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Demeter Production Standards for Biodynamic Agriculture 2011

Demeter New Zealand

These organic standards for the Demeter certification of biodynamic agricultural and horticultural production in New Zealand were developed by Demeter New Zealand, an enterprise of the Bio Dynamic Farming and Gardening Association in New Zealand (Inc.)

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1. General

1.1. Inclusions

- 1.1.1. These standards set the minimum requirements for use of the Demeter name and symbols in relation to biodynamic produce grown or sold in New Zealand.
- 1.1.2. Imported Demeter produce must meet the standards of Demeter International.
- 1.1.3. Only those products which have been verified by Demeter New Zealand as meeting the requirements of these standards may be traded using the Demeter name or symbols.

1.2. Scope

These standards contain details for primary production, with a few extensions into processing or packaging. The full requirements for processing Demeter produce are in *Demeter International Processing Standards* available from Demeter New Zealand or www.Demeter.net.

1.3. The Laws of New Zealand

Persons producing to these standards should familiarise themselves with and conform to applicable law. However, the Demeter Certification process assesses only against these standards, and Demeter New Zealand takes no responsibility for ensuring that licensees follow laws if they are not replicated in these standards.

1.4. Prohibitions

The following are specifically prohibited by these standards:

- a) inclusion of any genetically modified organism or its product;
- b) irradiation by ionising radiations;
- c) artificial production systems such as hydroponics or feedlots.

1.5. Interpretation

- 1.5.1. The meaning of these standards shall be that given by the Council of the Bio Dynamic Farming and Gardening Association (the owner of these standards), or by delegated authority, in its sole and absolute discretion.
- 1.5.2. In all appropriate cases the singular includes the plural and the masculine includes the feminine and vice versa.

- 1.5.3. All matters stated to be requirements for Demeter certification or full Demeter certification shall, unless the context indicates otherwise, also be requirements for certification *In Conversion to Demeter* or *Certified Organic by the Biodynamic Association*.
- 1.5.4. Items in these standards labelled “Comment” are not part of the requirements.
- 1.5.5. In all cases, where practices or materials need to be approved or permission is required, this shall be taken to mean approval or permission in writing from Demeter New Zealand.

2. Principles of Biodynamics

Human consciousness has evolved over time to the point where the individual is capable of experiencing him/herself as separate from Nature and natural processes.

In modern agriculture, this has led to the development of an industry in which humanity typically works on Nature toward its own ends, with the result of major and growing disruption to ecological balance.

Biodynamics acknowledges this capacity for self-consciousness but also recognises that the individual remains at the same time an integral and inseparable part of the natural world with the possibility of developing a relationship with Nature in a path of mutual development.

The challenge of the biodynamic farmer, through a working association with the natural world is to develop a different way of thinking about Nature and his/her place within it.

Through an awareness/understanding of the processes behind the outer manifestations of Nature, including those beyond the currently measurable/acknowledged, and in recognition of an inseparability, a relationship is sought whereby the farmer is able to serve and enhance the forces of Nature in an ongoing path of mutual development.

Biodynamic methods encourage individuals to work on different levels toward this end.

These include:

- a) application of sound organic principles;
- b) development of an attitude of respect for and interest towards Nature;
- c) the development of the farm, as far as possible, into a self-contained organism as the basic unit of a sustainable system, also called the farm individuality;
- d) sustainable practices which maintain and increase fertility without the use of synthetic fertilisers and chemicals;
- e) the keeping and breeding of healthy livestock in such a fashion that they are as far as possible able to perform all aspects of their innate behaviour;
- f) positive care of the environment, the avoidance of pollution and efficient water use;
- g) production of food of the highest nutritional quality;
- h) development of a healthy and balanced cultural, social and economic environment;

- i) development of associative business forms whereby a fair and equitable relationship is fostered between producer, distributor and consumer;
- j) acknowledgement and working with the influences of the wider Earth environment including sun, moon, planets and fixed stars;
- k) use of biodynamic preparations: These may be seen on one level as 'microbial inoculants' but can also provide the farmer with the opportunity for a more meditative approach and a chance to reflect upon and recognise the higher principles and various beings in Nature. Use of the biodynamic preparations aims to restore health to the farm individuality.

Biodynamics arises from lectures to farmers and a dialogue between them and Dr Rudolf Steiner. The lectures and discussions are known as the Agriculture Course, and may be found in books such as the 1993 translation by M. Gardner and C. Creeger published as *Spiritual Foundations for the Renewal of Agriculture, Bio Dynamic Farming and Gardening Association*, Kimberton, Pennsylvania.

3. How Demeter Certification Works

3.1. Nature of these standards

3.1.1. Organisation

These standards state principles, and requirements arising from those principles. Principles are statements of the practices on an ideal Demeter certified farm. Requirements are the minimum practices that must be adhered to in practice. These standards state methods or materials that may or shall be used. Methods or materials not stated in these standards may not normally be used.

3.1.2. Application

The application of these standards and the application of the Demeter International standards in New Zealand may be modified by technical bulletins issued by Demeter New Zealand. All Demeter standards shall be read in conjunction with such bulletins.

3.1.3. Unsanctioned materials and methods

Licensees or applicants wishing to use methods or materials not explicitly sanctioned by these standards may not do so without specific permission. For permission to be given Demeter New Zealand must be convinced that such materials and methods are in accord with the intent of these standards. It is the responsibility of those seeking to use such materials or methods to prepare and submit evidence accordingly.

3.2. Conversion and stand-down period

Principles:

Farms, gardens and orchards become Demeter certified after being managed to the Demeter standards for a specified period.

Requirements:

3.2.1. Full certification

Full Demeter certification of primary producers takes at least three years from the time the primary producer enters the conversion period, that is, is recorded as having begun conversion to biodynamic management.

3.2.2. First certification

In Conversion to Demeter certification is normally granted not less than one year after the date the primary producer enters the conversion period.

The Demeter conversion period normally begins on the date the first full set of Demeter application forms are received by Demeter New Zealand. Prior periods are not counted, except where an organic certification is held.

In Conversion to Demeter certification shall not normally be held for more than five years.

A full year's farming to the standards at the time of inspection is required before the first grant of certification.

3.2.3. Registration period

During the first twelve months, or longer if required by Demeter New Zealand (the registration or C0 period) no certification is possible, nor is any reference to Demeter or Demeter certification allowable in the marketing of produce. (Comment: This was previously called the stand-down period.)

3.2.4. Transfer

Applicants who already have an organic certification such as BioGro New Zealand certification may gain Demeter certification in a shorter time, normally not less than one year but depending on specific circumstances. Copies of reports of audits must be made available if requested.

3.2.5. Reconversion

Where the use of a prohibited material or process or other breach of these standards leads to land and/or a product losing certification, a reconversion period is normally necessary. The provisions of 3.2.1., 3.2.2. and 3.2.3 above will normally apply as if the certification application is a new one, but Demeter New Zealand may permit a shorter period of reconversion if it is satisfied that the intention of these standards will not be breached.

3.3. Farm Management structure

Principles:

Demeter licensees are individuals or organisations who are able to demonstrate day to day management and control of their enterprise.

Requirements:

3.3.1. Person specification

Applicants shall be paid up members of the Bio Dynamic Farming and Gardening Association or shall join simultaneously with making a Demeter application.

Licensees shall maintain paid up membership. Membership information is available from the Association office or from www.biodynamic.org.nz.

Applicants shall, by their management history, demonstrate the ability and knowledge to manage the enterprise biodynamically to the requirements of these standards.

3.3.2. Daily presence

3.3.2.1. The enterprise manager shall supervise production on a daily basis, except during absences approved by Demeter New Zealand as in 3.3.2.2 below.

3.3.2.2. When the manager is not present on a daily basis, supervision shall be by a person approved by Demeter New Zealand according to protocols submitted in the Management Plan. All Management Plans shall contain such protocols to cover planned and emergency absences. The level of supervision required will depend on what operations are to be carried out.

3.3.3. Control

All land under the manager's supervision and control shall be included in the enterprise considered for certification. Family arrangements and other associations may be considered by Demeter New Zealand in defining the enterprise, especially where there are close connections with uncertified properties, to ensure that these properties are in fact as well as in appearance managed by different people.

3.3.4. **Non-owner managers**

Principle:

A manager who is not also the owner of the property has delegated authority to meet Demeter obligations.

Requirements:

Documentary evidence that the manager has the owner's authority to meet Demeter obligations shall be available for inspection. Such documents may include, but are not limited to, management contracts, grazing agreements and letters of authority.

Specific obligations of non-owner managers include, but are not limited to:

- a) managing the farm to these standards on a day to day basis;
- b) notifying Demeter New Zealand immediately if the management or ownership structure changes such that management to the standards is no longer possible;
- c) notifying Demeter New Zealand immediately if ceasing employment as manager;
- d) notifying Demeter New Zealand immediately if instructed or required to undertake or allow any activity that might be contrary to the Demeter standards or might depart from the Farm Profile and/or Management Plan previously submitted.

3.3.5. **Absentee owner**

Where owners who are not the day-to-day managers want the enterprise to be Demeter certified, their recourse is to include that as a requirement in the contract with the manager.

3.3.6. **Group and corporate management**

Where the management is by a group or body corporate, that organisation shall demonstrate a management structure that meets all the requirements of these standards. Demeter New Zealand may accept accreditation to appropriate organisational standards (such as those of ISO) as full or partial evidence of such a structure. A natural person must be named as the licensee.

3.3.7. **Change of manager**

Unless Demeter New Zealand has approved a change of manager, such a

change automatically triggers suspension of certification until Demeter New Zealand is satisfied certification may be resumed.

Unless Demeter New Zealand agrees otherwise, the sale of a property is a change of manager.

A Demeter licensee-manager shall notify Demeter New Zealand immediately if he:

- a) ceases to be able to continue unimpeded day to day supervision. Demeter New Zealand may require him to notify other parties, such as customers;
- b) ceases to have any responsibility for the enterprise, such as ceasing employment on the property.

If acceptable prior arrangements for a change of manager are not made with Demeter New Zealand, a reconversion as in 3.2.5. above may be required.

3.4. Application procedure

Principles:

Applications, both initial and renewal, require written reports supplied by the applicant according to prescribed formats.

Requirements:

3.4.1. Contact

The applicant contacts Demeter New Zealand and asks for Demeter certification. Demeter New Zealand sends the applicant the appropriate current forms. The applicant returns the completed forms to Demeter New Zealand. Demeter New Zealand forwards documents to an appropriate inspector, who contacts the applicant to arrange the inspection.

3.4.2.

3.4.3. Choice of timing

Applicants can request an inspection at any time. Inspection will lead to either an offer of certification or a written statement of how the standards were not met. General farming advice will not be offered, but information on what changes the applicant should make to meet the standards can be requested.

3.4.4. **Follow up**

If certification is declined the applicants may submit a new application at any time they believe they have satisfied the requirements of the standards.

After an initial inspection, Demeter New Zealand may revise the starting date of the registration period and notify the applicant accordingly.

3.4.5. **Documentation**

3.4.5.1. Applicants, and those holding a current Demeter certification shall have a copy of the most recent standards and be able to produce it when requested

3.4.5.2. For an initial or renewal **inspection** the following are to be supplied, completed:

- a) Demeter New Zealand Annual Report form;
- b) Farm Profile;
- c) Management Plan.
- d) supplementary documents to the annual report
- e) supplementary documents to the Farm Profile and Management Plan.

Extra costs of processing additional documents supplied late or separately may be passed on.

3.4.5.3. **Document requirements**

Document requirements include, but are not limited to

- a) Farm profile arranged as specified in the current Demeter New Zealand Farm Profile Template form
- b) Management plan
 - to be arranged as specified in the current Demeter New Zealand Management Plan form
 - if for a new application, must include a proposal for conversion of the entire enterprise within the time permitted by these standards;
 - must provide a plan for dealing with foreseeable problems, such as expected weeds, insect pests and diseases; and any likely spray drift

- c) supplementary documents to the annual report to include copies of supplier certificates for brought-in materials and livestock, as set out in the current technical bulletin *Procedures for Brought-in Materials and Livestock*;
- d) supplementary documents to the Farm Profile and Management Plan. To include additional documents specified in the templates such as maps, copies of contracts for land, grazing or cropping leases, copies of instructions to relief workers and similar.

3.4.5.4. **Document quality**

Documents shall be:

- a) on plain white paper;
- b) not bigger than A3 (i.e. 2 x A4);
- c) not colour coded – maps to be coded in a single colour with different kinds of shading, cross hatching etc. (Applicants are recommended – although not required – to use the symbols used by BioGro New Zealand.);
- d) clear, legible and able to be copied;
- e) not in electronic form unless this has been approved by Demeter New Zealand;
- f) supplied in timely fashion as appropriate to the procedures.

3.5. Compliance with standards

Principles:

Demeter licensees are able to demonstrate compliance with the Demeter standards at any time.

Requirements:

3.5.1. Demonstration of compliance

Demeter licensees shall demonstrate that their management complies with the Demeter standards by:

- a) opening their enterprise to inspection by Demeter New Zealand at all reasonable times, whether announced or unannounced. All parts of the enterprise or property shall be made accessible;
- b) making all farm records quickly available during announced inspections, and reasonably available during unannounced inspections;

- c) ensuring that all documentation required for brought-in materials and livestock is obtained prior to the material or animals being brought-in;
- d) ensuring that all relevant parts of these standards are complied with;
- e) residue testing as required by section 3.12. below.

Demeter licensees shall be inspected (audited) at least annually against these standards, and in the view of Demeter New Zealand, shall have satisfied the requirements.

3.5.2. **Instructions**

Licensees shall undertake such corrective actions as may be required in appropriate and timely fashion.

Licensees shall comply with instructions contained in technical bulletins or these standards, or directives from Demeter New Zealand.

3.5.3. **Integrity of certification**

Licensees shall report promptly any event or activity that compromises the integrity of the certification.

3.5.4. **Limitations**

Licensees who have all or part of their enterprise rated *In Conversion to Demeter* shall make on-going progress towards meeting the requirements for full Demeter certification.

Licensees with full Demeter certification on part or all of their enterprise shall not retain on their property products whose use is prohibited by these standards. Small quantities for household use are excepted, as are materials retained to save life or prevent suffering by livestock.

3.6. Inspection and audit procedures

Principles:

Documentation supplied by the applicant is reviewed, and the enterprise inspected at least annually. The review and inspection reports are considered by an assessment group within Demeter New Zealand, which decides the outcome.

Requirements:

3.6.1. Timing of inspections

Inspection shall normally be by arrangement between applicant and Demeter New Zealand.

Demeter New Zealand may additionally or in substitution initiate an unannounced inspection at any reasonable time. Application for Demeter certification is consent to such inspections.

3.6.2. Scope of inspection

All documentation supplied by the applicant shall normally be reviewed as part of the inspection process.

The inspection shall include a physical examination of the enterprise, and where this requires transport to distant parts of the farm, it shall be supplied by the applicant in a form acceptable to the inspector.

The inspection shall include review of such farm records as the inspector finds necessary. Applicants shall have such records, including their primary record (see 3.15. below), readily available.

3.6.3. Missing documents

Where the inspector observes that documentation is missing, he shall notify the applicant in writing during the inspection. The applicant shall forward copies of the missing documentation to Demeter New Zealand as soon as possible.

3.6.4. Notification

Demeter New Zealand shall notify the applicant whether or not he is fully compliant with the requirements of these standards. Where there are non-compliances, Demeter New Zealand shall advise:

- a) whether the non compliance is critical, in which case sale of produce as Demeter certified must cease until such time the non-compliance has been corrected to the satisfaction of Demeter New Zealand, or;
- b) whether the non-compliance is major, in which case it shall be corrected to the satisfaction of Demeter New Zealand before a new certificate is issued and by a specified time or be treated as a critical non-compliance as in paragraph a) above, or;

- c) whether the non-compliance is minor, in which case it shall be corrected to the satisfaction of Demeter New Zealand by a specified time or if not completed in due time may be treated as a major non-compliance as in paragraph b) above.

Where the inspector observes an activity that he considers is outside that permitted by this standard, he may bring it to the attention of the applicant during the inspection process, and may offer his opinion on the effect of this and what corrective action may be required.

Any such opinion offered by the inspector is provisional only, and shall be reviewed during assessment and may be confirmed or altered at the discretion of Demeter New Zealand.

3.7. Nature of certification & licensing

Principles:

Certification is a licence to use the Demeter name and/or symbols in the sale and promotion of produce.

Requirements:

3.7.1. Licensing contract

Certification shall be governed by a contract issued under New Zealand law. The contract shall be between the owners of the Demeter trademark in New Zealand, the Bio Dynamic Farming and Gardening Association, and the manager of the certified enterprise.

Certification is a licence to the manager to say that certain products are Demeter products. The licence shall:

- a) require annual renewal by the issue of a certificate;
- b) be specific to particular farms or enterprises. Products from farms, enterprises or areas other than those named on the certificate shall not be included;
- c) be specific to a particular manager or management system being in daily control. Products produced under the control of others not named on the certificate shall not be included, except as provided in approved Management Plans;

- d) be specific to particular products. Products not named on the certificate shall not be included.

3.7.2. **Supply of products**

For a product to be Demeter certified:

- a) the producer of the product shall have a current licence to call that product Demeter; and;
- b) the supplier of the product shall state that the product is Demeter certified, or otherwise by action or inference cause the reasonable belief that the product is Demeter certified.

