The AUSTRALIAN DEMETER

bio-dynamic

STANDARD

THE AUSTRALIAN
DEMETER BIO-DYNAMIC
STANDARD

© June 2022 Edition

BIO-DYNAMIC RESEARCH INSTITUTE
Australian Company Number 004 714 872
Australian Business Number 24 004 714 872

120B Beresford Rd, Lilydale
VICTORIA 3140 AUSTRALIA
TELEPHONE: + 61 428 677 669
info@demeter.org.au
www.demeter.org.au

The Australian DEMETER Bio-Dynamic Standard
is additional to
Australian Government requirements detailed in the
National Standard for Organic and Bio-Dynamic Produce
(National Standard).

Any future alterations or additions to the National Standard must be met by operators using the **DEMETER Word or Logo**.

Certified by the
Bio-Dynamic Research Institute
120B Beresford Rd, Lilydale VIC 3140, Australia

Accredited by the Australian Government
to other countries as an Approved Organic Certification Organisation

Registration right to

in Australia

The **Bio-Dynamic Research Institute (BDRI)** based in Lilydale, Victoria holds the rights to the **DEMETER** Word and Trademark, and **DEMETER Bio-Dynamic** Word and Trademark in Australia and is therewith subject to the provisions of the Trademarks Act 1995.
The **DEMETER** Trademark was registered in Australia in 1967
and has been in use since 1953 as a symbol of quality produce.

This document outlines the requirements for a product to carry the
DEMETER Word and/or **Trademark** or reference to **DEMETER Bio-Dynamic Quality**.

TABLE OF CONTENTS

AUSTRALIAN DEMETER BIO-DYNAMIC DEFINITIONS

For the purposes of this Standard the following definitions apply:

Term	Definition
Australian Demeter Bio-Dynamic	The method of Bio-Dynamic agriculture developed in Australia by Alex Podolinsky and practising farmers.
Bio-Dynamic	An agricultural system that introduces specific additional requirements to an organic system. These are based on the application of Bio-Dynamic preparations indicated by Rudolf Steiner and subsequent developments for management derived from practical application, experience and research based on these preparations.
Bio-Dynamic Preparations	The natural activators developed according to Rudolph Steiner's original indications known as 500, 501, and 502 – 507.
500	A natural soil activator made from cow manure as indicated by Rudolph Steiner.
501	A natural light enhancer made from quartz as indicated by Rudolph Steiner.
502 – 507	Biological digesters made from different plant parts as indicated by Rudolph Steiner and referred to as the compost preparations.
Prepared 500	A combination of 500 and 502 – 507 as developed in Australia by Alex Podolinsky.
BDAAA	Bio-Dynamic Agricultural Association of Australia founded in 1953 as the advisory/training organisation to aid farmers in developing the skills and techniques to change from conventional to Bio-Dynamic farming.
Certification	Means the acceptance of an operator's conformity to this Standard as verified through inspection and audit.
Colloid	A colloid is a heterogeneous mixture whose particle size is intermediate between those of a solution and a suspension. The dispersed particles are spread evenly throughout the dispersion medium, which can be a solid, liquid, or gas.
Bio-Dynamic Compost	As for compost but with the addition of the Bio-Dynamic compost preparations 502 – 507.
Compost	The result of the conversion of organic materials (e.g., vegetation, manure and waste products permitted under this Standard) into humus colloids.
Contamination	Contact of certified land, produce or products with any substance that would compromise the Australian Demeter Bio-Dynamic integrity.
Crop Rotation	The practice of alternating the species or families of annual and/or biennial crops grown on a specific field.
Decertification	The partial or total withdrawal of certification.
Dynamic pasture management	A method of pasture management that keeps pasture actively growing with the use of rotational grazing of stock and/or slashing/cutting of pasture.

