), preservatives, or fumigants.

4.4.3 Energy efficiency

Packaging choice must consider the energy content of the packaging. This criterion will best be met if the package can be reused as many times as possible, or recycled. However it is acknowledged that there may be limited options available for some products. The factors to consider are:

- a. The total quantity of packaging must be minimised.
- b. Renewable/recyclable materials must be used in preference to non-renewable/non-recyclable materials.
- c. Packaging materials should compact easily to reduce space in trucks and landfills, and should be compatible with any other endpoint disposal methods such as incineration.

4.4.4 Adhesives

In order to facilitate the reuse of glass containers, labels and adhesives must be of a type which will be easily removed in a standard glass washing process.

4.5 Labelling

Labelling must convey clear and accurate information on the organic status of the product. Labelling must comply with all regulatory requirements.

4.5.1 Label wording general requirements

- a. Product labels must list processing procedures that influence the properties of the product in ways that are not immediately obvious.
- b. It is recommended that the label should specify that additional product information is available on request.
- c. For traceability, the label must include a batch number. It is recommended that the label also include a use-by date where appropriate.
- d. The licensee must be clearly identifiable on the label. If the word BioGro and/or the logo is used, then the licensee's BioGro number must be stated on the label also, preferably beneath the logo or with the phrase "BioGro no."
- e. All proposed labelling and packaging design using the BioGro trademark/logo or wording referring to BioGro certification, including the use of stickers supplied by BioGro, must have written approval from BioGro prior to printing.

4.5.2 Labelling requirements for product claims / descriptions and ingredient lists

- a. **Ingredients declaration**
All ingredients must be declared.
- b. **Ingredients list**
All ingredients in a multi-ingredient product must be listed on the product label in order of their weight percentage from highest to lowest and in compliance with the requirements of the Australia New Zealand Food Standards Code. It must be apparent which ingredients are of organic certified origin and which are not. All additives and processing aids must be listed with their common name, e.g. baking powder, as well as their E number or chemical name.
- c. **Labelling of BioGro certified organic products**
Certified products satisfying the requirements of section 4.2.3 – 4.2.4 above may refer to "certified organic", "organic", "organically grown", "organically produced" or similar in the product description and may use the BioGro trademark/logo.
- d. **Labelling of BioGro certified conversion products**
Certified products satisfying the requirements of section 4.2.8 above may use the phrase "Product under conversion to organic farming, certified by BioGro" in the product description. These words must appear in a colour, size and style of lettering which is not more prominent than the sales description of the product, and the words "organic farming" and "certified by BioGro" must have equal prominence and not be more prominent than the words "product under conversion to". Such products can not bear the BioGro logo, but may bear the BioGro trademark name as specified in the above phrase, and/or the BioGro Conversion logo.

e. Labelling of products with 70–95 percent BioGro certified or conversion ingredients

Certified products containing more than 70 percent (refer section 4.2.1) but less than 95 percent BioGro certified or conversion ingredients must not refer to “certified organic”, “organic”, “organically grown”, “organically produced”, “conversion” or similar in the product description. Indication that ingredients of the product have been produced organically may be made in the list of ingredients, e.g. “organic honey”. These indications must appear in the same colour and with an identical size and style of lettering as the other indications in the list of ingredients. A separate statement such as “x percent of the agricultural ingredients were produced in accordance with the rules of organic production” may be set in the same visual field as the sales description. The statement may not appear in a colour, size or style of lettering which is more prominent than the sales description of the product. There must be:

- i. a clear listing of the individual certified ingredients and their status, e.g. BioGro certified; and
- ii. a separate list of all non-certified ingredients.

j. Labelling products with less than 70 percent BioGro certified or conversion ingredients

Certified products containing less than 70 percent BioGro certified or conversion ingredients must not refer to “certified organic”, “organic”, “organically grown or produced” or “conversion” or similar, in the product description. However, there can be an indication that an ingredient is organic or conversion in the ingredient list.

4.6 Transport, storage and distribution

Processors must comply with the requirements of *Module 14 Distribution Standard* for distribution, including exporting of certified products. In particular note the requirements of Section 4.9 of that Module for exporting of certified products to regulated markets.