3.7.2.1. Except as provided in section 3.7.3. below products supplied by non-licensed persons are not Demeter certified.

3.7.2.2. Products supplied without any indication of their certified status, even from Demeter licensed persons, are not Demeter certified.

3.7.2.3. For a product to be certified *In Conversion to Demeter* similar requirements as in 3.7.2. above apply.

3.7.2.4. Demeter licensees have a duty to ensure that the recipient of any product is properly informed about its certification status.

3.7.3. **Chain of custody**

A chain of custody by licensed persons ensures the continuation of Demeter certification. Except in specific circumstances, Demeter certification ceases when the product passes out of the hands of a Demeter licensee. The exceptions to this rule, under which certified status continues shall be:

- a) when the product is transferred to a wholesaler or retailer who takes reasonable care to protect it from inappropriate handling or mixing with uncertified produce, or;
- b) when the product is transferred to the consumer, or;
- c) when the product is packed into containers that will be sealed until they reach retailer or consumer, or;
- d) when Demeter New Zealand authorises an extension of the Demeter certification to continue while the product is in the custody of another, unlicensed operator. (Comment: An example is a packhouse packing

Demeter certified fruit, where certification may be governed by an extension to the grower's Demeter licence if particular conditions are met.)

In such cases produce handled or processed by unlicensed operators can retain its Demeter status providing:

- a) particular procedures ensure that the product is not handled or processed in inappropriate ways or mixed with produce of different certification, or with uncertified produce, or otherwise contaminated, and;
- b) the procedures are documented to the satisfaction of Demeter New Zealand, and;
- c) the actual adoption of the procedures is audited to the satisfaction of Demeter New Zealand. Audit by other certifiers may in some circumstances be acceptable, and;
- d) the produce returns to the custody of a Demeter licensee, or is sealed into containers for dispatch to retailers or consumers, and those containers are sufficient to protect the produce from reasonably expected threats to its status.

3.8. Non-compliances and penalties

Principles:

Where there are breaches of these standards corrective action will be required to protect the public and the good name and integrity of Demeter certification. Deliberate breaches are likely to lead to additional penalties to those for inadvertent or unintentional breaches. Unintentional or inadvertent breaches are followed by measures to prevent repetition.

Requirements:

3.8.1. Basis

Demeter licensees shall ensure that only approved materials and methods are used, and that any produce not complying with these standards is not in any way represented as Demeter to the purchaser or consumer.

- 3.8.2. Applicants or licensees shall undertake such corrective actions as may be required by Demeter New Zealand. If required corrective actions are not carried out, Demeter New Zealand may require additional corrective action, and may also invoke the penalties set out below, according to the particular circumstances.

3.8.3. Penalties for particular cases

Penalties for non compliance with these standards are at the discretion of Demeter New Zealand.

- 3.8.3.1. Penalties may include, for use of prohibited materials or practices on:
- a) crops or plants while growing – decertification for up to three years;
 - b) crop in storage – crop decertification;
 - c) land – land decertification for up to three years;
 - d) on animals, if adequately quarantined – decertification as in Table 7-6 *Animal treatments – conditions and results for certification*;
 - e) animals, if inadequately quarantined – stock decertification as above; affected land (could be entire property) decertified for up to three years.
- 3.8.3.2. Penalties may include, for application of Demeter label or sale of product as Demeter when the product is not certified:
- a) in the case of unintentional first offence – warning, recall of product if required, notification of consumers at licensee’s expense if required;
 - b) in the case of unintentional second offence – revocation of certification, recall of product if required, notification of consumers at licensee’s expense if required;
 - c) in the case of deliberate offence – immediate revocation of all certification, recall of product if required, notification of consumers at licensee’s expense if required, legal action to recover damages.

3.8.4.

3.8.5. Breach of contract

Demeter New Zealand reserves the right to review certification whenever a breach of the licensing contract is alleged, and may impose the above or any other penalties.

3.9. Fees and charges

Principles:

Use of the Demeter trademark and/or access to the certification and inspection system requires payment of applicable fees and charges.

Requirements:

3.9.1. Liability for fees

Annual fees are charged for inspection and certification, and become payable as soon as the first of the forms are lodged.

Licensing fees (levies) are charged for the use of the Demeter name or symbols on the basis of a report of annual sales from licensees, and are due within three months of the licensees annual accounting balance date.

3.9.2. Fee structure

Current inspection, certification and licensing fees and any applicable discounts are published in the Bio Dynamic Farming and Gardening Association's magazine, or in letters, invoices or bulletins to licensees or applicants.

Information in such letters, invoices or bulletins takes precedence over other sources.

3.9.3. Additional charges

Work additional to that normally covered by the above fees may be charged for in addition at Demeter New Zealand's current charge out rate. Additional work includes:

- a) on site inspection taking longer than Demeter New Zealand's current guidelines
- b) visits to additional properties or venues required to conclude an assessment or inspection;
- c) additional research, investigation or report preparation by inspector or assessors;
- d) additional office work generated by failure to supply complete, well presented or timely information;
- e) The cost of unannounced inspections triggered by informal reports of serious non-compliance with the standards, where serious non-compliance is found.
- f) any other work required to complete certification or ensure the integrity of a particular Demeter licence.

3.9.4. Entitlement and liability

Payment of fees does not entitle the payer to certification, only to access to the certification process.

Liability to pay fees is not altered by the outcome of an assessment, such as failure to qualify.

3.9.5. Disbursements

Disbursements made by the Association and not included in other fees may be passed on to the applicant/licensee, with an additional charge to cover financing, invoicing and the like.

3.9.6. Unpaid fees and charges

If fees or charges are not paid or annual sales reports are not furnished in timely fashion, certification renewal may be withheld. Demeter New Zealand reserves the right to recover any costs incurred in collecting unpaid fees or charges.

3.10. Partial Certification and Parallel Production

Principles:

Licensees holding full Demeter certification practise only certified biodynamic or certified organic farming. Partial certification, where there are both certified and uncertified crops, land or livestock is generally not acceptable. Parallel production, where the same products are produced to different standards (or where one is uncertified) is not normally allowed.

Requirements:

3.10.1. Partial certification

Except as provided in these standards, partial certification is not permitted.

Partial certification refers to part of an enterprise having a different certification status from another part. The parts may be differentiated by being different plots of land together with their vegetation, and/or different animals. Different status arises when two or more parts have different certifications drawn from:

- a) uncertified;
- b) *In Conversion to Demeter*;
- c) Full Demeter;
- d) one or more levels of other certifications, such as BioGro, In Conversion to BioGro.

3.10.2. Partial certification exceptions

Partial certification is possible:

- a) during conversion, when some of the enterprise may be converted ahead of other parts. In this case the converted part of the enterprise cannot advance to Full Demeter until the whole enterprise is rated at least *In Conversion to Demeter*, Full BioGro, In Conversion to BioGro, or equivalent;
- b) when new land or a new farm enterprise is added. The new land or enterprise shall be converted as if it is a separate farm so that any farm inputs coming from the new land are treated as if from another uncertified or partially certified property. A full revised Management Plan shall be submitted and shall include details of any transfer of materials or livestock between new land and land already certified;
- c) when uncertified animals are brought-in for grazing according to section 7.10 of these standards. These animals shall be clearly and permanently identified separately from animals of other certifications. Such identifications shall be:
 - i) species, or;
 - ii) visible breed difference, or;
 - iii) evident colour or skin pattern differences, or;
 - iv) permanent markings such as ear tags.
- d) the meaning of all such identifications shall be recorded in the farm primary records;
- e) when animals are fed on certified organic food according to section 3.11 below of these standards. The identification requirements above shall apply;
- f) when a community has a sewage system for human waste generated on the property. The land that such a facility is constructed on, and any land used for sewage disposal, shall not be certified;
- g) when a sanction imposed by Demeter New Zealand results in part of the land or enterprise losing certification. Demeter New Zealand may at its discretion in some cases give permission for the remainder of the land or enterprise to retain certification provided other requirements are met;
- h) **where events outside the licensee's control, including extreme weather conditions or natural disaster (force majeure) result in part of the land or enterprise losing certification.** Demeter New Zealand may at its discretion in some cases give permission for the remainder of the land or enterprise to retain certification provided other requirements are met;

- i) when experiments are carried out using materials or methods outside these standards. Demeter New Zealand may give permission for experiments on pieces of land appropriately defined and separated from the certified area. Such land shall not be certified.

3.10.3. **Parallel production**

Except as provided in these standards, parallel production is not permitted. Parallel production refers to produce of a particular type being produced or sold in more than one certification status.

3.10.4. **Parallel production exceptions**

Parallel production is possible:

- a) where produce is brought-in to supplement that sold in a farm shop. In this case the status of all produce shall be clearly labelled, and there shall be written procedures approved by Demeter New Zealand as being satisfactory to ensure separation of products of different status and to properly inform the consumer;
- b) where produce is sent out for processing to a facility that processes other uncertified or differently certified produce and the requirements of section a) above are followed.
- c) in other cases, where Demeter New Zealand is satisfied that the intention of these standards is not being breached and arrangements are made to its satisfaction for separation of the products of different certification levels.

3.10.5. **Record keeping**

Where parallel production and/or partial certification is approved on the basis of written procedures, those procedures shall include auditable records of the amounts of each type of produce introduced, produced, and dispatched.

3.10.6. **Other cases**

In all other cases neither parallel production nor partial certification is permitted.

3.11. Certified Organic by the Bio Dynamic Association

Principles:

Farms that are compliant with these standards except that some essential biodynamic feed is not available in sufficient supply may label their produce *Certified Organic by the Bio Dynamic Association* if a non-Demeter certified organic input is used instead.

Requirements:

3.11.1. Relationship to these standards

Where the farm or enterprise is managed to these standards in all respects except that, because in the judgment of Demeter New Zealand, sufficient concentrated feed for poultry or pigs is not available in Demeter quality, but is available in BioGro certified organic quality or equivalent, the licensee may be permitted to label eggs, pigs and/or poultry *Certified Organic by the Bio Dynamic Association*.

To qualify for this labelling, brought-in feed must consist of BioGro (or equivalent) or Demeter certified materials. All other requirements for animal production in Chapter 7. must be met.

3.11.2. Bees

Although a farm or enterprise is managed to these standards, bees and apiary products shall not be certified Demeter unless the Demeter forage area is large enough to assure Demeter New Zealand that the forage is essentially all of Demeter quality. In other cases, where the forage area is, in the opinion of Demeter New Zealand free from contaminants such that the diet does not include prohibited materials, the label *Certified Organic by the Bio Dynamic Association* may be permitted.

3.11.3. Other

Certified Organic by the Bio Dynamic Association may be offered for other enterprises in similar circumstances at the discretion of Demeter New Zealand.

3.12. Residue Tests

Principles:

Demeter certification is certification of the production method, and is not intended to be a guarantee of purity or freedom from chemical residues that might arise from other causes, such as background environmental pollution. However, residue tests are conducted to assure the consumer that these standards are not breached in respect of the use of prohibited materials.

Requirements:

3.12.1. Testing prior to certification

Prior to certification, residue tests on farms seeking certification for the first time shall be conducted. The tests will be appropriate to the farm and the nature of the production intended, as agreed between the farmer and the licensing committee. The tests are to ensure that the proposed production is appropriate.

3.12.2. Types of test

The basic test is a soil residue test. Other tests shall also be required at the discretion of Demeter New Zealand:

- a) a water test if a new irrigation system is proposed or has been recently added. Existing irrigation is assumed to affect the soil test, if it is bringing contaminants onto the farm;
- b) regular produce testing if there is a continuing source of background pollution, such as neighbours spraying apples;
- c) a plant tissue test if the soil test reveals residues that might show up in the plant tissue, and it is still intended to grow those plants;
- d) a produce or plant tissue test if the licensee elects to have that done instead of soil and/or water tests.

3.12.3. Contamination

If residue tests reveal contamination of produce:

- a) strategies acceptable to Demeter New Zealand shall be developed to prevent repetition;
- b) the crop shall normally be decertified if the testing indicates that a prohibited material has been applied, whether deliberately or inadvertently. This includes application by the activity of other parties;
- c) levels of any pesticide residue in certified produce must not exceed ten percent of the Maximum Residue Levels in the New Zealand Food Regulations (MRLs) for that type of produce. Such levels are the absolute maximum, but strategies to prevent the pesticide entering produce should be applied to any observed residues.

3.12.4. Sampling

The sampling procedure shall be at the discretion of Demeter New Zealand.

3.12.5. Other testing

Demeter New Zealand reserves the right to require a residue test of any produce

proposed for, labelled, sold, offered or indicated as Demeter certified.

3.12.6. **Cost**

All residue testing shall normally be at the licensee's expense.

3.13. Complaints

Principles:

Complaints against the Demeter system or personnel by any person are resolved in a fair and transparent fashion.

Requirements:

3.13.1. **Who may complain**

Any person, whether a member of the Bio Dynamic Farming and Gardening Association or not, may initiate a complaint about any matters relating to Demeter licensing.

3.13.2. **How to complain**

Informal complaints may be made to Demeter New Zealand personnel.

Formal complaints shall be in writing and forwarded to Demeter New Zealand.

3.13.3. **Complaint procedures**

Once a complaint is received, Demeter New Zealand will endeavour to ensure that all relevant information is gathered, and will forward a written report to the convenor of the Demeter Assessment Group.

The convenor of the Demeter Assessment Group will write to the complainant acknowledging receipt of the complaint and write to the person or persons apparently causing the complaint, telling of the nature of the complaint, and asking for a response or explanation.

On receipt of the response, the convenor shall decide whether to seek any further information from any other source. The convenor may appoint an independent investigator.

When the convenor is satisfied that all relevant available information has been gathered, he will decide whether any further action is required. If so, he will refer

the matter to the members of the Demeter Assessment Group for consideration.

3.13.4. Complaint resolution

- 3.13.4.1. Where the complaint is against a Demeter licensee or Demeter personnel, the Assessment Group may apply sanctions, may seek further information or may decide that no further action is warranted. The complainant will be advised of the outcome in writing. Before any sanctions come into force as a result of a complaint, the person against whom the sanctions shall apply, shall be given an opportunity to make submissions on the appropriateness and the severity of the sanctions in the individual's circumstances.
- 3.13.4.2. Where the complaint is against a member of the Assessment Group that member shall not participate as a committee member in the resolution of complaints against him personally. The complaint shall otherwise be resolved as in 3.13.4.1. above.
- 3.13.4.3. Where the complaint is against the convenor, his duties will be undertaken by another member of the Assessment Group. The complaint shall otherwise be resolved as in 3.13.4.1. above.
- 3.13.4.4. If the complaint is against the entire Assessment Group or against the system(s), the matter shall be referred to the Chair of Demeter New Zealand who shall appoint a referee or referees to hear and adjudicate on the complaint.
- 3.13.5. Complainants dissatisfied with the outcome of a complaint against an individual may appeal by initiating a complaint against the entire Assessment Group as in 3.13.4.4 above.

3.14. Appeals Against Assessments

Principles:

Licensees or applicants dissatisfied with an assessment may have it independently reconsidered.

Requirements:

3.14.1. Initiating an appeal

Any licensee who believes that he has been given an assessment inconsistent

with these standards may appeal against it by notice in writing to the Chairman of Demeter New Zealand. Such notice shall state specific details as to:

- a) the nature of the assessment;
- b) the part of the standard that he considers has been misconstrued;
- c) what the appellant considers that part of these standards means in relation to his circumstances;
- d) what the appellant believes the assessment should have been.

A \$300 deposit shall be paid against appeal costs. The money shall be refunded if the appeal is granted, but not otherwise

3.14.2. **Appeal procedure**

On receipt of a written notice of appeal, the Chairman of Demeter New Zealand shall:

- a) Check that the deposit has been paid, and if not hold the documentation until it has been
- b) check that it contains details under points a) to d) above, and;
- c) if not complete return it to the appellant for completion, or;
- d) if complete shall appoint as adjudicator or adjudicators persons knowledgeable in certification procedures to hear the appeal. The appellant shall be given an opportunity to object against the choice of adjudicator, if he/she so desires.

3.14.3. **Decision**

The decision of the adjudicators shall be communicated to the appellant and Demeter New Zealand staff in writing and shall be binding.

3.15. Record Keeping

Principles:

All farm activity is recorded at the time it occurs, or shortly thereafter in a fashion that enables a complete picture of the farming activity for the year to be assembled.

Requirements:

3.15.1. **Primary record**

All farm activity shall be recorded by the licensee. A daily diary, in which weather, farm activity, etc. are recorded or its equivalent shall be kept as a primary record in the English language.

Reports of activities furnished to Demeter New Zealand shall be based on information in the primary record.

3.15.2. **Contents of the primary record**

The following details must be recorded with special care:

- a) details of all production and use of biodynamic preparations
- b) details of the **use** of all other brought-in or own produced materials, whether considered to be benign or not. These must include material, rate of use, time of use, crop or animal applied to, location, area affected;
- c) full details of the **bringing-in** of any materials or livestock, including certificates of origin or supplier statements as set out in the most recent technical bulletin *Procedures for Brought-in Materials and Livestock*;
- d) in the case of materials applied to animals and brought-in animals, the quarantine procedures (including location of quarantine area and withholding period) and identifying marks of the animals concerned must be recorded. See section 7.17. for more detail;
- e) full details of the activities of consultants, contractors, local authorities in respect to the property;
- f) details of dispatch of produce:
 - i) amount;
 - ii) where sent;
 - iii) distinguishable produce type;
 - iv) when sent;
 - v) whether Demeter or *In Conversion to Demeter* or *Certified Organic by the Biodynamic Association* and how labelled or indicated;
- g) details of any neighbouring activity that could affect certification;
- h) details of any other activity that might affect the certification status of farm or produce.