Term	Definition
Dynamic plant growth	Natural plant growth via plant nutrients being taken from humus as dictated by sun warmth and light.
Farm Management Plan (FMP)	A written document designed to help certified operators achieve best practice farm management through documenting current and future **Australian DEMETER Bio-Dynamic** management practices. The plan is a flexible tool for good farm management and provides an important means of assessing compliance with this Standard.
Fertiliser	Natural or man-made substances used for the purpose of supplying water soluble elements to the plant through the soil water.
Green Manure	A mixed species crop that is grown and incorporated into the soil for the purpose of soil improvement.
Humus	A colloidal substance built by soil biology from organic matter residue, that forms the primary structure for soil life.
Input	Any product or material applied or used during production.
Mineral	Naturally occurring and inorganic element or compound that is biologically or rock derived.
Organic Matter	The large source of carbon-based compounds, that are or were parts of living things, found within natural, terrestrial, and aquatic environments.
Soil Organic Matter	The organic component of soil, consisting of three primary parts including fresh plant residues and small living soil organisms, decomposing organic matter, and stable organic matter (humus).
Produce	Unprocessed plant or animal material grown on farm.
Product	Processed plant or animal material derived from Produce.
Quarantine area	A dedicated area of the farm that is used for the purposes of quarantine and/or withholding practices.
Quarantine	The isolation of livestock from the certified area of the farm for a given period.
Sheet composting	A method of composting and/or incorporation of inputs into the soil via the use of green manuring or dynamic pasture management in conjunction with Prepared 500.
Soil	The unconsolidated mineral and/or organic material on the immediate surface of the Earth, built by natural processes in situ over time, that serves as a natural medium for the growth of land plants.
Soil Structure	A highly organised soil condition created through biological processes and plant root growth in the rhizosphere, that coagulate fine soil particles together to form aggregates. These aggregates continue to organise into larger arrangements resulting in an aerobic, biologically active structure conducive to plant growth.
Transubstantiation	The process of a totally new substance arising from the original substance.

1 INTRODUCTION: THE SCIENCE BEHIND THE SYMBOL

The Australian DEMETER Bio-Dynamic symbol is your assurance of quality.

To fully appreciate what this represents, it is necessary to briefly describe the Bio-Dynamic method as it has evolved under Australian conditions and through practical application of the research conducted by the ***Bio-Dynamic Research Institute*** **(BDRI)**.

The Australian DEMETER Bio-Dynamic method uses ***biological-dynamic*** practices to activate the life of soil and plants. The Bio-Dynamic preparations used were originally described by Dr. Rudolf Steiner during the "Agriculture Course" given to landowners and scientists between the 7th and 16th of June 1924 in Silesia Germany. These are dynamically activating preparations and sprays, which when correctly made and applied, along with general farm management designed to allow their advantageous working, dramatically effect results in soil development, and plant dynamics. (Reference: *Bio-Dynamics Agriculture of the Future*)

Under correct Australian DEMETER Bio-Dynamic Management, it is not necessary to rely on large applications of compost or organic matter, which in practical terms, could not be applied on commercial multi-thousand hectare farms.

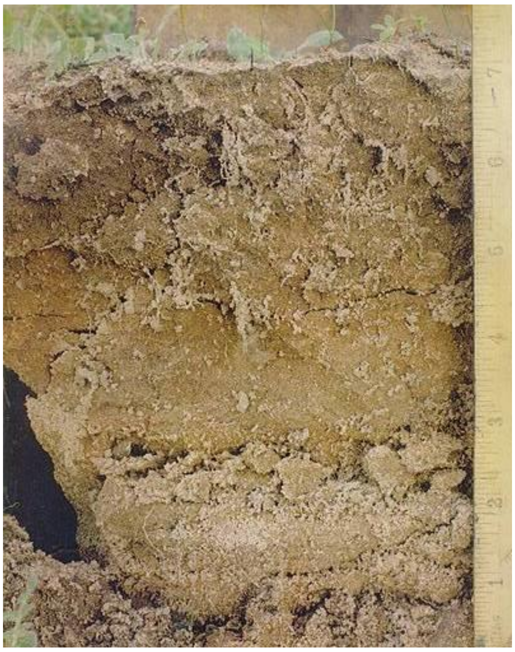


Photo 1: Compacted Soil

Photo 2: Structured Soil

Evidence of the results of the Australian DEMETER Bio-Dynamic Method are shown in the photographs above. Photograph 1 – compacted soil, typical of agricultural today, and Photograph 2 **– the same soil, within less than a year**, and **without the addition** of any **inputs** other than one mechanical aeration, sowing down to pasture species and two applications of the basic soil activator spray **prepared 500**.

In a living soil, worms and microbes make new humus out of old organic matter, clay particles, and with the contribution of their own bodies. Sustainability of Humus is guaranteed by the soil structure as depicted in photograph 2. Loss of soil structure results in loss of Humus.

To receive Australian DEMETER Bio-Dynamic certification a farm must demonstrate such soil structure development.