The following conditions of storage are permitted:

- a. Controlled atmosphere;
- b. Temperature control;
- c. Drying;
- d. Humidity regulation.

5 Specific Standards

5.1 Meat

5.1.1 Introduction

Killing, cutting, packing, marking and further processing of meat is subject to regulatory, industry, and market access requirements. There are added requirements for BioGro certification of meat for:

- Transportation of certified livestock, and
- Identification of certified livestock and products during transport, on arrival and in pens at the meat processing facility, and during processing, and
- Separation of certified livestock and products during transport, on arrival and in pens at the meat processing facility, and during processing, and
- Cleaning prior to organic processing.

5.1.2 Transport

Transport of livestock for slaughter must minimise any pain and distress to the animals.

- a. All animals presented for transportation must be in a condition that enables them to endure the stress of travel.
- b. Animal handling methods during loading must minimise avoidable stress. Electric goads and prodders are prohibited.
- c. Transport vehicles and loading facilities must be clean and free from protrusions that could cause bruising and/or injury.
- d. Transportation must provide adequate ventilation and comfortable headspace so that the animal is able to stand in a natural position.
- e. Transportation must conform to all relevant livestock transport quality assurance standards.
- f. Long periods of transport in extreme weather conditions must be avoided.
- g. Slaughterhouse journey times must not normally exceed 8 hours. If there is no certified slaughter house within eight hours of the farm then this time may be extended, subject to prior written approval from BioGro. Under normal conditions, subject to the requirements of *Module 5 Livestock Production* Section 4.8.1 a – e, sheep and goats must not have more than 8 hours without water and 16 hours without food, and adult cattle must not have more than 12 hours without water and 24 hours without food.
- h. No chemically synthesised tranquilisers or stimulants must be given prior to, or during transport.
- i. All certified livestock must be clearly and permanently identifiable so that no confusion with uncertified stock is possible.

5.1.3 Slaughter

- a. Stock must be loaded, transported, unloaded, and penned in accordance with *Module 5 Livestock Production* Section 4.8.1 a – f and *Module 13 Processing* Section 5.1.2.
- b. Slaughter of stock must minimise physical pain and distress to the animals.
- c. All animals must be routinely stunned prior to slaughter and the stunning method used must result in insensibility that lasts until death intervenes.
- d. Following slaughter, processing system protocols must ensure that all certified meat products:
 - i. retain their identity;
 - ii. do not come into contact with prohibited materials or uncertified products;
 - iii. are not mixed with uncertified products;
 - iv. are not handled or treated in any ways which do not comply with the requirements of the BioGro Standards; and
 - v. can always be traced back to the primary producer.

5.1.4 Chemicals

Chemicals used must be approved for use in edible product areas in fish, game and meat processing premises. The following further restrictions apply when certified stock is being processed:

a. Insecticides

Insecticides which have rapid “knockdown” and no residual activity can be used in areas where certified edible products are being processed, provided that:

- i. only products permitted or restricted in the BioGro Standards, or products approved in writing by BioGro are used;
- ii. no certified meat is in the area during application;
- iii. after insecticide use, all contact areas are washed down with potable water prior to the introduction of certified edible product to the area; and
- iv. the restrictions as described in relevant regulatory and industry requirements are applied in relation to insecticide odours, confinement of sprays and mists, labelling, storage of insecticides, and the use of insecticidal fume bombs.

b. Rodenticides

Rodenticides must not be used in certified edible product areas within 5 days of the commencement of certified meat slaughter and processing. Contact surfaces must be thoroughly washed before certified meat is reintroduced to the area.

c. Sanitising, cleaning and adhesive materials

- i. Only products either Permitted or Restricted in the BioGro Standards, or products approved in writing by BioGro, are permitted to be used in areas where certified edible products are being processed.
- ii. Chemicals must not be sprayed or otherwise applied when certified edible product is in the area. All contact areas must be washed down with potable water after the use of any sanitising or cleaning materials if edible certified product is to be processed.

5.1.5 Carcass marking

Marking agents must be approved in writing by BioGro before use.

5.1.6 Food additives and preserving methods

Food additives and preserving methods for meat processing must comply with all other requirements of this Module.