3.15.3. **Inspection of primary record**

The primary record must be readily available during inspections for the inspector to look through without requiring to be assembled or amended.

The primary record must be clear and unambiguous and enable the inspector to trace, if necessary the origin, date, nature and quantities of all materials and

livestock brought-in or generated on farm, and the use of these materials or livestock.

3.16. Labelling

Principles:

Demeter produce is labelled with one or more of the Demeter symbols.

Requirements:

3.16.1. **Symbols**

The principal Demeter symbols are:

- a) The Demeter co-brand symbol;



- b) The Demeter flower symbol.



3.16.2. **Demeter produce**

Containers of Demeter produce for sale in New Zealand:

- a) shall, wherever possible, carry the Demeter flower symbol, and;
- b) shall, wherever possible carry the word “biodynamic” somewhere on the label, and;
- c) may in addition carry the word “organic”, and;
- d) may in addition carry the Demeter co-brand symbol, used as defined in the Demeter International labelling standards, and;
- e) may in addition carry details of other certifications where approved by Demeter New Zealand.

Individual items, such as fruit, may be individually labelled according to the same rules.

For export requirements see section 3.18. below

3.16.3. **Licensee details**

The Demeter licence number and contact details shall also appear on the label.

3.16.4. **Limitation to full Demeter**

The Demeter symbols shall be applied only to fully Demeter certified produce.

They shall not be applied to produce rated *In Conversion to Demeter* or *Certified Organic by the Biodynamic Association*.

3.16.5. Labelling of In-Conversion produce

Produce rated *In Conversion to Demeter* may be labelled with those words.

3.16.6. Organic label

Produce rated *Certified Organic by the Biodynamic Association* may be labelled with those words.

3.16.7. Approval of labels and materials

All labels or promotional material using the Demeter symbols, the word *Demeter*, the words *In Conversion to Demeter*, or the words *Certified Organic by the Biodynamic Association* shall be submitted to Demeter New Zealand for approval and shall not be published without that approval.

3.16.8. Requirement to declare status

Demeter licensees selling materials or livestock to be used on other farms shall state the certification status on the sale documentation (e.g. tax invoice).

See also Chapter 8. Harvest and Post-Harvest Management, section 8.9.8. for further labelling requirements.

3.17. Standards Review

These standards shall be revised or reviewed in whole or part as the Bio Dynamic Farming and Gardening Association in New Zealand (Inc) sees necessary. The Association reserves the right to alter or suspend all or any part of them at any time without prior notice. Variations to these standards, or exemptions from them will be issued only in writing. The written standards take precedence over all unwritten communications.

3.18. Exporting

Principles

Demeter certification exists independently in a number of countries, and each country has its own authority which controls Demeter sales and labelling.

Requirements

3.18.1. Other country requirements

Where Demeter produce is exported to another country the requirements of the Demeter certifier in that country shall be followed in respect of:

- a) labelling;
- b) packaging and handling;
- c) chain of custody;
- d) any other requirements.

3.18.2. Other country fees

Any fees or charges by the Demeter certifier in another country shall be met by the licensee or exporter.

3.18.3. Responsibility to comply

It is the responsibility of the licensee or exporter to ascertain and comply with the requirements of the Demeter certifier in the destination country.

3.18.4. Responsibility to inform

Demeter New Zealand shall be informed of any labelling or presentation adopted to meet the requirements of the Demeter certifier in another country.

3.18.5. No liability

Neither Demeter New Zealand, nor the Bio Dynamic Farming and Gardening Association in New Zealand Inc nor its agents or servants shall be responsible or liable for any loss suffered because of the action or requirements of a Demeter certifier in another country. Export of Demeter certified produce shall constitute agreement to this.

4. Biodynamic Preparations

4.1. General

Principles:

All the measures used on a biodynamically managed enterprise are evaluated according to holistic principles. In a living totality, it is of real importance not only to balance out the material requirements of the system, but also as Rudolf Steiner explicitly indicated in the Agriculture Course, to balance the depletion of the forces active in them.

Biodynamic farmers work from knowledge derived from Rudolf Steiner's spiritual science. This indicates that particular materials of mineral, plant and animal origin can be metamorphosed by the effects of cosmic/earthly influences during the course of the year. The resulting preparations guide and stimulate the life processes. These preparations are used on the soil, plants and manures, to contribute to enlivening the earth, optimising yield and enhancing quality in plants, and health, vitality and production of animals on the biodynamic farm.

Conscientious attention to detail in the production, storage and usage of the preparations is of vital importance in this regard.

Management of the biodynamic preparations is based on the skill and knowledge of the licensee, which is developed out of careful practice and its evaluation.

Requirements:

- 4.1.1. The licensee shall manage the preparation work on the farm directly. If delegation is required, the licensee shall be responsible for seeing that the person in charge is adequately trained.
- 4.1.2. The licensee shall provide documentary evidence that preparation production, sourcing and usage are in compliance with these standards.

4.2. Plan

Requirements:

All preparation and other activities in this chapter shall be according to procedures set out in a Management Plan approved by Demeter New Zealand.

4.3. Contractors

Principles:

The work of contractors is supervised by licensees to ensure it meets these standards

Requirements:

All licensees who contract out any part of the work of preparation production, storage or application shall ensure that the work done by contractors is in accordance with these standards. To this end:

- a) the Management Plan shall state what work is done by contractors, and under what conditions. This section of the Management Plan is to receive specific approval by Demeter New Zealand before implementation;
- b) Demeter New Zealand may, where the arrangements are complex and there is a risk that the standards may be breached, require that the methods to be used are detailed in a signed agreement between licensee and contractor. Copies of such agreements shall be available for inspection by Demeter New Zealand;
- c) Demeter New Zealand may require evidence that the licensee is actively monitoring the performance of contractors;
- d) the extent of work done by contractors shall be described in the licensee's annual report.

4.4. Preparation production and frequency of use

Principles:

Preparations are made on the farm, in co-operation with another farm, or obtained from an approved source. The source of sheaths, methods of production and choice of production site (including the climatic requirements) follow current best practice (see bibliography on page 35).

Applications of the field spray preparations 500 and 501 are timed by consideration of season, weather, and the astronomical calendar. Additionally for preparation 500, sufficient moisture and warmth for plant growth is desirable. For the application of preparation 501 additional considerations are crop stage and growth.

Requirements:

- 4.4.1. Preparations made on the farm shall be available for inspection. A biographical description shall be provided in the approved form.
- 4.4.2. If preparations are not made on the farm, they shall be from a source approved by Demeter New Zealand and documented as such.

- 4.4.3. Preparation 500 shall be used at least once per year on all productive areas, apart from woodlots, where usage is discretionary.

Productive areas include areas used to source composting or mulch materials.

- 4.4.4. Preparation 501 shall normally be used at least once on all crops, including hay, silage and other fodder crops.

4.4.5. **Compost preparations**

- 4.4.5.1. Compost preparations shall be used in all soil amendments prepared from plant material or animal manures, at an early stage of fermentation.

- 4.4.5.2. Exception to 4.4.5.1. above: compost preparations are not required in those materials stated in Tables 5-1 and 6-1 as not needing to be composted.

4.5. Preparation Storage

Principles:

Preparations in storage are contained in such a way that their forces do not dissipate. A shield of peat on all sides provides this protection. Additionally, appropriate moisture content is maintained.

Requirements:

- 4.5.1. Preparations 500, 502 – 506 shall be stored under aerobic conditions surrounded by peat, at a site that is free from strong electric or magnetic fields, exhaust fumes, solvent vapours and similar contaminants.
- 4.5.2. Preparation 501 shall be stored in a glass jar in a sunny place protected from the weather.
- 4.5.3. Preparation 507 shall be stored as are the other compost preparations except that the container shall exclude air as far as practicable.

4.6. Stirring and application of the spray preparations

Principles:

Preparations are stirred by hand, machine or flow form in such a way as to produce an

alternating chain of vortices separated by broken chaotic water.

Rain water or best quality available water is heated to blood temperature preferably by flame or solar heating. Preparations are stirred outside at the appropriate time of the day and cosmic condition.

Application is by a system that causes the least disturbance to the liquid after stirring. Pressures and nozzles are chosen to give a large a droplet size for preparation 500, and a fine mist for preparation 501.

Application is completed within one hour of stirring wherever possible.

Dedicated machinery for the application of the spray preparations minimises contamination and eliminates cleaning problems.

Requirements:

4.6.1. Stirring

4.6.1.1. Both spray preparations shall be stirred for one hour using a method approved by Demeter New Zealand.

4.6.1.2. The best quality water available shall be used.

4.6.2. Application

4.6.2.1. All preparations shall be applied through equipment that is uncontaminated.

4.6.2.2. Equipment that is not dedicated to preparation application shall be cleaned before use by an approved method. (Comment: Approved methods require ,many hours of cleaning, so in many cases it will not be practical to alternate equipment between conventional and biodynamic use.)

4.6.2.3. Preparations shall be sprayed out within an hour of stirring if possible, but in any case within two hours.

4.7. Use of the compost preparations

Principles:

Compost preparations are used together as a set of six. The methods of insertion are described in books in the bibliography on page 35. For those areas of the enterprise,

which receive insufficient preparation-treated compost, the effect of the compost preparations can be brought out in fermented liquid manures or spread through the cow pat pit.

Requirements:

- 4.7.1. Compost preparations shall be used in all composting and liquid manure fermented materials, including liquid manures and brought in composts at an early stage of fermentation.
- 4.7.2. The effect of the compost preparations shall reach all productive areas of the enterprise at least once each year.

4.8. Approval of preparations

Principles:

Preparations made on Demeter properties are approved as part of the Demeter certification process. Preparations made elsewhere are approved by a similar process.

Requirements:

- 4.8.1. Preparation makers who are Demeter licensees or applicants shall
 - a. Work according to a documented plan.
 - b. Record details in a daily diary or similar primary record available at the annual inspection
 - c. Complete and supply the current biographical forms
 - d. Have their preparation making arrangements inspected along with samples of preparations retained for that purpose.
- 4.8.2. Preparation makers who are not Demeter licensees or applicants shall
 - a. Satisfy the requirements in 4.8.1 above
 - b. Supply a declaration of the integrity of the preparation making site and arrangements in an approved form
 - c. Supply other supporting evidence where requested.

4.9. Preparations Bibliography

G. Henderson, *Using the Biodynamic Preparations*, Bio Dynamic Farming and Gardening Association in NZ (2003)

5. Arable and Annual Plant Production

5.1. General

Principles:

Arable and annual plant production, including vegetable production, generally is supported by some animal husbandry that is integrated with it, especially of ruminants, and by a diverse ecosystem which includes trees and plants that support beneficial insects, pollinator and predator populations. Small intensive units unable to support animals bring in appropriate types and quantities of animal manure.

5.2. Plan

Requirements:

All plant production and other activities in this chapter shall be according to procedures set out in a Management Plan approved by Demeter New Zealand.

5.3. Contractors

Principles:

The work of contractors is supervised by licensees to ensure it meets these standards.

Requirements:

All licensees who contract out any part of the work of plant production shall ensure that the work done by contractors is in accordance with these standards. To this end:

- a) the Management Plan shall state what work is done by contractors, and under what conditions. This section of the Management Plan is to receive specific approval by Demeter New Zealand before implementation;
- b) Demeter New Zealand may, where the arrangements are complex and there is a risk that the standards may be breached, require that the methods to be used are detailed in a signed agreement between licensee and contractor. Copies of such agreements shall be available for inspection by Demeter New Zealand;
- c) Demeter New Zealand may require evidence that the licensee is actively monitoring the performance of contractors;
- d) the extent of work done by contractors shall be described in the licensee's annual report.

5.4. Soil management and soil fertility

Principles:

Soil biological fertility and soil life are maintained by:

- a) appropriate restorative pasture phases, where practical;
- b) incorporation of green manures;
- c) compost applications;
- d) cultivation practices which protect soil macro and micro life and soil organic matter, and minimise time land is left bare;
- e) careful use of the biodynamic preparations.

Soil chemical fertility is maintained by application of appropriate minerals as guided by these standards, usually after monitoring and according to an approved plan. They are a supplement to nutrient cycling, not a replacement. Synthetic or water soluble fertilisers are not used. Materials such as rock dusts or reactive phosphate rock which are low in heavy metals and which are preferably incorporated into the farm through a composting process are used.

Soil physical condition is maintained by judicious cultivation and harvesting practices which minimise compaction, structural damage and loss of top soil and organic matter.

Manures and plant wastes, and materials incorporating them, such as propagation mixes and mulching materials are brought-in and used only according to conditions defined in these standards.

Crops for consumption are grown in contact with the soil.

Requirements:

5.4.1. General

- 5.4.1.1. Every property growing crops or vegetables shall have methods for maintaining all aspects of soil fertility described in an approved Management Plan.
- 5.4.1.2. Demeter New Zealand may require nutrient levels and organic matter to be monitored by soil tests.

- 5.4.1.3. All materials used for soil management, amendment or fertilising shall meet the requirements of Table 5-1 *Fertilising and soil conditioning materials and amendments*.
- 5.4.1.4. Where these standards permit the use of particular materials but only after prior permission is given, Demeter New Zealand may require amendments to the farm Management Plan to minimise the use of those materials in the future, before permission is given.
- 5.4.1.5. **All composts, liquid manures or other plant/animal wastes** incorporated into the soil shall include use of the biodynamic compost preparations as set out in Chapter 4., except as otherwise permitted by Table 5-1 and 5.4.1.6. below.
- 5.4.1.6. Brought-in liquid manures made without the compost preparations are acceptable if:
- a) they meet the other requirements of this standard, and;
 - b) they are observed to ferment under the guidance of the compost preparations (if necessary after dilution or addition of on-farm materials such as wood ash), and;
 - c) the fermentation is allowed to continue until it is finished.
- 5.4.1.7. Application of fertilising materials of plant or animal origin without prior composting (hot composting or in liquid manures) requires express permission from Demeter New Zealand.
- 5.4.2. **Synthetic or high solubility fertilisers** shall not be used, except as stated in Table 5-1 *Fertilising and soil conditioning materials and amendments*, and then used only according to an approved plan.
- 5.4.3. **Manures from unethical livestock systems**, such as battery hen houses shall not be used.
- 5.4.4. Fertilisers made from or incorporating **animal tissue** (except blood and bone and similar animal by-products and fish waste) shall not be used.

- 5.4.5. The **total amount of animal manure** applied annually, averaged over a whole rotation, shall be no more than the amount which would be produced by the farm itself if it were run as a pure biodynamic livestock unit.
- 5.4.6. **Nitrogen rich** materials in particular (such as animal manures) shall be handled, stored and applied with care. Nitrogen shall be supplied to plants or soil at no greater rates than they can absorb without adverse effect on crop quality (nutritional quality, taste, keeping quality) and on the environment (especially ground water and waterways).
- 5.4.7. **Additional requirements for brought-in fertilising materials**
- 5.4.7.1 Before plant and fish wastes or animal faeces are brought in as manures, compost, composting, bedding or mulching materials, the licensee shall investigate the sources and acceptability and obtain documentary evidence:
- a) that these inputs are free from materials such as heavy metals or pesticides or other contaminants that may cause soil or product contamination or that do not break down in the composting process;
 - b) that no prohibited materials have been applied during the growing season (or given to animals during production) in which the input was produced.

Where such evidence cannot be produced to the satisfaction of Demeter NZ, batch residue testing for specific contaminants or other investigations may be required prior to usage, at the discretion of Demeter NZ and at the licensee's expense. See also table 5-1.

(Note additional requirements for the use of the biodynamic preparations in Chapter 4 and s5.4.1.5 above)

- 5.4.7.2. The total of brought-in feed, brought-in animal manures and brought-in plant wastes in any year shall not exceed the equivalent of 112 kg/ha of nitrogen (N) and 98kg/ha of phosphorus pentoxide (P_2O_5).
- 5.4.7.3. Minerals such as rock dusts and lime brought-in for soil management, amendment or fertilising shall be low in heavy metals and industrial contaminants. They shall be accompanied by documentation showing their origin and that such contamination levels are low.

- 5.4.7.4. Documentation to show that the particular batch is a BioGro approved input shall satisfy the documentation requirements of 5.4.7.1. and 5.4.7.3. above. (Note: Not all BioGro approved inputs are likely to be acceptable. BioGro approval satisfies the requirements of this section of the standards for documentation, but may not satisfy other requirements elsewhere in this standard.)
- 5.4.7.5 Brought in composts shall be made using biodynamic preparations as in Chapter 4.
- 5.4.7.6 Where permission is sought to apply brought-in fertilising or soil amendment materials without composting, the licensee may be required to provide additional information on the materials before the matter is considered by Demeter New Zealand.
- 5.4.7.7 Except as expressly permitted elsewhere in these standards, fossil carbon such as peat or mined humates shall not be used in fertilising materials.
- 5.4.8. Soil sterilisation is not permitted. See also section 5.7.3.
- 5.4.9. **Accidental contamination**
Every effort shall be made to avoid **contamination of soil or crops** with lubricants, fuels or other materials.
- 5.4.10. **Soil-less techniques**
- 5.4.10.1. Soil-less growing techniques, use of inert substrates, and hydroponic systems are not permitted.
- 5.4.10.2. Crops grown to harvest shall not be container grown.
- 5.4.10.3. An exception to 5.4.10.1. above is that watercress and wasabe may be grown under approved natural conditions.
- 5.4.11. **Greenhouses**
Production under glass or plastic shall be limited to an appropriate extension of the growing season, and where artificial heating is used, energy saving measures shall be taken wherever possible.