This is fundamental for the following reason: By design of Nature, the water intake of plants and the intake of nutrients should be two different activities. The old dark roots are the water intake roots; the fine white hair roots are the feeder roots. Unlike humans or mammals, a plant has no independent warmth metabolism, so its activity is entirely governed by Sun Light and Warmth. Sun Warmth activates the plant, and the plant responds by sending white hair roots into the humus to feed. As soon as the Sun withdraws and it is cooler, the roots slow down or cease feeding. A continuously changing interplay occurs - no science can ever predict what the needs of a plant are at any one moment. In naturally fed plants the feeding is determined by the Sun. In such a situation the plant never indulges, never eats too much and all it draws in is assimilated and converted into high quality nutrients. This process is possible in the biological soil condition shown in Photograph 2, where, for example, the plant can assimilate the element nitrogen into a nutritious protein. (Reference: *Bio-Dynamics Agriculture of the Future.)*

On dead soils, like shown in Photograph 1, none of that natural feeding can take place. There is insufficient biological activity; there is no soil structure and no humus; worms and microbes are lacking. If plants are to grow on such a dead soil, water soluble fertilisers must be applied for the basic nutrient requirements of the plant. Under these conditions, when the plant takes in its water requirements - irrespective of whether the Sun decrees to feed or not - the plant is forced to take in the water-soluble elements. As consequence, far too much in elements (mineral salts) is taken into the plants, because this process is not Sun governed. Also, there must be balance of mineral salts and water in each cell, otherwise the plant would collapse. To compensate for such an excess of mineral salts the plant holds extra water in its cells. If there is too much mineral salt taken up, it remains unassimilated. Under this system, the element nitrogen is not assimilated into protein, but remains as nitrate salt. This is the reason for the giant cabbages and lettuces (lettuces as 'crisp' in leaf as a cabbage should be) coming from artificially fertilised market gardens. There is international documentation of nitrate poisoning, sterility problems with cattle, blue babies (methemoglobinemia) etc. on account of all this.

The same situation can arise when organic or biological farming is understood as simply applying animal manures and other organic substances in place of artificial fertilisers. Organic fertilisers or manures, e.g., the nitrogen in chicken manure, is just as water-soluble as nitrogen out of a fertiliser bag. The only addition is a small amount of organic matter. When such fertiliser is applied, after the first rain plants quickly become dark green. The growth result is huge, blue/black-green leaves and thick stems. This is indicative of nitrogen excess. Cow manure causes similar symptoms although a little less pronounced. It is noticeable when a cattle farmer does not harrow the cow pads - there is much growth around the cow pads, the leaves are dark green, and the cows avoid eating these plants. The magnificent clover around the pads may be the only feed left in the paddock, but the cows choose not to eat it. They don't eat it because it grows around their own manure - that is a fallacy - but because this dark green growth is bitter from excessive (unassimilated) mineral salts containing little in desirable food value and resulting in the typical nitrate problems.

Organic fertilisers work, basically, along the same lines as water soluble artificial fertilisers. Raw manure must be composted to the degree that the compost heap is as colloidal as worm casts (Reference: *Compost Making* Video by Mark Peterson). Only at this stage is the compost safe to apply. Under such conditions there is nothing left which is water soluble without being encased in the colloid nature of Humus. Only then will plants not be force-fed.

Organic manuring is manuring within the organisation of Nature.
Humus is the basis thereof.

To create humus and soil structure from the typical Soil 1 Photograph (almost all agricultural soils worldwide are in this state), is much easier in countries where there is a conducive biogeography (e.g., central, and western Europe). In these countries, on wider acreage farming, green manuring could be undertaken. After ploughing in green manure there is moisture and shade from newly growing weeds or crops i.e. there are the essential conditions to incorporate the green manure in the soil. Climatically drier areas with less regular rainfall (e.g., Australia, parts of USA, Africa, and the Middle East) seldom have the conditions necessary to incorporate the green manure effectively into the soil. In these areas, without irrigation (and this applies to most of the wide acreage farms), the sun gradually burns the green manure up (termed "straw-fire"), with no increase in organic matter or humus in the soil.

Bio-Dynamic research and practice in Australia has produced a totally new concept of green manuring termed 'sheet composting': Namely, via Bio-Dynamic root activity stimulated by the soil sprays, deep underground soil structuring and humus creation through root activity takes place[1]. Once the roots in a soil like Photograph 2 go deeper, there is the exchange activity of the new plant growth, new root growth, old roots and plant waste turned into humus.

For certification, a production method as basic Standard is required. "No artificial fertiliser and No synthetic chemicals" do not represent a Standard. Soil must be developed for **Australian DEMETER Bio-Dynamic** certification, and that requires considerable skill. During this process farmers become committed; they develop special farming skills, awareness and respect for Nature, and observation of soil, plants, and animals[2].