5.1.7 Withholding periods

Veterinary treatments have specified withholding periods for stock treated with that product. During this withholding period stock must not be slaughtered. Even after this withholding period, such stock can only regain BioGro certification and hence be slaughtered as BioGro certified when all requirements of *Module 5 Livestock Production Standard* have been met.

5.1.8 Sale of meat products

Meat and meat products for sale must at all times be clearly identifiable and able to be traced back (from point of sale through the processor) to the primary producer(s) by audit. Certified meat and meat products must be isolated from all uncertified meat and from possible contamination and prohibited materials at all times, both during transit and at point of sale. BioGro must have approved the packaging, labelling and audit trail.

5.1.9 Smoking of meat products

Smoking of meat products may be permitted depending on the materials and process used. Prior written approval must be obtained from BioGro.

5.2 Dairy

5.2.1 Introduction

Milk and dairy products must be produced from certified animals.

The following generic processes are allowed subject to approval from BioGro for the specific processes and materials used:

- mechanical and physical;
- biological;
- extraction;
- precipitation;
- filtration (Note that filtration substances must not be made of asbestos or permeated with substances that may negatively affect the product); and
- heat treatments subject to sections 5.2.4 – 5.2.10 below.

5.2.2 Certification of Premises

If milk is processed or packaged, the premises involved must be certified by BioGro to ensure that the integrity of the milk and milk products is maintained through to the final product.

5.2.3 Purity**a. Damage, contamination and adulteration**

Every effort must be made to minimise physical damage, biological and chemical contamination or adulteration of milk.

b. Equipment cleaning and sanitising

Cleaning and sanitizing procedures must have BioGro's written approval. Regulatory and industry requirements for dairy premises and equipment must be also be followed, providing that materials come from those listed below. The approved procedures must include that after cleaning and sanitizing, and prior to an organic processing run, all milk contact surfaces must be thoroughly flushed with potable water, or there must be an intervening event, to ensure that the certified products are not contaminated with any cleaners or sanitizer products.

c. Permitted cleaning and sanitising products

The following materials are permitted for cleaning and sanitising of premises, equipment and utensils:

- i. alcohol;
- ii. caustic potash (potassium hydroxide);
- iii. caustic soda (sodium hydroxide);
- iv. citric, paracetic, formic, lactic, oxalic and acetic acids;
- v. iodine products;
- vi. hydrogen peroxide;
- vii. lime;
- viii. milk of lime;

- ix. natural essences of plants;
- x. nitric acid;
- xi. phosphoric acid;
- xii. potassium and sodium salt;
- xiii. quicklime;
- xiv. sodium carbonate;
- xv. sodium hypochlorite, e.g. as a liquid bleach;
- xvi. water; and
- xvii. steam.

d. Restricted cleaners

Subject to BioGro's written approval, industry approved detergents and sanitisers may be allowed as a restricted practice for dairy shed hygiene.

5.2.4 Pasteurisation of milk

Milk may be pasteurized. As a guideline, by heating to a minimum of 72°C for 15 seconds and a maximum of 75°C for up to 30 seconds.

5.2.5 Butter

- a. Approved salt may be used as an ingredient.
 - b. Cream for butter must not be subjected to high heat, as a guideline not above 95°C.
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5.2.6 Yoghurt and other cultured products

- a. Milk may be heated, as a guideline to a maximum of 82°C.
 - b. BioGro-approved bacterial starter cultures must be used.
 - c. Fruit, sweeteners and other additives must comply with all other requirements of the BioGro Standards.
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5.2.7 Cheese

- a. Milk for cheese making may be pasteurised in accordance with section 5.2.4 above.
- b. BioGro-approved rennets, coagulants, and cultures may be used. Specification sheets and manufacturer declarations must be supplied so that BioGro can assess the formulation of those products for compliance with the standards, and that the product is non-GMO.
- c. Approved salt may be used as an ingredient.
- d. Synthetic rennet, synthetic colourants and all other chemicals are prohibited, unless prior written approval is obtained from BioGro.
- e. Equipment must not be greased with liquid paraffin.
- g. Pure vegetable oils or greaseproof paper are permitted for coating and packaging.
- h. The following are allowed for coating:
 - i. beeswax;
 - ii. natural hard paraffin; and
 - iii. microcrystalline waxes.