5.4.12. Livestock requirement

Cropping farms must have some livestock.

5.4.13. New materials and methods may be tried or tested only with the prior approval of Demeter New Zealand.

5.4.14. Sewage

Human waste or sewage (sometimes called “bio-solids”), or composts including it shall not be used, even after treatment.

5.5. Crop rotation

Principles:

Crop rotations designed to suit climate, soil type and cropping history are used to achieve:

- a) a balance of root, leaf, flower and fruit/seed crops;
- b) soil health through alternating plant families and plant rooting systems of different types;
- c) acceptable, controlled weed populations that do not detract from crop quality or yield;
- d) a maintenance of, or improvement in soil organic matter through careful management of crop residues (especially through composting) and inclusion of green manures and pasture phases in the rotation;
- e) a supply of fixed atmospheric nitrogen which matches crop requirements as close as possible, while minimising losses through leaching or volatilisation.

Requirements:

5.5.1. Every property growing annual crops shall have a crop rotation described in an approved Management Plan.

5.5.2. Continuing approval of a crop rotation in a Management Plan requires the licensee to be able to demonstrate, in the field, that the principles above are met. (Comment: For example, a soil restorative phase in a crop rotation should actually restore soil structure.)

5.6. Weed, pest and disease management

Principles:

Weed management is based on:

- a) crop rotation;
- b) spacing and timing of crops and operations;
- c) mechanical and thermal control (flame or steam weeding);
- d) mulching;
- e) peppering.

Pest and diseases are prevented through appropriate management practices. These include:

- a) choice of planting distances;
- b) good nutrient (especially nitrogen) management;
- c) careful choice of cultivars (preferably those that are locally adapted);
- d) preference for open pollinated cultivars over hybrids;
- e) sound weed management;
- f) judicious use of the biodynamic preparations;
- g) choice of favourable times for work according to weather, local conditions, season and cosmic influences.

Requirements:

5.6.1. Planning

The Management Plan shall state in detail how pests and weeds will be managed in accordance with the principles.

5.6.2. Mulches

5.6.2.1. Polyethylene mulches are permitted on annual crops but shall be completely removed after use.

5.6.2.2. PVC mulches shall not be used.

5.6.2.3. Plant materials brought-in for mulching shall comply with the requirements of section 5.4.7 above

5.6.2.4 Other mulch materials shall be free of contaminating residues. In case of doubt they shall not be used. (Comment: some materials such as some recycled papers may contain undesirable materials such as xeno-estrogens)

5.6.3. Stubble or straw burning is not permitted.

- 5.6.4. Pest and disease control measures shall in the first instance be directed at causes rather than symptoms.

Only where pests and diseases cannot be prevented shall specific control materials be used. Only those materials and methods listed in these standards, Table 5-2 *Plant pest and disease materials and methods*, shall be used.

Where the table states a Management Plan requirement, the licensee shall investigate and document in the Management Plan the possibility of management changes to reduce and ultimately remove the ongoing need for the material.

Other **herbicides, fungicides, insecticides, other biocides or synthetic crop management materials** (such as rooting hormones) are prohibited materials and shall not be used. Applying prohibited materials will lead to decertification of the crop, the growing area or the entire property.

5.7. Plant propagation

Principles:

Preference is given to Demeter certified propagation material if available, or otherwise to certified organic. Where possible locally adapted propagation material suitable for biodynamic horticulture is used.

Requirements:

5.7.1. **Seeds and plant materials**

- 5.7.1.1 Demeter certified seeds and plant material shall be used if available.
- 5.7.1.2. If Demeter certified seeds or plant material is not available, material from certified organic production may be used.
- 5.7.1.3. If only conventionally grown seeds or plant material is available then:
- a) seeds must be untreated;
 - b) plant material except seeds must normally undergo a minimum of one year's conversion to Demeter production;
 - c) mature plants and rootstocks may require a longer conversion period.
- 5.7.1.4. Synthetic root-promoting compounds may not be used.

5.7.1.5. Genetically modified seeds and other plant materials, and the products of genetically modified organisms shall not be used. Hybrids developed by cell fusion methods (protoplast or cytoplasm fusion, including cytoplasmic male sterility) shall not be used.

5.7.1.6. Seed and plant material shipments shall not be accepted unless accompanied by written evidence that they are GE free; and that seeds are untreated and not the product of cell fusion.

5.7.2. **Propagation media**

Plant propagation and seed raising mixes:

- a) shall consist of at least 25% by volume of biodynamically prepared composts;
- b) all other additives shall be permitted materials;
- c) peat may be used up to 75% by volume, but its proportion shall be kept as low as possible;
- d) the use of synthetic soil improving agents or soil substitutes is not permitted.

5.7.3. **Potting mix sterilization**

5.7.3.1. Potting and seed raising mixes shall not be sterilized by chemical means.

5.7.3.2. Media and substrates for propagation may be steam-sterilised.

5.7.3.3. After sterilisation and cooling the biodynamic compost preparations, liquid compost extracts, horn manure preparation or the cow pat pit preparation shall be promptly used to guide the microbial recolonisation.

5.7.4. **Synthetic plant containers** such as metal and plastic shall be removed and where possible reused or recycled.

5.8. **Biodynamic preparations**

The preparations shall be used as set out in Chapter 4. Biodynamic Preparations.

Table 5-1 Fertilising and soil conditioning materials and amendments – arable and annual plant production

The following conditions apply to all parts of this table:

1. **Each line is read as a whole.** If any part of it does not apply, the whole line does not apply. For example the table allows use of naturally sourced gypsum on the soil without permission. Gypsum used any other way is a prohibited material.
2. Documentary evidence shall be obtained **prior to use**, to show that all conditions relating to brought-in materials have been met.

Material	Usage	Conditions	Prior permission required?
Biodynamic preparations	See Chapter 4. for requirement to use the preparations	From an approved source	No
Plant materials produced on the farm or brought-in from certified biodynamic or organic sources	Composts and liquid manures	<ul style="list-style-type: none"> • Biodynamic preparations used in all composting and fermentation • Manure limitations apply to brought-in materials (see Table 7-2) 	No
Plant materials produced on the farm or brought-in from certified biodynamic or organic sources	Mulching	<ul style="list-style-type: none"> • Manure limitations apply to brought-in materials (see Table 7-2) 	No, if according to an approved plan
Animal manures produced on the farm or brought-in from certified biodynamic or organic sources	Composts and liquid manures	<ul style="list-style-type: none"> • Biodynamic preparations used in all composting and fermentation • Manure limitations apply to brought-in materials (see Table 7-2) 	No
Animal manures produced on the farm or brought-in from certified biodynamic or organic sources	Direct application, uncomposted	<ul style="list-style-type: none"> • Manure limitations apply to brought-in materials (see Table 7-2) 	Yes
Plant materials from conventional sources	Composts and liquid manures	<ul style="list-style-type: none"> • Free from contaminants and prohibited materials as per s5.4.7.1 • Biodynamic preparations used in all composting and fermentation • Manure limitations apply (see Table 7-2) 	Yes
Plant materials from conventional sources	Mulches	<ul style="list-style-type: none"> • Free from contaminants and prohibited materials as per s5.4.7.1 • Manure limitations apply (see Table 7-2) 	Yes
Animal manures from conventional sources	Composts and liquid manures	<ul style="list-style-type: none"> • Free from contaminants and prohibited materials as per s5.4.7.1 • Manure limitations apply (see Table 7-2) 	Yes

Material	Usage	Conditions	Prior permission required?
Seaweed	Composts and liquid manures	<ul style="list-style-type: none"> Free of contaminants (see section 5.4.7.1. above). Biodynamic preparations used in all composting and fermentation Manure limitations apply (see Table 7-2) 	No, if according to an approved plan
Seaweed	Mulch	<ul style="list-style-type: none"> Free of contaminants (see section 5.4.7.1. above). Manure limitations apply (see Table 7-2) 	No, if according to an approved plan
Fish wastes	Composts and liquid manures	<ul style="list-style-type: none"> Free of contaminants (see section 5.4.7.1. above). Biodynamic preparations used in all composting and fermentation Manure limitations apply (see Table 7-2) 	No, if according to an approved plan
Wood ash	Any	From untreated wood sources	No
Animal by-products such as <ul style="list-style-type: none"> blood and bone dried blood horn and hoof meal. 	Compost made by hot method	<ul style="list-style-type: none"> Free of pesticide or heavy metal residues and so documented 	No
Rock dusts, including	Any	General condition for rock dusts: Preferably incorporated through composting	As below
<ul style="list-style-type: none"> rock phosphate 		Cadmium level less than 90mg Cd/kg P ₂ O ₅ .	No
<ul style="list-style-type: none"> agricultural lime and dolomite 			No
<ul style="list-style-type: none"> gypsum (calcium sulphate) 		Of natural origin, not factory product.	No
<ul style="list-style-type: none"> elemental sulphur 		Of natural origin, not factory product.	No
<ul style="list-style-type: none"> glauconite (greensands) 			No
<ul style="list-style-type: none"> potassium feldspar 			No
<ul style="list-style-type: none"> other rock materials such as basalt, dunite, magnesite, chalk, serpentine, ulexite. 		Batch testing for heavy metals or other contaminants may be required.	Yes

Material	Usage	Conditions	Prior permission required?
Trace elements such as <ul style="list-style-type: none"> • boron • selenium • cobalt • molybdenum • iron • copper • manganese • zinc 		<ul style="list-style-type: none"> • Deficiencies demonstrated by <ul style="list-style-type: none"> ○ soil analysis, or ○ plant tissue analysis, or ○ observing typical symptoms. • Use less soluble forms in preference to more soluble forms 	Yes
Potassium magnesium sulphate		<ul style="list-style-type: none"> • Natural material such as langbeinite rock • Chloride content less than 3% by weight 	Yes

Table 5-2 Plant pest and disease materials and methods – arable and annual plant production

The following conditions apply to all items in this table:

1. **Each line is read as a whole.** If any part of it does not apply, the whole line does not apply. For example the table allows use of pheromones without permission for pest control if used in traps or dispensers. Pheromones used in any other way are prohibited materials.
2. Documentary evidence shall be obtained **prior to use** to show that all conditions relating to brought-in materials have been met.

Purpose	Material or method	Conditions and restrictions	Permission required?
Pest control	Natural predators encouraged by habitat and/or purposefully introduced e.g. <i>Encarsia formosa</i>	No GE organisms	No
Pest control	Sterile males purposefully released	No GE organisms	No
Pest control	Pheromones, lures and sex attractants	In traps or dispensers	No
Pest control	Coloured boards, sticky traps, attractant materials, sound scares	Non biodynamic materials to be contained	No
Pest control	Electrically and mechanically operated traps for rodents, barriers for slugs and snails and similar		No
Pest control	Vegetable oil emulsions and similar mixtures	No GE or synthetic pesticides.	No
Pest control	Oil emulsions containing mineral oils, and similar mixtures	No GE or synthetic pesticides. Perennial or permanent crops only	No
Fungi and bacteria control	Liquid manures and teas	No GE or synthetic chemical ingredients	No
Fungi control	Milk and milk products	No GE or synthetic chemical ingredients	No
Fungi control	Wettable sulphur flowers of sulphur without prohibited additives	See Management Plan requirement, s.5.6.4.	Yes
Fungi control	Sodium silicate or potassium silicate	See Management Plan requirement, s.5.6.4.	Yes

Purpose	Material or method	Conditions and restrictions	Permission required?
Fungi control	Lime sulphur	On permanent crops only. See Management Plan requirement, s.5.6.4.	Yes
Fungi and bacteria control	Bordeaux mixture, burgundy mixture, copper hydroxide, cuprous oxide	On permanent and specialised crops only – max 3kg Cu/ha/yr – preferably no more than 500g/ha /spray. See Management Plan requirement, s.5.6.4. Soil residue testing may be required	Yes
Control any organism	Viruses e.g. granulosis, Bacteria e.g. <i>Bacillus thuringiensis</i> , Fungi e.g. <i>Trichoderma spp.</i>	Whole organism (not extract of toxins only). No GE or prohibited additives	No
Pest control	Natural pyrethrum (not synthetic, no chemical synergist)	No GE or synthetic ingredients. See Management Plan requirement, s.5.6.4.	Yes
Pest control	Quassia tea	No GE or synthetic ingredients. See Management Plan requirement, s.5.6.4.	Yes
Pest control	Neem	No GE or synthetic ingredients. See Management Plan requirement, s.5.6.4.	Yes
Pest control	Diatomaceous earth	On permanent crops only	No
Pest control	Plant extracts using approved materials and methods	No GE or synthetic ingredients	Yes
Pest control	Peppering		No
Disease control	Propolis	No GE or synthetic ingredients	No
Pest and disease control	Homoeopathic materials	No GE or synthetic ingredients	No
Pest control	Potassium soaps (soft soaps)		No
Pest control	Carbon dioxide or nitrogen	Produce stores only	No
Disease control	Bentonite and other rock flours		No
Disease control	Pruning paste	From materials in this list	Yes if any ingredient requires permission. Otherwise No.

6. Orchard and Perennial Plant Production

6.1. General

Principles:

Biodynamic orchards sustain and improve the fertility and life-supporting properties of the soil and associated biological, physical and chemical properties. They do this by the maintenance and enhancement of soil organic matter, humus-content, biological activity, soil structure and soil mineral status. Small intensive units unable to support animals bring in appropriate types and quantities of animal manure.

Orchards are part of an integrated self-sustaining and stable ecosystem where trees, shrubs and vines are supported by a microbial active soil and diverse groundcover, green-sward and humus-layer.

6.2. Plan

Requirements:

All plant production and other activities in this chapter shall be according to procedures set out in a Management Plan approved by Demeter New Zealand.

6.3. Contractors

Principles:

The work of contractors is supervised by licensees to ensure it meets these standards.

Requirements:

All licensees who contract out any part of the work of plant production shall ensure that the work done by contractors is in accordance with these standards. To this end:

- a) the Management Plan shall state what work is done by contractors, and under what conditions. This section of the Management Plan is to receive specific approval by Demeter New Zealand before implementation;
- b) Demeter New Zealand may, where the arrangements are complex and there is a risk that the standards may be breached, require that the methods to be used are detailed in a signed agreement between licensee and contractor. Copies of such agreements shall be available for inspection by Demeter New Zealand;
- c) Demeter New Zealand may require evidence that the licensee is actively monitoring the performance of contractors;
- d) the extent of work done by contractors shall be described in the licensee's annual report.

6.4. Orchard Design

Principles:

Choice of species, cultivars and rootstocks reflects characteristics of soil, climate, aspect and topography, and resistance to pests and diseases. Where operations tend towards monoculture, active measures are taken to create a balance through more intensive use of compost, biodynamic preparations and a wide variety of groundcover species and ancillary plantings.

Requirements:

- 6.4.1. Site-preparation shall minimise soil and environmental damage.
- 6.4.2. A biodynamic orchard shall provide a habitat for beneficial organisms such as insects, birds, vertebrate and invertebrate fauna.
- 6.4.3. Biodiversity shall be enhanced particularly by the composition of groundcover species and/or by interplanting with alternative crop species, including legumes.
- 6.4.4. Layout and spacing of plantings shall allow for development of a canopy with appropriate light penetration and air circulation.
- 6.4.5. Access shall be designed to minimise compaction of the soil and avoid plant damage.
- 6.4.6. Shelter and refuge areas for beneficial fauna shall be established with the aim to minimise spray applications and optimise ecological balance.
- 6.4.7. Support systems:
 - a) shall not use tropical or subtropical woods unless from certified sustainable production systems that have the prior approval of Demeter New Zealand;
 - b) shall give preference to materials which have not been treated with heavy metal compounds, such naturally ground durable timbers, or untreated bamboo or tonkin.

6.5. Soil management and soil fertility

Principles:

Soil biological fertility and soil life are maintained by:

- a) recycling of green material from the sward;
- b) compost applications;
- c) harvesting and use of machinery in ways which protect soil macro and micro life and soil organic matter;
- d) careful use of the biodynamic preparations.

Soil chemical fertility is maintained by application of appropriate minerals as guided by these standards, usually after monitoring and according to an approved plan. They are a supplement to nutrient cycling, not a replacement. Synthetic or water soluble fertilisers are not used. Materials such as rock dusts or reactive phosphate rock which are low in heavy metals and which are preferably incorporated into the farm through a composting process are used.

Soil physical condition is maintained by practices which minimise compaction, structural damage and loss of top soil and organic matter.

Manures and plant wastes, and materials incorporating them, such as propagation mixes and mulching materials are brought-in and used only according to conditions defined in these standards.

Requirements:

6.5.1. General

- 6.5.1.1. Every orchard property shall have methods for maintaining all aspects of soil fertility described in an approved Management Plan.
- 6.5.1.2. Demeter New Zealand may require nutrient levels and organic matter to be monitored by soil tests.
- 6.5.1.3. All materials used for soil management, amendment or fertilising shall meet the requirements of Table 6-1 *Fertilising and soil conditioning materials and amendments*.
- 6.5.1.4. Where these standards permit the use of particular materials but only after prior permission is given, Demeter New Zealand may require amendments to the Farm Management Plan to minimise the use of those materials in the future, before permission is given.