DEMETER® bio-dynamic

With Australian DEMETER Bio-Dynamic quality certification, more is required than just putting on organic fertilisers and calling this 'organic'.

DEMETER Bio-Dynamic certification requires a basic soil structure development.

Every aspect of general farm management and soil cultivation must be reconsidered in the light of such insight.

DEMETER quality Bio-Dynamic farm practice produces healthy, living, structured soil. Healthy plants and animals are a result.

[1] Conducted by the BDRI: Organic Matter levels in the top soil profile (10cm) were increased from 0.9% to 11.4% in six years. At depth of 1.1m the organic matter was increased from negligible to 2.4% over the same period. (Further detailed in *Bio-Dynamic Agriculture Introductory Lecture, Volume 1, Lecture 2*. Much more information is provided in the introduction to the DVD *Cosmo-Earthly Ecology and Green Manuring*, 2006.)
[2] The Bio-Dynamic Method behind the DEMETER symbol is more fully explained in the publication *Bio-Dynamics: Agriculture of the Future*, 2000.

2 DEMETER QUALITY ASSURANCE

2.1 Introduction

Australian farmers compete on world markets without receiving subsidies. Australian conditions, therefore, require an economic inspection system. Any inspection system must give a quality guarantee to the consumer, without burdening the consumer or producer with excessive extra costs.

Even the most comprehensive array of 'Standards' could not possibly cover all eventualities; therefore, our regulations are principle in nature. The **commitment** of the operator (farmer, processor, wholesaler, retailer, importer, or exporter) to **Australian DEMETER Bio-Dynamic** Quality is of paramount importance. The quality assurance of Demeter produce, and products is based on adhering to the **Demeter Standard**.

Inspections of Operators and their operations to the Demeter Standard are done by suitable qualified persons. BDRI chooses inspectors on their merit, experience, and knowledge of the Australian Demeter Bio-Dynamic Method.

To qualify for **DEMETER Bio-Dynamic** certification, preparations need to be sourced from a BDAAA / BDGA approved supplier. It is available to any farm and its owner/operator meeting the requirements of this Standard.

This Standard also details the requirements for **DEMETER Bio-Dynamic** certification of processed products and their processor; wholesalers; retailers; and importers. Operators wishing to export **DEMETER** Products must also be certified with the BDRI to obtain Organic Goods Certificates (OGC), which are part of the Australian Government legislation for export of Organic and Bio- Dynamic Produce.

As is the case with farmer registration, it is expected that the processor, wholesaler, retailer, importer, or exporter can show their dedication and commitment to **Australian DEMETER Bio-Dynamic** quality.

2.2 Application for Certification as a Demeter Trademark User

The application process outlined in the latest version of BDRI's Quality Manual will be followed. Payments for the application, initial inspection, soil samples and ongoing annual certification are set out in the BDRI fee schedule. The application process is briefly outlined below.

(a) When an operator believes that they meet the requirements outlined in the **National Standard for Organic and Bio-Dynamic Produce** (the National Standard) AND the requirements detailed in **The Australian DEMETER Bio-Dynamic Standard** (this Standard), they may apply to the BDRI for certification as a **DEMETER** Trademark user.

(b) To apply for certification as a **DEMETER** Trademark user, an operator must complete and return to the BDRI the information requested in the application form provided by the BDRI and available on their website www.demeter.org.au.

(c) Upon receipt of an application for **DEMETER** Registration, an appointed officer of the BDRI will ensure all requested information has been completed and received.

(d) If the necessary information has been supplied, and the submission appears to meet at least the minimum criteria required by the **National Standard for Organic and Bio-Dynamic Produce** and th**e Australian DEMETER Bio-Dynamic Standard**, an officer representing the BDRI will arrange for a BDRI inspector to inspect the applicant on the premises of the applicant.

  (i) Note: An applicant or certified operator has no right to choose their own inspector. In applying for, or renewing, DEMETER certification the applicant/operator will agree to co-operate with the inspector appointed by the BDRI.

(e) The designated inspector will complete the appropriate Inspection Report/s, and present the report, along with their findings to the BDRI for review.

(f) The BDRI will then determine whether the application for **DEMETER** certification meets all the requirements set out in this Standard and the National Standard.