These three materials can be mixed with each other. BioGro certified beeswax must be used where available. Natural hard paraffin and microcrystalline waxes must be free of additives, such as short chain polyolefine, polyisobutylene, butyl or cyclic rubber. Wax colouring can only be with natural colours.

5.2.8 Sour milk products

- a. Milk may be heated, as a guideline to a maximum of 90°C for a maximum of 10 minutes.
- b. To raise the dry matter content the following are permitted:
 - i. evaporation under vacuum;
 - ii. use of a down-draught evaporator under vacuum;
 - iii. use of a multiple stage evaporator under vacuum;
 - iv. addition of certified whey powder, and
 - v. other similar processes subject to BioGro's written approval.
- c. The finished product must not normally be further heat treated nor microwaved.

5.2.9 Sour milk cheese

Calcium carbonate is permitted up to 0.5 percent. If calcium carbonate is added, the added salt content must be as a guideline less than 2.5 percent.

5.2.10 Cream

Cream can be subjected to longer heat treatment, as a guideline at 62–65°C for up to 30 minutes.

5.2.11 Ice-cream

All ingredients and processing methods must comply with the requirements of this Module or be approved by BioGro.

5.2.12 Other ingredients

Other ingredients in dairy products are subject to all other requirements of the BioGro Standards.

5.3 Vegetables and fruit

5.3.1 Integrity of produce

At all stages of handling, in particular during sorting, washing, trimming, grading, packing, presentation and sale, certified products must not come into contact with, or be confused with, uncertified products. Prohibited materials must not be used while preparing certified produce for sale. The visual enhancement of produce for sale, e.g. waxing of fruit, may be carried out only with materials and processes approved by BioGro.

5.3.2 Fruit and vegetable juices**a. Recommended processes**

Recommended processes are:

- i. stainless steel and muslin for filtration;
- ii. untreated lemon juice, certified organic when available, as a preservative;
- iii. centrifugation; and
- iv. pasteurisation.

b. Permitted additives and processing aids

Refer 4.2.10 and *Appendix C*. Permitted additives for vegetable juices include preferably certified salt, or unrefined sea salt with no additives, or rock salt.

c. Restricted additives

Refer 4.2.10.

- i. ascorbic acid, restricted to less than 2 percent by volume; and
- ii. citric acid.

d. Copper residues

All certified juices must not have residual copper exceeding 10 percent of the levels stipulated by the *Australia New Zealand Food Standards Code*.

5.3.3 Jams, relishes, chutneys etc.

Reduction, pasteurisation and pureeing are all permitted.

5.3.4 Storage and transport

Fruit and vegetables can be treated, stored and/or packed using only the methods listed below:

- a. controlled atmosphere or gas saturation (CO₂, O₂, N₂);
- b. solar drying, dehydration, and freeze drying;
- c. dry ice;
- d. freezing;
- e. pure ice; and
- f. refrigeration.

5.4 Beer

5.4.1 Yeasts

Cultured or natural yeasts are allowed. No products containing genetically engineered or genetically modified materials are allowed, and documentation must be supplied to support this.

5.4.2 Other ingredients

Ingredients such as certified barley, malt, and hops are permitted. The malting process must be certified.

Water must be potable, and of good quality.

5.4.3 Pasteurisation

Pasteurisation is allowed as a restricted practice.

5.4.4 Bottling and containers

- a. Allowed materials
 - i. natural glass
 - ii. stainless steel
 - iii. metal caps
 - iv. cork seals
 - v. plastic containers

5.5 **Wine** *refer Module 10 Viticulture and Winemaking*

5.6 **Seafood**

5.6.1 **Processing**

- a. The quality of fish and shellfish must be maintained by chilling as soon as practical after harvest.
 - b. The temperature of the seafood must be monitored/recorded during transportation and storage.
 - c. The premises and handling of the product must comply with all regulatory and industry requirements. Processing systems must ensure that certified products retain their identity, are clearly separated from uncertified products and do not come into contact with prohibited materials.
 - d. All contact surfaces must be washed down with potable water before processing commences.
-

5.6.2 **Additives and processing aids**

Refer to 4.2.10 and Appendix C.

5.6.3 **Smoking**

Smoking of aquaculture products may be permitted depending on the materials and process used. Prior written approval must be obtained from BioGro.



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