- 6.5.1.5. **All composts, liquid manures or other plant/animal wastes** incorporated into the soil shall include use of the biodynamic compost preparations as set out in Chapter 4., except as otherwise permitted by Table 6-1 and sections 6.5.1.6. and 6.5.1.7. below.
- 6.5.1.6. Brought-in liquid manures made without the compost preparations are acceptable if:
- a) they meet the other requirements of this standard, and;
 - b) they are observed to ferment under the guidance of the compost preparations (if necessary after dilution or addition of on-farm materials such as wood ash), and;
 - c) the fermentation is allowed to continue until it is finished.
- 6.5.1.7. Guidelines for worm farms are under development. In the interim, only material free from contaminants and so documented shall be used.
- 6.5.1.8. Application of fertilising materials of plant or animal origin without prior composting (hot composting or in liquid manures) requires express permission from Demeter New Zealand.
- 6.5.2. **Synthetic or high solubility fertilisers** shall not be used, except as stated in Table 6-1 *Fertilising and soil conditioning materials and amendments*, and unless used according to an approved plan.
- 6.5.3. **Manures from unethical livestock systems**, such as battery hen houses shall not be used.
- 6.5.4. Fertilisers made from or incorporating **animal tissue** (except blood and bone and similar animal by-products and fish waste) shall not be used.
- 6.5.5. The **total amount of animal manure** applied annually, averaged over a whole rotation, shall be no more than the amount which would be produced by the farm itself if it were run as a pure biodynamic livestock unit.
- 6.5.6. **Nitrogen rich** materials in particular (such as animal manures) shall be handled, stored and applied with care. Nitrogen shall be supplied to plants or soil at no greater rates than they can absorb without adverse effect on crop quality

(nutritional quality, taste, keeping quality) and on the environment (especially ground water and waterways).

6.5.7. Additional requirements for brought-in fertilising materials

- 6.5.7.1. Before plant and fish wastes or animal faeces are brought in as manures, compost, composting, bedding or mulching materials, the licensee shall investigate the sources and acceptability and obtain documentary evidence :
- a) that these inputs are free from materials such as heavy metals or pesticides or other contaminants that may cause soil or product contamination or that do not break down in the composting process;
 - b) that no prohibited materials have been applied during the growing season (or given to animals during production) in which the input was produced.

Where such evidence cannot be produced to the satisfaction of Demeter NZ, batch residue testing for specific contaminants or other investigations may be required prior to usage, at the discretion of Demeter NZ and at the licensee's expense. See also table 6-1.

(Note additional requirements for the use of the biodynamic preparations in Chapter 4 and s6.5.1.5 above)

- 6.5.7.2. The total of brought-in feed, brought-in animal manures and brought-in plant wastes in any year shall not exceed the equivalent of 112 kg/ha of nitrogen (N) and 98kg/ha of phosphorus pentoxide (P_2O_5).
- 6.5.7.3. Minerals such as rock dusts and lime brought-in for soil management, amendment or fertilising shall be low in heavy metals and industrial contaminants. They shall be accompanied by documents showing their origin and that such contamination levels are low.
- 6.5.7.4. Documentation to show that the particular batch is a BioGro approved input shall satisfy the documentation requirements of 6.5.7.1. and 6.5.7.3. above. (Note: Not all BioGro approved inputs are likely to be acceptable. BioGro approval satisfies the requirements of this section of the standards for documentation, but may not satisfy other requirements elsewhere in this standard.)

- 6.5.7.5. Brought in composts shall be made using biodynamic preparations as set out in Chapter 4.
- 6.5.7.6. Where permission is sought to apply brought-in fertilising or soil amendment materials without composting, the licensee may be required to provide additional information on the materials before the matter is considered by Demeter New Zealand.
- 5.4.7.7 Except as expressly permitted elsewhere in these standards, fossil carbon such as peat or mined humates shall not be used in fertilising materials.
- 6.5.8. **Soil sterilisation** is not permitted.
- 6.5.9. **Accidental contamination**
Every effort shall be made to avoid **contamination of soil or crops** with lubricants, fuels or other materials.
- 6.5.10. **Soil-less techniques**
- 6.5.10.1. Soil-less growing techniques, use of inert substrates, and hydroponic systems are not permitted.
- 6.5.10.2. Crops grown to harvest shall not be container grown.
- 6.5.11. **Greenhouses**
Production under glass or plastic shall be limited to an appropriate extension of the growing season, and energy saving measures shall be taken wherever possible.
- 6.5.12. **Livestock requirement**
Wherever possible orchards shall have some grazing livestock.
- 6.5.13. New materials and methods may be tried or tested only with the prior approval of Demeter New Zealand.
- 6.5.14. **Sewage**
Human waste or sewage (sometimes called “bio-solids”), or composts including

it, shall not be used, even after treatment.

6.6. Crop and sward management

Principles:

The orchard environment is harmonised within itself and with any other part of the farm.

Interventions support the integrity of a living environment and sustainable production.

Disease is prevented through appropriate management practices. These include:

- a) choice of planting distances;
- b) good nutrient (especially nitrogen) management;
- c) careful choice of cultivars and root stocks. Preference is given to those that are locally adapted;
- d) sound weed management;
- e) judicious use of the biodynamic preparations;
- f) choice of favourable times for work according to weather, local conditions, season and cosmic influences.

Quality of biodynamically produced crops is maintained by careful harvest, handling, transport, grading, processing and storage techniques.

Requirements:

6.6.7. **Cultivation** between the crop-plants shall be minimised.

6.6.8. The orchard Management Plan shall include measures to minimise the need for interventions to cure specific problems. Acceptable techniques include:

- a) composts and organic mulches;
- b) leguminous groundcover;
- c) green manures;
- d) herbal leys;
- e) returning biomass and crop-residues to the soil;
- f) disease resistance of cultivars and rootstocks;
- g) grazing by livestock;
- h) appropriate sward management techniques;
- i) minimising heavy machinery usage;
- j) use of biodynamic preparations.

6.6.9. The soil may not be kept free of vegetation or natural cover throughout the whole year. Demeter New Zealand may give an exemption to this for the establishment year only, if justified in the Management Plan.

6.6.10. **Mulches**

6.6.10.1. Polyethylene mulches are permitted on annual crops but shall be completely removed after use.

6.6.10.2. PVC mulches shall not be used.

6.6.10.3. Plant materials brought-in for mulching shall comply with the requirements of section 6.5.7. above.

6.6.10.4. Other mulch materials shall be free of contaminating residues. In case of doubt they shall not be used. (Comment: some materials such as some recycled papers may contain undesirable materials such as xeno-estrogens)

6.6.11. Pest and disease control measures shall in the first instance be directed at causes rather than symptoms.

Only where pests and diseases cannot be prevented shall specific control materials be used. Only those materials and methods listed in these standards, Table 6-2 *Plant pest and disease materials and methods*, shall be used.

Where the table states a Management Plan requirement, the licensee shall investigate and document in the Management Plan the possibility of management changes to reduce and ultimately remove the ongoing need for the material.

Other **herbicides, fungicides, insecticides, other biocides or synthetic crop management materials** (such as rooting hormones) are prohibited materials and shall not be used. Applying prohibited materials will lead to decertification of the crop, the growing area or the entire property.

6.7. Propagation

Principles:

Preference is given to Demeter certified propagation material if available, or otherwise to certified organic. Where possible, locally adapted propagation material suitable for biodynamic orchards is used.

Requirements:

6.7.7. Plant materials

- 6.7.7.1. Demeter certified seeds and plant material shall be used if available.
- 6.7.7.2. If Demeter certified seeds or plant material is not available, material from certified organic production may be used.
- 6.7.7.3. If only conventionally grown seeds or plant material is available then:
 - a) seeds must be untreated;
 - b) plant material must undergo a minimum of one year's conversion to Demeter production;
 - c) mature plants and rootstocks may require a longer conversion period.
- 6.7.7.4. Synthetic root-promoting compounds may not be used.

Genetically modified seeds and other plant materials, and the products of genetically modified organisms shall not be used. Hybrids developed by cell fusion methods (protoplast or cytoplasm fusion, including cytoplasmic male sterility) shall not be used.

- 6.7.7.5. Seed and plant material shipments shall not be accepted unless accompanied by written evidence that they are GE free and that seeds are untreated and not the product of cell fusion.

6.7.8. Propagation media

Plant propagation and seed raising mixes:

- a) shall consist of at least 25% by volume of biodynamically prepared composts;
- b) all other additives shall be permitted materials as listed in these standards;
- c) peat may be used up to 75% by volume, but its proportion shall be kept as low as possible;
- d) the use of synthetic soil improving agents or soil substitutes is not permitted.

6.7.9. Potting mix sterilisation

- 6.7.9.1. Potting and seed raising mixes shall not be sterilized by chemical means.
- 6.7.9.2. Media and substrates for propagation may be steam-sterilised.
- 6.7.9.3. After sterilisation and cooling the biodynamic compost preparations, liquid compost extracts, horn manure preparation or the cow pat pit preparation shall be promptly used to guide the microbial recolonisation.
- 6.7.10. **Synthetic plant containers** such as metal and plastic shall be removed and where possible reused or recycled.

6.8. Biodynamic preparations

The biodynamic preparations shall be used as set out in Chapter 4. Biodynamic Preparations. In addition, biodynamic tree paste may be used.

Table 6-1 Fertilising and soil conditioning materials and amendments – orchard and perennial plant production

The following conditions apply to all parts of this table:

1. **Each line is read as a whole.** If any part of it does not apply, the whole line does not apply. For example the table allows use of naturally sourced gypsum on the soil without permission. It does not permit use of gypsum of any other type, or for any other purpose.
2. Documentary evidence is required to show that all conditions relating to brought-in material have been met **prior to use**.

Material	Usage	Conditions	Prior permission required?
Biodynamic preparations	See Chapter 4. for requirement to use the preparations	From an approved source	No
Plant materials produced on the farm or brought-in from certified biodynamic or organic sources	Composts and liquid manures	<ul style="list-style-type: none"> • Biodynamic preparations used in all composting and fermentation • Manure limitations apply to brought-in materials (see Table 7-2) 	No
Plant materials produced on the farm or brought-in from certified biodynamic or organic sources	Mulching	<ul style="list-style-type: none"> • Manure limitations apply to brought-in materials (see Table 7-2) 	No, if according to an approved plan
Animal manures produced on the farm or brought-in from certified biodynamic or organic sources	Composts and liquid manures	<ul style="list-style-type: none"> • Biodynamic preparations used in all composting and fermentation • Manure limitations apply to brought-in materials (see Table 7-2) 	No
Animal manures produced on the farm or brought-in from certified biodynamic or organic sources	Direct application, uncomposted	<ul style="list-style-type: none"> • Manure limitations apply to brought-in materials (see Table 7-2) 	Yes
Plant materials from conventional sources	Composts and liquid manures	<ul style="list-style-type: none"> • Free from contaminants and prohibited materials as per s6.5.7.1 • Biodynamic preparations used in all composting and fermentation • Manure limitations apply (see Table 7-2) 	Yes
Plant materials from conventional sources	Mulches	<ul style="list-style-type: none"> • Free from contaminants and prohibited materials as per s6.5.7.1 • Manure limitations apply (see Table 7-2) 	Yes

Material	Usage	Conditions	Prior permission required?
Animal manures from conventional sources	Composts and liquid manures	<ul style="list-style-type: none"> Free from contaminants and prohibited materials as per s6.5.7.1 Manure limitations apply (see Table 7-2) 	Yes
Seaweed	Composts and liquid manures	<ul style="list-style-type: none"> Free of contaminants (see section 5.4.7.1. above). Biodynamic preparations used in all composting and fermentation Manure limitations apply (see Table 7-2) 	No, if according to an approved plan
Seaweed	Mulch	<ul style="list-style-type: none"> Free of contaminants (see section 5.4.7.1. above). Manure limitations apply (see Table 7-2) 	No, if according to an approved plan
Fish wastes	Composts and liquid manures	<ul style="list-style-type: none"> Free of contaminants (see section 5.4.7.1. above). Biodynamic preparations used in all composting and fermentation Manure limitations apply (see Table 7-2)	No, if according to an approved plan
Wood ash	Any	From untreated wood sources	No
Animal by-products such as <ul style="list-style-type: none"> blood and bone dried blood horn and hoof meal. 	Compost made by hot method	<ul style="list-style-type: none"> Free of pesticide or heavy metal residues and so documented 	No
Rock dusts, including	Any	General condition for rock dusts: Preferably incorporated through composting	As below
<ul style="list-style-type: none"> rock phosphate 		Cadmium level less than 90mg Cd/kg P ₂ O ₅ .	No
<ul style="list-style-type: none"> agricultural lime and dolomite 			No
<ul style="list-style-type: none"> gypsum (calcium sulphate) 		Of natural origin, not factory product.	No
<ul style="list-style-type: none"> elemental sulphur 		Of natural origin, not factory product.	No
<ul style="list-style-type: none"> glauconite (greensands) 			No
<ul style="list-style-type: none"> potassium feldspar 			No
<ul style="list-style-type: none"> other rock materials such as basalt, dunite, magnesite, chalk, serpentine, ulexite. 		Batch testing for heavy metals or other contaminants may be required.	Yes

Material	Usage	Conditions	Prior permission required?
Trace elements such as <ul style="list-style-type: none"> • boron • selenium • cobalt • molybdenum • iron • copper • manganese • zinc 		<ul style="list-style-type: none"> • Deficiencies demonstrated by <ul style="list-style-type: none"> ○ soil analysis, or ○ plant tissue analysis, or ○ observing typical symptoms. • Use less soluble forms in preference to more soluble forms 	Yes
Potassium magnesium sulphate		<ul style="list-style-type: none"> • Natural material such as langbeinite rock • Chloride content less than 3% by weight 	Yes

Table 6-2 Plant pest and disease materials and methods – orchard and perennial plant production

The following conditions apply to all items in this table:

1. **Each line is read as a whole.** If any part of it does not apply, the whole line does not apply. For example the table allows use of pheromones without permission for pest control if used in traps or dispensers. Pheromones used in any other way are prohibited materials.
2. Documentary evidence shall be obtained **prior to use** to show that all conditions relating to brought-in materials have been met.

Purpose	Material or method	Conditions and restrictions	Permission required?
Pest control	Natural predators encouraged by habitat and/or purposefully introduced e.g. <i>Encarsia formosa</i>	No GE organisms	No
Pest control	Sterile males purposefully released	No GE organisms	No
Pest control	Pheromones, lures and sex attractants	In traps or dispensers	No
Pest control	Coloured boards, sticky traps, attractant materials, sound scares	Non biodynamic materials to be contained	No
Pest control	Electrically and mechanically operated traps for rodents, barriers for slugs and snails and similar		No
Pest control	Vegetable oil emulsions and similar mixtures	No GE or synthetic pesticides.	No
Pest control	Oil emulsions containing mineral oils, and similar mixtures	No GE or synthetic pesticides. Perennial or permanent crops only	No
Fungi and bacteria control	Liquid manures and teas	No GE or synthetic chemical ingredients	No
Fungi control	Milk and milk products	No GE or synthetic chemical ingredients	No
Fungi control	Wettable sulphur flowers of sulphur without prohibited additives	See Management Plan requirement s6.6.11.	Yes

Fungi control	Sodium silicate or potassium silicate	See Management Plan requirement s6.6.11.	Yes
Fungi control	Lime sulphur	On permanent crops only	Yes
Fungi and bacteria control	Bordeaux mixture, burgundy mixture, copper hydroxide, cuprous oxide	On permanent and specialised crops only – max 3kg Cu/ha/yr – preferably no more than 500g/ha /spray. See Management Plan requirement s6.6.11. Soil residue testing may be required	Yes
Control any organism	Viruses e.g. granulosis, Bacteria e.g. <i>Bacillus thuringiensis</i> , Fungi e.g. <i>Trichoderma spp.</i>	Whole organism (not extract of toxins only). No GE or prohibited additives	No
Pest control	Natural pyrethrum (not synthetic, no chemical synergist)	No GE or synthetic ingredients. See Management Plan requirement s6.6.11.	Yes
Pest control	Quassia tea	No GE or synthetic ingredients. See Management Plan requirement s.6.6.11.	Yes
Pest control	Neem	No GE or synthetic ingredients. See Management Plan requirement s6.6.11.	Yes
Pest control	Diatomaceous earth	On permanent crops only	No
Pest control	Plant teas & extracts using approved materials	No GE or synthetic ingredients	No
Pest control	Peppering		No
Disease control	Propolis	No GE or synthetic ingredients	No
Pest and disease control	Homoeopathic materials	No GE or synthetic ingredients	No
Pest control	Potassium soaps (soft soaps)		No
Pest control	Carbon dioxide or nitrogen	Produce stores only	No
Disease control	Bentonite and other rock flours		No
Disease control	Pruning paste	From materials in this list	Yes if any ingredient requires permission. Otherwise No.

7. Animal Production

7.1. General

Principles:

Biodynamic farmers organise optimal living conditions for their livestock, and bring in to the farm only animals from other similarly managed enterprises. Animal husbandry is based on a balanced integration of animals into the wider farm organism as a self sustaining whole. The animals' role within the farm individuality includes:

- a) assisting in nutrient cycling;
- b) improving soil biological fertility through manures (especially cow manure) and organic matter accumulation under pasture;
- c) effective and appropriate land use;
- d) utilising waste and by products;
- e) improving biodiversity.

Livestock are an integral part of biodynamic agriculture and horticulture.

7.2. Pasture and Crops

For pasture establishment, pasture management and fodder crop production the principles and requirements of the arable section (Chapter 5.) apply.

7.3. Plan

Requirements:

All animal production and other activities in this chapter shall be according to procedures set out in a Management Plan approved by Demeter New Zealand.

7.4. Contractors

Principles:

The work of contractors is supervised by licensees to ensure it meets these standards

Requirements:

All licensees who contract out any part of the work of animal production shall ensure that the work done by contractors is in accordance with these standards. To this end:

- a) the Management Plan shall state what work is done by contractors, and under what conditions. This section of the Management Plan is to receive specific approval by Demeter New Zealand before implementation;

- b) Demeter New Zealand may, where the arrangements are complex and there is a risk that the standards may be breached, require that the methods to be used are detailed in a signed agreement between licensee and contractor. Copies of such agreements shall be available for inspection by Demeter New Zealand;
- c) Demeter New Zealand may require evidence that the licensee is actively monitoring the performance of contractors;
- d) the extent of work done by contractors shall be described in the licensee's annual report.

7.5. Feeding

Principles:

Fodder produced on the farm forms the basis for the animals' nutrition, and self sufficiency in this respect is aimed at. Where fodder must be imported care is taken that the fodder is appropriate to biodynamic production.

7.5.1. Feed quality

Principles:

Pasture or other living plants are the principal fodder for animals on biodynamic farms. This may be augmented with conserved feed, principally vegetative matter such as silage, hay or straw produced on the farm, and suited to particular species.

Requirements:

- 7.5.1.1. Livestock shall normally have access to pasture at all times.
- 7.5.1.2. Growth regulators, synthetic materials, hormones or bacteriostats are not permitted in the feed, nor are substances previously subjected to solvent extraction.
- 7.5.1.3. The feeding of **animal tissue or products**, (including fishmeal) to ruminants or to other livestock not normally eating such materials is prohibited.
- 7.5.1.4. Ruminants must be fed principally on fresh grass or other fresh green material. When insufficient fresh material is available, conserved green material may be substituted. Non vegetative feed, such as grain may be added so long as it does not exceed 40% of dry matter intake.

7.5.1.5. Additional requirements for feeding young stock are given in section 7.15 below.

7.5.2. Brought-in feeds

Principles:

There are limits on the amount of fodder which can be brought in, and minimum quality requirements for such brought-in feed which apply to the feeding of fully Demeter certified livestock. The same principles apply to uncertified livestock while they are on the property.

Requirements:

7.5.2.1. Under normal circumstances:

- a) 80% shall be produced on-farm, calculated on a daily basis, and;
- b) the balance may be certified organic or Demeter or *In Conversion to Demeter*, and:
 - i) shall be Demeter certified if available, or if not;
 - ii) shall be *In Conversion to Demeter* certified if available, or if not;
 - iii) shall be certified organic.

7.5.2.2. Uncertified feed shall not be brought-in, except as in 7.5.2.5. below.

7.5.2.3. Brought-in feed shall be material listed in Table 7-1 below.

7.5.2.4. Documentation for any proprietary feed or feed materials has to be supplied to show the product or the ingredients are certified organic.

7.5.2.5. In adverse conditions due to unforeseen occurrences such as natural disasters (not an automatic annual entitlement) Demeter New Zealand may, in individual cases, permit the bringing-in of conventional feed, or grazing-off on land not fully Demeter certified provided that:

- a) permission is sought and obtained;
- b) the feed is documented as free from undesirable contaminants including genetically modified organisms, and has had no prohibited materials applied during the growing season;
- c) while uncertified feeding exceeds 5% per day:
 - i) milk cannot be Demeter certified, and;
 - ii) meat animals cannot be Demeter certified if slaughtered within

three months.

- 7.5.2.6. Allowances are calculated both on the total feed produced on the farm, and on the feed given to any type of stock, expressed on a dry matter (DM) per annum basis and a DM per animal/day.
- 7.5.2.7. Feed from quarantine land is uncertified until 12 months after the last use for quarantine purposes.
- 7.5.2.8. **Grazing off** of livestock on Demeter certified land is permitted, and is counted as if the feed were produced on the farm.

7.6. Stocking rates

Principles:

The maximum stocking rate is determined by the principle that feed originates on the farm, or on the certified area, in case of a partially certified property carrying Demeter certified stock.

Requirements:

- 7.6.1. Stocking rate shall be calculated on the entire area of the farm excluding areas occupied by buildings and parkland.
- 7.6.2. The stocking rate shall:
- a) not exceed that which the farm could carry if it were run as a pure livestock enterprise;
 - b) not lead to degradation of soil fertility or stability;
 - c) not exceed 25 s.u per hectare. See *Reassessment of Stock Unit System - A History of the Stock Unit System* on www.maf.govt.nz for standard stock unit values;
 - d) not lead to nitrogen in excess of 170kg/ha being applied to the land in any year;
 - e) not lead to the total of plant and animal wastes and feed brought-in in any year exceeding the equivalent of 112 kg/ha of nitrogen (N) and 98kg/ha of phosphorus pentoxide (P₂O₅);
 - f) in the case of domestic poultry, not exceed 875 birds per hectare, or one bird per 11.5m².

7.7. Manurial waste disposal

Principles:

Composting/fermentation and application of animal wastes and manures is carefully managed to minimise nutrient loss, environmental pollution, or adverse effects on crop quality. Composting and fermentation processes are guided by the biodynamic compost preparations 502 – 507.

Requirements:

- 7.7.1. All livestock farms where animal waste is accumulated, such as in milking sheds, piggeries, henhouses, or through animal behaviour (e.g. alpacas) shall follow an approved plan for its incorporation into the soil of the farm.
- 7.7.2. The plan shall protect waterways and ground-water from pollution.
- 7.7.3. During the breakdown of the waste, appropriate quantities of compost preparations 502 – 507 shall be used where appropriate. Starter material developed using the compost preparations (e.g. cow pat pit) may be used in the treatment of liquid effluent.
- 7.7.4. The licensee shall ensure that the system is well maintained and works as intended.

7.8. Landscape stability

Principles:

Degradation of fragile areas such as steep land and wet-land (including riparian zones) is prevented by tree planting or retiring such soils and areas from grazing.

Requirements:

- 7.8.1. All pastoral farms shall have an approved plan for the protection of the landscape from erosion.
- 7.8.2. Where there is evident erosion or slumping of steep areas, the Assessment Group may require additional steps to be taken.

7.9. Breeding and stock replacement

Principles:

Breeding is by natural methods and is arranged to strike a balance between breeding for

hybrid vigour and stock becoming inbred. It involves the keeping of own sires where possible. Maximum resistance to disease and infection under local conditions is an important objective. The amount of **breeding (or capital) stock** which can be brought in is limited by these considerations.

Requirements:

- 7.9.1. Genetically **modified** or cloned animals, breeds, and their offspring or semen are not permitted to be brought-in or used.
- 7.9.2. **Artificial Insemination** is permitted, but discouraged in favour of natural breeding.
- 7.9.3. Embryo transfer, oestrus synchronisation using hormones, sperm separation for sex determination are not permitted.
- 7.9.4. Induced parturition is permitted only where certified by a veterinarian as necessary for animal health or welfare. Use of drugs will require quarantine and/or reconversion according to Table 7-6.
- 7.9.5. Stock brought-in for breeding or herd expansion must be certified organic unless special permission is given. Certified biodynamic stock is preferred, and is to be used if available.
- 7.9.6. Permission can be given for non-organic stock to be used for breeding where:
 - a) they are rare breeds;
 - b) herd size is being increased;
 - c) animals and new land are acquired as a package;
 - d) there is a breed change;
 - e) in the case of cattle, they are brought-in as calves under 7 days old (see Table 7-3);
 - f) where sires (male breeding animals) are brought-in.Where these stock are brought-in, the rules in 7.10. below shall apply.

7.10. Supplementary or brought-in livestock

Principles:

Farms bringing in animals certified organic (but not Demeter certified) for fattening or for bringing balance to the enterprise may be Demeter certified, provided proper quarantine

measures are taken, and all brought in stock is clearly and permanently identified. However, in most cases the stock does not become Demeter certified.

Requirements:

- 7.10.1. **Brought-in uncertified stock** cannot be certified for meat or products, except as in Table 7-3.
- 7.10.2. **Brought-in stock which is certified organic** can become Demeter certified according to Table 7-3.
- 7.10.3. Documentation **of all brought-in stock shall be obtained from the supplier prior to bringing the stock in and shall** include:
- a) for certified organic stock: A copy of the supplier's organic certificate plus a statement from the supplier that the animals are certified organic. Additionally, a lifetime treatment history shall be obtained if meat certification is proposed;
 - b) for uncertified stock: Details of all treatment for a period of one year prior to entry onto the certified property. Details to include: hormone implants, dips, drenches, pour-ons, antibiotic treatments and dry cow therapy, anthelmintics (especially bolus treatments), vaccinations, bloat treatments, other chemotherapeutic treatments. Failure to obtain documentation means that a one year quarantine period shall apply;
 - c) all brought in uncertified stock shall be quarantined as in section 7.17. below;
 - d) all brought-in animals shall be clearly and permanently identified, according to their status, using written records, and clear, permanent markings;
 - e) horses brought-in for short periods do not require documentation if the requirements of section 7.17.2. below are met.

Note: The New Zealand Government Animal Status Declaration does not supply sufficient information to satisfy this section of the standards.

7.11. Animal health and welfare

Principles:

Observant animal husbandry, including feeding, breeding and choice of breeds, and stockmanship lie at the heart of biodynamic stock management. It takes into account **normal developmental and behavioural patterns** for the species, so that innate

behaviour can be expressed, e.g. through free ranging. Basic requirements as laid down in the codes of the Animal Welfare Advisory Committee (AWAC) are seen as a minimum. (See <http://www.biosecurity.govt.nz/animal-welfare/codes-and-guidelines/codes-of-recommendations-and-minimum-standards>.)

Management practices are modified as required to prevent or control **metabolic, infectious or parasitic illnesses** and sometimes include widening the variety of livestock and herbage species, for example because of complementary grazing habits. **Stress and suffering** are minimised in all farm procedures and the animals' own natural rhythms and cycles are respected. Adequate fodder and clean water, are provided. Conventional chemotherapeutic treatment are used to save life or to prevent unnecessary suffering, or if compulsory by law. However, diseased or severely infected animals receive **timely treatment**.

Requirements:

- 7.11.1. Farmers shall comply with all **legislation** relating to animal welfare and occupational safety and health.
- 7.11.2. Sick animals shall receive timely treatment with effective remedies where those exist. Likelihood of loss of certification of the animal is not an acceptable reason for withholding treatment with a material outside these standards (prohibited material), or for permitting suffering.
- 7.11.3. Synthetic chemical remedies and antibiotics must be given either by a veterinarian or according to a veterinarian's instructions.
- 7.11.4. Materials for medicinal treatment of animals are classified into one of three types:
 - a) those remedies that may be used at will, and are preferred over all others. They include organic, anthroposophical, homoeopathic and other natural remedies that are listed in the tables in these standards as able to be used without conditions;
 - b) less acceptable remedies but which are allowed in particular – limited – circumstances. Specific restrictions on use are shown in the table of remedies, Table 7-6. Reliance on these treatments must be reduced wherever possible, and limits of use may be prescribed by Demeter New Zealand. Blanket or routine use of such treatments is not permitted.

- c) prohibited. All remedies not specifically listed in the tables are prohibited, and may not be used except where other remedies are ineffective in preventing suffering, in which case they **must** be used if available. Animals must then be quarantined and will lose certification according to Table 7-6. All treated animals must be clearly and unambiguously identified using written records, and clear, permanent markings.

7.11.5. Where there is ongoing and widespread use of less acceptable or prohibited treatments Demeter New Zealand may take these as indicating weaknesses in the farming system and require those weaknesses to be addressed.

7.11.6. Only remedies whose use is detailed in contingencies in the approved Management Plan may be stored on a certified property. A usage register is to be kept in the storage area.

7.11.7. Birds shall not be slaughtered at less than the minimum ages given in Table 7-4.

7.12. Surgical procedures

Principles:

Animals are managed as far as possible in their natural state, without mutilation. Horns, antlers, tails, noses, ears, testicles and other parts of animals are left intact wherever possible so that they can perform their natural functions. Surgical procedures to animals are undertaken only where the health or welfare of animals or farm staff is at risk. Before they are undertaken, alternative non-surgical procedures are investigated to ensure that surgery is justified.

Requirements:

7.12.1. The same rules apply to all livestock on the farm, whether or not they are certified, and whether or not the licensee wishes for their certification.

7.12.2. Before undertaking any surgical procedure, the licensee shall investigate alternatives, (including non-surgical or less intrusive procedures) and satisfy himself that there are no acceptable alternatives and that the surgery is required for animal or human welfare. The reasons for this procedure shall be included in an approved Farm Management Plan.

7.12.3. The only surgical procedures permitted without individual veterinary advice are:

- a) tail docking of lambs only, under 6 weeks of age. Use of knives is not allowed;
- b) castration under 6 weeks of age;
- c) dehorning (debudbing) under 6 weeks of age using a hot iron. Caustic paste is not permitted. Stock older than six months shall be de-horned only under veterinary supervision and with local anaesthetic. Approval for de-horning cattle, bringing in de-horned cattle or retaining already de-horned cattle on farm must be renewed annually;
- d) nose ringing of bulls and free ranging pigs;
- e) earmarking and ear tagging;
- f) horn tipping, hoof trimming and freeze branding.

7.12.4. Other veterinary surgery in individual emergencies is permitted only:

- a) where a veterinarian advises that it is necessary for the health or welfare of a particular animal, or;
- b) where a veterinarian is not available but the farmer believes a veterinarian would so advise.

7.12.5. Certified stags may have antlers removed if they are or are expected to become a source of danger. Velvet may not be certified. The requirements of table 7-6 apply.

7.12.6. Where anaesthetics or other therapeutics that have non-zero withholding periods are used, quarantine procedures (see section 7.17. below) and/or decertification of the animals (see Table 7-6) will apply. Failure to observe the requirements of the standards may affect certification of other livestock and/or land.

7.12.7. Any other procedure not authorised here (such as debeaking, toe clipping, wing burning and mulesing) is forbidden.

7.13. Status of treated animals and the property

Principles:

Animals treated with prohibited materials lose certification. Land to which they have access also loses certification unless quarantine rules are followed. Quarantine periods are based on label withholding periods. Quarantine areas are not normally fully certified land.

Requirements:

7.13.1. Animals treated with synthetic biocides lose certified status for:

- a) meat for life, and;
- b) products (milk, fibre etc) for a period of one year unless otherwise indicated in Table 7-6.

7.13.2. Decertification periods begin at the date of treatment.

7.13.3. Treated animals may still be used for breeding purposes.
(Comment: Often it will be inadvisable to do so.)

7.13.4. Treated animals may be used as nursing mothers for young stock after the quarantine period has elapsed.

7.14. Trace element deficiencies

Principles:

Animals on biodynamic farms receive the trace elements they need through the feed. Any deficiencies are corrected in the first instance by correcting the soil, so that the feed is improved. A whole farm approach is taken, and soil amendments are based on proven need. Where animals need to be given trace elements directly, preference is given to methods where the stock can determine the level of intake, e.g. through mineral licks.

Requirements:

7.14.1. Correction of deficiencies in individual animals through drenching and injection is restricted to those materials and conditions defined by Table 7-6.

7.14.2. Bolus treatments are not permitted, except as provided in Table 7-6.

7.14.3. Development of a plan to prevent repeated treatment may be required.

7.15. Raising young stock

Principles:

Newly born stock are raised on mother's milk and in groups if separated from the mother.

Requirements:

7.15.1. **Feeding requirements for young stock are:**

- a) newly born stock must receive first-milk (colostrums) for at least three days. They must be raised on whole, natural, farm produced milk until weaning;
- b) young stock may not be fed on substitutes but must receive feed meeting the full requirements of these standards as set out in the section on feed;
- c) young stock may suckle nursing mothers who have received chemotherapeutic veterinary treatment, only after the required quarantine period has elapsed.

7.15.2. The maximum mob size for **calves raised in pens** is 12.

7.15.3. **Orphaned stock** may be raised on milk substitutes only in case of emergency or necessity when whole milk powder is not available. The licensee shall ascertain the full details of the formula before feeding to ensure it does not contain prohibited materials such as antibiotics. Such animals can become certified after one year from weaning, and shall be clearly and permanently identified before being returned to the herd or flock.

7.16. Housing, shelter, shade and confinement

Principles:

Animals on biodynamic farms are free ranging. The guiding principle of range (and housing, in the case of housed animals like pigs and poultry) design is to allow animals to carry out most aspects of their innate behaviour. They are provided with appropriate shade and shelter, and confinement is minimised to that necessary in particular circumstances.

Requirements:

7.16.1. All animals must have shade and shelter appropriate to their species.

Specifically:

- a) **cattle, sheep, horses, deer and goats** must have shade and shelter available as necessary. Acceptable forms are hedges and trees, orographic shelter (gullies), artificial barriers effective against storm and sun, individual animal covers;
- b) **pigs and poultry** must have housing available at all times, but must not be confined to it except in emergencies (e.g. grass fires) and not for extended periods. **Housing of pigs** in family groups up to a maximum of 25 animals is permitted.

- 7.16.2. **Sows** need to have a free range area of at least 1000m² per animal, and farrowing pens of at least 6m².
- 7.16.3. Keeping animals on mesh or slatted floors is not permitted except for short periods such as shearing.
- 7.16.4. Deer and pigs shall have access to wallowing areas.
- 7.16.5. For poultry ranging, birds shall have free access to a diverse and well vegetated free range, and management shall ensure that they actually do range. This is applicable at 4 weeks of age for meat birds and from 6 weeks for laying birds. Moveable housing rotational ranging or similar special provisions shall be made for meat birds to overcome their natural tendency to limit their ranging.
- 7.16.6. Demeter New Zealand may require roosters in hen flocks to protect against predators and to prevent hen pecking.
- 7.16.7. For laying hens and cockerels, perching space of at least 200 mm per animal and floor space of at least $\frac{1}{5}$ m² (with deep litter and dust baths) shall be provided. Additionally, laying hens shall have at least 120cm² per animal nesting box space.
- 7.16.8. For laying hens only, the day may be lengthened up to 15 hours per day with artificial lighting.
- 7.16.9. Waterfowl shall have access to water, ponded or running, as appropriate to their species.
- 7.16.10. Animals shall not be tethered or closely confined to cages or pens except for short periods for purposes such as shearing, marking and medicinal examination and treatment.
- 7.16.11. Cleaning and disinfecting of housing using permitted materials as listed in Table 7-5 shall be done as required, and for batch produced animals (e.g. pigs, meat birds) shall be done between batches.

7.17. Quarantine

Principles:

The status of certified land is protected by ensuring that animals recently treated with prohibited materials or recently grazing uncertified land are kept out. To this end, every farm has a quarantine area for grazing stock for short periods.

Requirements:

7.17.1. All **animals** entering **a certified property** or area shall undergo a minimum of 48 hours quarantine, to enable them to empty out.

7.17.2. Exceptions to the above are available.

- a) for animals entering from Demeter properties, no quarantine is required.
- b) For animals certified organic at the time of entry, no quarantine is required.
- c) for horses and other working animals brought-in for short periods, provided that when grazing during non-working periods they are confined to quarantine land No other quarantine is required.

7.17.3. Additionally, brought-in stock shall be quarantined as required by Table 7-6, and in accordance with the treatments described in their documentation (see section 7.10.3. above). Where time has elapsed since treatments, it may be deducted from quarantine periods to find the residual quarantine necessary after stock are brought-in. If the residual quarantine period for all treatments is zero, then the quarantine shall be 48 hours.

7.17.4. **Animals treated** with therapeutic materials shall be quarantined before being returned to the herd or flock on the certified area, according to Table 7-6, the principle being that twice the longest withholding period (usually but not always the withholding period for meat) must have elapsed.

7.17.5. All treated and quarantined animals shall be clearly and permanently identified, according to their status, using written records, and clear, permanent markings.

7.17.6. **Quarantine areas**, both for entry and for treatment quarantine, shall be designated on the farm map, and shall be sufficiently large to accommodate the numbers of treated or entering animals for the required period of time. These areas shall be securely fenced and shall not be grazed by certified animals, or used for production of certified crops within one year of last use for quarantine purposes.

- 7.17.7. Fodder conserved from quarantine areas may be used on farm in which case it is rated *In Conversion to Demeter* or at the level of certification of the farm, whichever is lowest.

(Comment: It is in the Licensee's interest to choose those treatments with the lowest withholding periods, as this minimizes disruption of grazing management and the amount of quarantine land required.)

7.18. Transport and handling

Principles:

Livestock are transported and handled in a humane and careful manner, minimising any pain and distress. Yards, races and vehicles are, wherever possible, designed to maximise livestock comfort and produce stress free compliant behaviour.

Requirements:

- 7.18.1 Stock shall be transported only if they are in a condition to withstand the proposed journey.
- 7.18.2 Before transportation, the licensee shall consider:
- a) age of the stock, species and sex;
 - b) distance to be travelled and time expected to be taken;
 - c) temperature and humidity;
 - d) state of roads and vehicles (including their state of repair) to be used;
 - e) expected birthing date.
- Stock shall not be transported if consideration of the conditions creates a reasonable expectation of pain or suffering.
- 7.18.3 The time taken for any journey shall not exceed:
- a) eight hours between the time of loading and unloading for sheep or goats;
 - b) twelve hours between the time of loading and unloading for cattle;
 - c) more than 3 days in total.
- 7.18.4 Where stopovers are necessary:
- a) animals shall be discharged onto Demeter certified land, or if that is not available, organically certified land for no longer than 24 hours;

- b) feed (Demeter certified, or if that is not possible certified organic) and water shall be provided;
- c) appropriate shade and shelter shall be available.

7.18.5 All stock handling, whether for loading, yarding, pasture rotation, milking or other reasons shall be undertaken with care and attention to animal welfare. Particular attention shall be paid to ensure that:

- a) animals are not over-driven by dogs or farm vehicles;
- b) all staff are suitable by way of training, experience and attitude to animals;
- c) there is a suitable designated person responsible for stock welfare who is given sufficient authority for the task.

7.18.6 All confinement for the purposes of transport or before or after farm procedures such as shearing, surgery, marking and the like shall ensure adequate ventilation and space for stock to stand naturally.

7.18.7 The following methods and materials are prohibited:

- a) except as provided below, use of electrical coercion equipment other than normal electric fencing;
 - b) tranquillising or other drugs not permitted by Table 7 -6;
 - c) vehicles and facilities whose design or state of disrepair could harm stock.
- Electrical prodders may be used when loading cattle if other methods are unsuccessful, provided that there is sufficient space ahead of the animals for them to move into. The licensee shall monitor the usage to ensure it is no more than absolutely necessary.

7.18.8 The following shall be recorded in the primary recording system:

- a) date, time and destination of animals despatched, and;
- b) number of animals and how they are identifiable;
- c) the duration of the journey;
- d) how this compliance with this section of the standard was ensured.

Table 7- 1 Permitted feeds

This table lists all the types of feed that may be fed to particular types of animals. The table should be read in conjunction with section 7.5., but if a feedstuff is not listed here, it may not be used in any circumstances.

Feedstuffs and additives to be used shall be documented in an approved Management Plan.

For allowable percentages, documentation and additional requirements in relation to brought-in feeds, see section 7.5.2. above.

<p>a. Permitted feedstuffs for ruminants</p> <ul style="list-style-type: none"> • Staple feeds – hay, straw, silage, maize and beets • Grains, brans, grain offals • Pulses • Hay made from tree or shrub foliage • Herbs • Molasses • Grassland and arable products not mentioned elsewhere • Waste fruits and vegetable providing no processing aids have been used • By-products of organic processing (products of animals are excluded) • Seaweed • Mixes of the above
<p>b. Permitted feedstuffs for pigs: In addition to a. above:</p> <ul style="list-style-type: none"> • Skim milk powder and milk products without additives • Plant oils of natural origin (providing there is no concern about residue levels) • Clean vegetable litter
<p>c. Permitted feedstuffs for poultry In addition to a. and b above:</p> <ul style="list-style-type: none"> • Milled dried herbage • Paprika powder
<p>d. Permitted additives for animal feed</p> <ul style="list-style-type: none"> • Yeast • Calcified (i.e. fossilised) seaweed • Fodder grade lime • Sedimentary lime • Mixtures of herbs • Salt • Mineral mixes • Cod-liver oil • Carob • Natural vitamins and mineral nutrients
<p>e. Permitted silage inoculants</p> <ul style="list-style-type: none"> • Feed grade sugar • Grain meal • Lactic acid promoter

- Whey
- Molasses
- Salt

f. Permitted feed extenders and additives:

- Stock salt
- Calcified seaweed, feed lime, lime from seashells
- Mixtures of minerals and natural vitamin preparations (no individual amino acids)
- Rock flour
- Plant oil, bran, brewers yeast, molasses as a carrier in mineral concentrates or as an aid to reduce dust, or as an aid in pressing (max. 2% of the production ration)

g. Emergency conditions extensions

Additional materials for which permission may be given but only under section 7.5.2. above:

- Conventionally produced basic, staple feeds to meet structural and energy requirements such as hay, grass silage, as far as possible from enterprises of low production intensity
- Conventionally produced grain and by-products from grain processing and grain offals from milling
- Conventionally produced legumes; (no extraction cake)
- Conventionally produced oil seeds, oil press – cake, expeller cake
- Conventionally produced fodder beet

Any approval given to a licensee under this provision will be reported to Demeter International.

Table 7-3 Brought-in livestock status and products

Animal type	Certification status on arrival	Age on Arrival	Fed and managed to the standards for:	Product	Status of product if processed under Demeter contract
Cattle	Organic	Any	Since arrival	Milk	Demeter or <i>In Conversion to Demeter</i> , status same as property
Any	Organic	Any	One year or at least two thirds of life, whichever is the greater	Meat	Demeter or <i>In Conversion to Demeter</i> , status same as property
Mammals other than cattle	Organic	Any	4 months	Fibre	Demeter or <i>In Conversion to Demeter</i> , status same as property
Cattle	Conventional	Less than 7 days	Since arrival. See also first milk requirement, s. 7.10.1. above	Milk	Demeter
Cattle	Conventional	More than 7 days old	One year post quarantine	Milk	<i>In Conversion to Demeter</i>
Cattle	Conventional	More than 7 days old	Two years post quarantine	Milk	Demeter or <i>In Conversion to Demeter</i> , status same as property
Cattle	Conventional	More than 7 days old	Any period	Meat	Conventional
Mammals other than cattle	Conventional	Any	One year post quarantine	Fibre	<i>In Conversion to Demeter</i>
Mammals other than cattle	Conventional	Any	Two years post quarantine	Fibre	Demeter or <i>In Conversion to Demeter</i>

Animal type	Certification status on arrival	Age on Arrival	Fed and managed to the standards for:	Product	Status of product if processed under Demeter contract
					<i>Demeter</i> , status same as property
Mammals other than cattle	Conventional	Any	Any period	Meat	Conventional
Birds	Conventional	Less than 3 days	Since arrival	Eggs	Demeter or <i>In Conversion to Demeter</i> , status same as property
Birds	Conventional	Less than 3 days	Since arrival. See also minimum age for slaughter, Table 7-4.	Meat	Demeter or <i>In Conversion to Demeter</i> , status same as property
Birds	Conventional	Over 3 days	Any period	Meat	Conventional
Birds	Organic	Less than 18 weeks		Eggs	Demeter or <i>In Conversion to Demeter</i> , status same as property
Birds	Organic	Any	30 days. See also minimum age for slaughter, Table 7-4.	Meat	Demeter or <i>In Conversion to Demeter</i> , status same as property

Table 7- 4 Minimum age at slaughter for poultry

<u>Animal</u>	<u>Minimum age (days)</u>
Chickens	81
Capons	150
Peking ducks	49
Female Muscovy ducks	70
Male Muscovy ducks	84
Mallard ducks	92
Guineafowl	94
Turkeys and roasting geese	140

Table 7- 5 Products authorised for cleaning and disinfection of livestock buildings and installations (e.g. equipment and utensils)

Potassium and sodium soap
Water and steam
Milk of lime
Lime
Quicklime
Sodium hypochlorite (e.g. as liquid bleach)
Caustic soda
Caustic potash
Hydrogen peroxide
Natural essences of plants
Citric, paracetic acid, formic, lactic, oxalic and acetic acid
Alcohol
Nitric acid (dairy equipment)
Phosphoric acid (dairy equipment)
Cleaning and disinfection products for teats and milking facilities
Sodium carbonate
Pyrethrum (not synthetic, no chemical synergists)
Neem
Sulphur

Table 7- 6 Animal treatments – conditions and results for certification

The following conditions apply to all items in this table:

1. **Each line is read as a whole.** If any part of it does not apply, the whole line does not apply. For example line 1 allows vaccinations under certain conditions. If these conditions are not met, vaccination is prohibited.
2. Documentary evidence shall be obtained **prior to use** to show that all conditions (including requirements for brought-in materials) have been met.

No	Treatment	Formulation/delivery method	Purpose and/or Restriction	Permission required?	Quarantine requirements	Status of animal
1	Vaccination	Injection or oral	Only for diseases known to occur on the farm; no routine or blanket vaccinations, except against zoonoses or if compulsory by law	No	None	Unchanged
2	Zinc sulphate or copper sulphate	Solution in water used topically	Footbaths only	No	48 hours	Unchanged
3	Zinc oxide	In ointment where other ingredients are principally natural materials	According to veterinary directions	No	48 hours	Unchanged
4	Magnesium sulphate (Epsom salts)	Solution in water for oral use or injection	According to veterinary directions	No	None	Unchanged
5	Electrolytes (dextrose, potassium, calcium & sodium chlorides, magnesium sulphate & vitamins)	Solution in water for oral use	According to veterinary directions	No	None	Unchanged
6	Propylene glycol, choline and dextrose	Solution in water for oral use	According to veterinary directions	No	None	Unchanged
7	Calcium borogluconate, & magnesium chloride	Solution in water for oral use or injection	According to veterinary directions	No	None	Unchanged
8	Caffeine, quassia and nux vomica	Cold water extracts for oral use	Tonic	No	None	Unchanged

No	Treatment	Formulation/delivery method	Purpose and/or Restriction	Permission required?	Quarantine requirements	Status of animal
9	Anaesthetics with nil withholding period		According to veterinary directions	No	None	Unchanged
10	Iodine, potassium iodide	Powder, tincture	Antiseptic	No	None	Unchanged
11	Teatspray	Iodine, glycerol and plant oils	Antiseptic	No	None	Unchanged
12	Elemental sulphur	Powder, liquid	Ectoparasite treatment	No	None	Unchanged
13	Neem	Oil	Ectoparasite treatment	No	None	Unchanged
14	Natural pyrethrum	Liquid	Pure, without piperonyl butoxide synergist, only when applied to livestock or housing	No	None	Unchanged
15	Herbal & plant based remedies	Various	Various	As indicated in approved Management Plan	None	Unchanged
16	Homoeopathic remedies	Various	Various	No	None	Unchanged
17	Cider vinegar	Orally	Tonic	No	None	Unchanged
18	Vegetable oils	Orally	Bloat	No	None	Unchanged
19	Seaweed	In feed	Tonic	No	None	Unchanged
20	Chalk	Powder	Hypocalcaemia	No	None	Unchanged
21	Petroleum jelly	Topically	Wound dressing	No	None	Unchanged
22	Trace elements	Solutions of simple salts administered orally i.e. not chelates or other complexes	Demonstrated need	No	None	Unchanged

The following do not form part of Table 7-6 – they are items referred to in section 7.11.4.c) above as Prohibited. They are included here, for completeness, so the effect and conditions for using them are easily visible.

Treatment	Formulation/delivery method	Purpose and/or Restriction	Permission required	Quarantine requirements	Status of animal
Bolus treatment	Any	Prohibited remedy. To be used only in cases of welfare necessity of individual animals	No	2x active period, 2x withholding period or 48 hours, whichever is the greatest. See also s. 7.17. above	If material is a numbered item in Table 7-6, rules there apply, otherwise uncertified for meat for life, for products for one year post quarantine
All treatments such as dips, pour-ons, injections, drenches and antibiotics not listed above	Any	Prohibited remedy. To be used only in cases of welfare necessity of individual animals	No	Twice withholding period or 48 hours, whichever greater. See also s. 7.17. above	Uncertified for meat for life, for products for one year post quarantine

8. Harvest and Post Harvest Management

Principles:

Harvesting and post-harvest management of Demeter certified produce maintains its living qualities and minimises any damaging effects.

8.1. Plan

Requirements:

8.1.1. All harvesting and other activities in this chapter shall be according to procedures set out in a Management Plan approved by Demeter New Zealand.

8.2. Contractors

Principles:

The work of contractors is supervised by licensees to ensure it meets these standards.

Requirements:

All licensees who contract out any part of the work of harvest or post harvest management shall ensure that the work done by contractors is in accordance with these standards. To this end:

- a) the Management Plan shall state what work is done by contractors, and under what conditions. This section of the Management Plan is to receive specific approval by Demeter New Zealand before implementation;
- b) Demeter New Zealand may, where the arrangements are complex and there is a risk that the standards may be breached, require that the methods to be used are detailed in a signed agreement between licensee and contractor. Copies of such agreements shall be available for inspection by Demeter New Zealand;
- c) Demeter New Zealand may require evidence that the licensee is actively monitoring the performance of contractors;
- d) the extent of work done by contractors shall be described in the licensee's annual report.

8.3. Harvest

8.3.1. Harvesting machinery, implements and containers shall be free of contamination by:

- a) diseased or stale produce from other harvests;
- b) soil or plant materials from conventional farming;
- c) substances prohibited by these standards.

- 8.3.2. Containers, gloves, harvesting tools, machinery and other equipment shall be used only for harvest of Demeter certified produce, or shall be cleaned before use. Cleaning procedures shall ensure that:
- a) Demeter produce is not contaminated by cleaning materials;
 - b) plant material and soil from uncertified properties are not brought onto certified land.
- 8.3.3. Acceptable cleaning measures for equipment include:
- a) washing or flushing in potable water. If detergents are used the wash water shall be disposed of in an approved manner and the item rinsed with potable water;
 - b) air blasting;
 - c) water blasting with potable water;
 - d) steam cleaning;
 - e) vacuum cleaning.
- 8.3.4. Where machinery cannot be completely cleaned by the above measures, Demeter New Zealand may approve sacrificial flushing with the first part of the crop harvested.
(Comment: For example, where a grain harvester has been used previously for conventional produce and cannot be completely cleaned the first few litres of harvested grain are sometimes used as “flushings” and sold as conventional.)
- 8.3.5. Pest and disease control during harvest shall follow the pest and disease control requirements of the relevant primary production section.
- 8.3.6. Materials and procedures likely to damage the living quality and appearance of the produce shall be avoided or minimised.

8.4. Containers

Requirements:

8.4.1. Storage and dispatch containers

- 8.4.1.1. Containers shall be new, or cleaned as specified in 8.3.1., 8.3.2. and 8.3.3. above.

- 8.4.1.2. Wooden containers shall be of untreated wood.
- 8.4.1.3. Cardboard containers previously used for conventional produce shall be fully lined with acceptable materials such as plastic or new paper free of contaminants such as ink and dioxins. (Comment: Paper bleached with chlorine may contain dioxins.)
- 8.4.1.4. Plastic containers may be used provided the plastic of any damaged container is recycled wherever possible.
- 8.4.2. See section 8.8. below for separate rules for packaging materials.

8.5. Transport

Requirements:

- 8.5.1. Produce shall be transported in open containers only where:
- a) the cargo area is sealed or closed by curtain sides;
 - b) the vehicle transports food only;
 - c) there is a process for ensuring separation of uncertified produce or produce of a different certification (the situation known as parallel production).
- 8.5.2. Where produce is transported in a vehicle in bulk, without containers, the cargo area shall be closed-in or sealed and the vehicle shall:
- a) be dedicated to the transport of certified produce, that is not used for other purposes, or;
 - b) be cleaned as specified in 8.3.1., 8.3.2. and 8.3.3. above before being used.
- 8.5.3. Where produce shares a vehicle with non food goods:
- a) containers shall be sealed against ingress of any other product;
 - b) all possible steps shall be taken to avoid contamination with foreign matter.
- 8.5.4. All containers, whether sealed or not, must be clearly marked with the certification status of the produce, that is:
- a) Demeter;
 - b) *In Conversion to Demeter*;
 - c) *Certified Organic by the Bio Dynamic Association*;

d) In Conversion to Certified Organic by the Bio Dynamic Association. Labels saying only “organic” or “biodynamic” are not sufficient. The producer’s name and contact details shall also be marked on the container.

8.5.5. In all cases where certified produce is transported:

- a) the method of transport shall be documented in the Management Plan and approved by Demeter New Zealand;
- b) all staff and contractors shall be aware of and adhere to the documented procedures;
- c) the licensee or owner of the produce shall regularly review the system to ensure that documented requirements and product integrity are not compromised.

8.5.6. Transport of live animals shall be according to the requirements for Chapter 7. Animal Production.

8.6. Storage areas

Requirements:

8.6.1. Storage buildings shall wherever possible be constructed to prevent the ingress and refuge of pests and diseases. See also *Demeter International Processing Standards*, Section 8, for recommended techniques.

8.6.2. Work and storage spaces and procedures shall be organised to prevent pest problems. See also *Demeter International Processing Standards*, Section 8, for recommended techniques.

8.6.3. Regular procedures shall be maintained to detect pests and diseases in their early stages. See also *Demeter International Processing Standards*, Section 8, for recommended techniques.

8.6.4. Contamination from construction materials shall be avoided.

8.6.5. Cleaning and disinfection of buildings must be done in such a way that contamination of the produce is impossible. Unless otherwise approved this means:

- a) as described in an approved Management Plan;

- b) in the absence of the crop; and;
- c) the space is appropriately washed, flushed and/or ventilated afterwards.

8.6.6. Produce of the same kind but of a lesser certification status shall not be stored in the same building or vicinity unless:

- a) there is an approved documented process for ensuring separation of produce of a lesser certification (the situation known as parallel production);
- b) all staff are aware of the documented procedures through documented training and awareness programs;
- c) all staff adhere to the documented procedures;
- d) the licensee or owner of the produce regularly reviews the system to ensure that documented requirements and product integrity are not compromised.

(Comment: this section applies, for example to *In Conversion to Demeter* oranges stored with full Demeter oranges, but not to *In Conversion to Demeter* apples stored with full Demeter oranges.)

8.7. Pest and Disease Control in Buildings, Storage Areas and Vehicles

Principles:

Preventative measures have absolute priority over all other types of pest and disease control.

Requirements:

8.7.1. Pest control shall be according to measures set out in an approved Management Plan.

A list of recommended procedures for sections 8.6.1., 8.6.2. and 8.6.3. above may be found in *Demeter International Processing Standards*, Section 8. See www.demeter.net or consult Demeter New Zealand.

8.7.2. Specific pest control procedures permitted in produce stores and vehicles are:

- a) high pressure water (cold or hot);
- b) mechanical – scraping, brushing etc;
- c) inert atmosphere of argon, nitrogen or carbon dioxide;
- d) heat treatment (including cooling and freezing);
- e) forced air circulation, compressed air blasting, vacuum cleaning;

- f) pheromone traps;
- g) sticky papers (not containing insecticides);
- h) pyrethrum (only natural pyrethrum – no synthetic pyrethroids – and not containing synergists such as Piperonyl butoxide) may be used as a spray or mist provided the produce is removed and surfaces that will be in contact with produce are flushed with potable water;
- i) natural plant oils;
- j) trapping with mechanical and electrical devices;
- k) rodent poisons. Poisoning of rodents is a method of last resort for which permission may be given after all other methods have failed. Permission will not be given:
 - i) if other measures are available, or;
 - ii) if other measures have not been trialled, or;
 - iii) if insufficient evidence of need is supplied;
- l) Where prior permission is given to poison rodents:
 - i) only colecalciferol or warfarin may be used, and;
 - ii) only in bait stations, and;
 - iii) only if the bait cannot be removed, and;
 - iv) renewed permission must be obtained from Demeter New Zealand prior to each usage.

8.7.3. In addition to the above limitations on specific pest control measures, the following also apply:

- a) produce shall not come in contact with any of the materials listed in g) to k) of 8.7.2. above. If that cannot be guaranteed the materials may not be used;
- b) records shall be kept of all use of pest control materials including:
 - i) date and time of use;
 - ii) material used, including trade name, active ingredient and amount used;
 - iii) method of use (including where used – location of bait stations for example);
 - iv) product safety sheets from suppliers;
 - v) effect (degree of success or failure). See also *Demeter International Processing Standards*, Section 8, for techniques for estimating effect.

- c) Where a contractor is employed it is the licensee's responsibility to ensure that the contractor meets all the requirements of these standards. See also 8.2. above .

8.7.4. The above measures are for pest control in post harvest areas only, and do not apply to primary production areas. See chapters on specific types of production for information on what methods and materials may be used for pest control.

8.8. Packaging and presentation

Principles:

Packaging and other presentation materials and methods are chosen to preserve the living quality and appearance of Demeter produce, and minimise impact on the environment.

Requirements:

- 8.8.1. In this section packaging includes other presentation materials such as coatings and surfacing materials.
- 8.8.2. Packaging materials shall not contaminate the produce.
- 8.8.3. The amount of packaging shall be the minimum necessary to meet hygiene requirements and to maintain the quality and integrity of the product.
- 8.8.4. Where two or more packaging materials are equally acceptable, the one that has lowest environmental impact shall be chosen. Consideration shall include energy content of the material and energy used in its manufacture, possibilities for re-use and recycling.
(Comment: Information is readily available on the internet e.g. at <http://www.environment-agency.gov.uk> or numerous websites with information on Life Cycle Analysis (LCA).)
- 8.8.5. Packaging shall not normally contain polyvinyl chloride (PVC) or other chlorinated synthetics.
- 8.8.6. Aluminium cans and aluminium synthetic laminates (e.g. aluminised plastics) shall not normally be used.

- 8.8.7. If packaging is reused it shall be cleaned according to 8.3.1., 8.3.2. and 8.3.3. above.
- 8.8.8. Wherever possible, all plastics shall carry ISO codes identifying the plastic type.
- 8.8.9. *Demeter International Processing Standards* (see www.demeter.net) give requirements for the packaging of particular products.

8.9. Labelling

Principles:

Demeter produce is labelled in such a way as to give clear and accurate information to the consumer or trader and in accordance with principles in Chapter 3. above.

Requirements:

- 8.9.1. The requirements of Chapter 3. above apply to labelling of Demeter produce.
- 8.9.2. The Demeter flower symbol, the Demeter co-brand symbol, the words “Demeter”, “*In Conversion to Demeter*” or “*Certified Organic by the Bio Dynamic Association*” may be placed on packaging only by persons licensed under these standards, or by their employees under their direct supervision.
- 8.9.3. Where either symbol is used, or the word Demeter is used to describe the product as a whole:
- a) the product shall contain at least 90 percent fully Demeter certified ingredients;
 - b) the product may contain at most 10% certified organic ingredients or *In Conversion to Demeter* ingredients (declared according to 8.9.8. below) if Demeter ingredients are unavailable;
 - c) the product may contain at most 5% conventionally produced ingredients (declared according to 8.9.8. below) if Demeter or certified organic ingredients are unavailable;
 - d) the product shall not contain any prohibited material;
 - e) the product may contain other ingredients such as additives not of agricultural origin only if they are authorised by the *Demeter International Processing Standards* (see www.demeter.net);

- f) the product shall not contain any one ingredient from both Demeter and non Demeter sources;
- g) the product shall have the recipe approved in advance by Demeter New Zealand;
- h) no ingredient is considered unavailable unless diligent and wide ranging effort can be shown to have been made to source it in the required quality, and Demeter New Zealand has agreed that it cannot be found;
- i) the percentages of ingredients in a product shall be calculated from the individual weights, but excluding salt and water.

8.9.4. Where the words “*In Conversion to Demeter*“ are used to describe the product as a whole, the requirements of 8.9.3. above shall apply as if “*In Conversion to Demeter*” is substituted for “Demeter”, wherever the sense allows.

8.9.5. Where the words “*Certified Organic by the Bio Dynamic Association*” are used, the rules of section 8.9.3. above shall apply except that there shall be no limit to the amount of other certified organic ingredients (item b.) provided the recipe has prior approval of Demeter New Zealand.

8.9.6. There is no restriction on ingredients of a higher certification status being used in a product described as a whole as being of a lower certification, such as full Demeter ingredients in a product labelled *In Conversion to Demeter*. In deciding what can be used, the order of status is:

- a) Demeter;
- b) *In Conversion to Demeter*;
- c) *Certified Organic by the Bio Dynamic Association* or other certified organic;
- d) In Conversion to Certified Organic by the Bio Dynamic Association or In Conversion to other certified organic;
- e) Conventional.

8.9.7. Where a product does not qualify under 8.9.3. above for the use of either symbol or a description as Demeter, the symbols and the word may only be used in the ingredients list to describe an ingredient that does qualify. The colour, style and size of lettering shall be the same as for other non-qualifying ingredients in the ingredients list.

- 8.9.8. Any ingredients not meeting the status of the product as a whole must be clearly indicated in the ingredients list.
- 8.9.9. Labels shall not make claims about the nature of Demeter certification, biodynamic farming or the product that cannot be substantiated. For example, a statement “no pesticides have been used in the growing of this product” may not appear on a product where any plant protection material has been used in its production.
- 8.9.10. Where the Demeter co-brand symbol is used the *Demeter International Labelling Standards* shall also apply. (see www.demeter.net)

8.10. Processing

Principles:

Demeter produce is processed in a manner that preserves the living quality of the produce and eliminates all possibility of any kind of contamination or mixing with uncertified produce, and minimises any damaging effects.

Requirements:

- 8.10.1. Processing shall be according to the requirements of the *Demeter International Processing Standards* (available from www.demeter.net or Demeter New Zealand).
- 8.10.2. Processors shall be able to produce current documentary approval of their system by the relevant health authority.

9. Glossary of Terms Used

Approved: Approved in writing by Demeter New Zealand
Assessment: Review of inspection reports and applicant documents to decide what certification may be given
Association: The Bio Dynamic Farming and Gardening Association in New Zealand (Inc)
Biodynamic Association: The Bio Dynamic Farming and Gardening Association in New Zealand (Inc)
Biodynamic Consultancy Society: A society of independent biodynamic consultants who offer services to farmers, including a consultation visit that is accepted by Demeter New Zealand as sufficient to formally record the farm as having begun conversion
Biodynamic preparations: Materials described in Chapter 4. of these standards
Brought-in: Includes all items that come onto the farm whether purchased (bought-in) or not. i.e. refers to bringing-in, not buying-in
Certification status: A comparison of the certification of produce with that of other produce
Certified Organic by the Bio Dynamic Association: Certification given to animal product from a Demeter certified property where certified organic feed is substituted for Demeter to an extent greater than permitted for Demeter certification
Certified organic: Certified by any organisation currently recognised as an organic certifier by Demeter New Zealand
Certified: In these standards means land or produce that is fully Demeter certified or <i>In Conversion to Demeter</i> certified as the case may be. In some cases context will require the meaning to include other organic certifications
Chain of custody: The retention of certified produce in the hands of persons licensed to describe it as Demeter certified and affix the Demeter trademark to it
Contractor: Any person who is not a licensee or the employee of a licensee, or a volunteer, but who undertakes any work on a certified property
Contract: A contract between the Association and the <u>person licensed to use the Demeter name and trademarks</u>
Conversion: Change over of production to methods that meet these standards
Council: The council of the Bio Dynamic Farming and Gardening Association in New Zealand (Inc)
Critical non-compliance: A non-compliance resulting in immediate loss of certification and/or product recall
Cropping farm: Agricultural enterprise producing broad acre crops e.g. cereals, pulses, potatoes but not including vegetable market gardens or perennial orchards

Demeter annual report: A form filled out annually by farmers to give details of the previous year's farm activities
Demeter Assessment Group: Person or persons appointed by Demeter New Zealand to carry out assessments
Demeter Co-brand Symbol: Word Demeter stylised thus 
Demeter farm: Any property or part property on which produce to which the Demeter trademark or the word Demeter may be applied is grown
Demeter Flower Symbol: This design 
Demeter International Processing Standards: Standards for the processing of Demeter certified primary produce, available from www.demeter.net
Demeter International: International association of national Demeter organisations
Demeter New Zealand: The branch or section of the Bio Dynamic Farming and Gardening Association in New Zealand (Inc) responsible for Demeter matters
Farm Profile: A description (with appropriate maps) of physical and other characteristics of the farm that are unlikely to change very frequently.
Farm questionnaire: A short questionnaire used to gather background information on the farm and farmer to aid a consultant in preparing to visit the farm
In Conversion to Demeter: Certified that the property and product have been farmed to these standards for at least one year but do not qualify for full Demeter certification
Inspection: Process of physical examination of farm plus review of records to gather information for assessment
Inspector: Person appointed by Demeter New Zealand to carry out inspections of properties on its behalf
Licensee: Person (or corporate organisation) who has signed a contract for the use of Demeter Trademark; and, includes an applicant for use of Demeter Trademark except where the context requires otherwise
Livestock: Animals that are managed on certified land. Includes bees and other intentional pollinator insects and equines but not pets or working dogs
Major non-compliance: A non-compliance that must be corrected before a renewal certificate can be issued
Management Plan: A detailed description of the methods and materials to be used in managing the enterprise to these standards, including descriptions of the responses to reasonably foreseeable problems
Manager: Person, whether owner or not, who is in day to day control of the enterprise, and in the case of a certified enterprise, able to ensure that Demeter standards are met

Minor non-compliance: A non compliance that does not prevent renewal of a certificate but is to be corrected within a specified time
Non-compliance: Failure to meet some aspect of these standards
Orcharding: Production from all perennial or permanent woody plants including vines, berryfruit and nut-trees. Also includes production of the plants themselves, such as in nurseries
Parallel production or handling: The production or handling of one type of produce with more than one certification status
Partial certification: Situation where only part of the enterprise, land or produce is certified
Permission: Written permission from Demeter New Zealand
Plant extract: Material produced by steeping plant material in a liquid such as potable water, plant oil or alcohol
Potable water: Water fit for human consumption
Product: Plant or animal or material derived from plants or animals
Prohibited material or method: Any material or method used in certified enterprises that is not explicitly authorised by these standards
Protocol: Written description of how a particular task is to be carried out so as to meet some aspect of these standards. May be part of a Management Plan
Quarantine land: A well-fenced area of pasture that is used for the treatment of livestock with materials normally prohibited on Certified Farms, but required to be used in animal welfare emergencies
Reconversion: Change of production methods to ensure that land or a product will in future meet these standards following a period when it did not
Residual quarantine period: Refers to the time in-coming stock must be quarantined. Calculated by subtracting number of days since a drug was administered from the total quarantine period (usually the greater of 2x withholding period or 48 hours)
Sacrificial flushing: Process where the first part of a batch of certified produce is used to flush the remnants of uncertified produce out of equipment that cannot be completely cleaned otherwise. Produce used loses certification
Soil biological fertility: Process whereby soil organisms make nutrients available to plants
Soil chemical fertility: Levels of measurable available and potentially available anions and cations required for plant growth
Standards: This document
Stand-down: Period between a primary production enterprise being formally recorded as having begun conversion, and the approval of first certification
Technical bulletin: A notice or newsletter issued by Demeter New Zealand setting out interpretations to be used in reading these standards, or altering some part of them.

<p>Unavailable: Not able to be obtained in the quality (such as full Demeter, <i>In Conversion to Demeter</i>) required, after diligent and wide ranging effort has been made. Assumption that an ingredient is unavailable requires prior approval of Demeter New Zealand</p>
<p>Unethical livestock system: System of livestock management such as use of battery cages for hens and crates for sows that allow very little normal animal behaviour</p>
<p>Volunteer: Person working on an unpaid basis, but for the purposes of these standards considered to be an employee</p>
<p>Zoonoses: Diseases of animals, such as rabies or psittacosis, that can be transmitted to humans</p>

10. Index

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