(g) If an applicant is successful (i.e., complies with both the **National Standard and the Demeter Standard**), they will be required to sign an Agreement with the BDRI. Upon the BDRI's receipt of the signed agreement (one copy retained by the BDRI and one copy returned to the applicant) a Certificate indicating that the applicant is certified and registered as an authorised user of the **DEMETER** Trademark will then be issued. Where an applicant does not meet the requirements for **DEMETER** registration, a letter will be issued outlining where the deficiencies have occurred.

2.3 Certification System

The certification system of the BDRI involves:

(a) Inspection of the operator production/processing unit and/or premises to assess compliance with the National Standard and the Demeter Standard at least annually, and may also include:

  (i) Random and unannounced inspections.

  (ii) Random testing of soil, water and/or product for substances not compatible with the Standard

(b) The Certification Body (BDRI) is audited by the Department of Agriculture and Water Resources (DAWR) for compliance and audited by the IOAS for compliance to 17065. These provide the Government-to-Government assurances that the BDRI is implementing its duties. DAWR assesses that the BDRI certification system complies with:

  (i) The National Standard for Organic and Bio-Dynamic Produce

  (ii) The Export Control (Organic Produce Certification) Orders

  (iii) The Administrative Arrangements, and Importing Country Regulations

2.4 Maintaining Demeter Certification

(a) So long as the authorised user continues to meet the requirements of the National Standard and Demeter Standard, they will be eligible for a renewal of the certificate each year.

(b) As part of the certificate renewal process, each Authorised User of the **DEMETER** Trademark will be issued with the relevant certification renewal documents from BDRI. The authorised user must provide the information requested on these forms, and return the signed forms, along with the current certification fee, to the BDRI.

(c) Provided points (a) and (b) have been fulfilled the BDRI will issue a certificate certifying the Operator as Demeter Biodynamic and Bio-Dynamic to the **National Standard**. This certificate is valid for one year from date of first issue.

3 REQUIREMENTS FOR DEMETER CERTIFICATION

3.1 Farm and Farm Produce Certification

3.1.1 Farm Production Requirements

The following requirements are additional to the **Production Requirements** outlined in **Section 3** of the ***National Standard for Organic and Bio-Dynamic Produce***.

The **Australian DEMETER Bio-Dynamic** Standard is intrinsically interwoven with the **Bio-Dynamic Method**. It is not intended to explain the Bio-Dynamic method comprehensively within the format of this **DEMETER** Standard, which is designed for inspection and certification purposes. The teaching of Bio-Dynamic practices, generally, is the responsibility of the Bio-Dynamic Agricultural Association of Australia (BDAAA) and Bio-Dynamic Growers Australia (BDGA). In this Standard reference is made to supporting literature and specific technical requirements.

(a) **DEMETER** certification is not available for a farm per se but is jointly for farm and owner/operator. It is expected that with the Bio-Dynamic farm conversion, an equivalent development takes place with the owner/operator: observation, conscience and consciousness for Nature, soils, plants, animals, farming skills, consumer awareness. Registration is for the farm and the specific owner/operator only and is not transferable without approval by the BDRI.

(b) Product certification is available in two grades:

(i) **DEMETER Bio-Dynamic Certification**

(A) This level of certification requires at least three years of Bio-Dynamic Management. This is reflected by considerable Bio-Dynamic development of soil structure, humus levels and associated soil colour change, when assessed with consideration of optimum development potential and limitations imposed by soil and climatic conditions in the geographic region. Plant expression must show upright activity and "glow" colour. (Reference: *Bio-Dynamics Agriculture of the Future* and *Living Agriculture*.)

(ii) **DEMETER Bio-Dynamic In-Conversion**

(A) Of importance is the primary and principal commitment of the operator to Nature and Bio-Dynamic farming; farming methods applied prior to Bio-Dynamic involvement; history of and last use of chemicals and fertilisers; state of soil and early indications of soil and plant conversion to Bio-Dynamic.

(B) Provided the soil is showing soil structure and colour changes in response to Bio-Dynamic management (Reference: *Soil Conversion* Video), a farm and operator can receive "**DEMETER Bio-Dynamic In-Conversion**" certification after one year of applying Bio-Dynamic management to their farming system.

(C) The "in-conversion" process is part of a development cycle. Therefore, a farm and operator cannot remain at the "in-conversion" stage indefinitely. Farm management/development must result in the development of soil structure as required for **DEMETER** Certification.

Requirements necessary for Farm Produce to receive DEMETER Certification

Section 3.1.2: General Bio-Dynamic Management Practice
The Bio-Dynamic Preparations must be correctly made, stored, and applied.

Section 3.1.3: Soil Management Practices
Conducive to advantageous working of the Bio-Dynamic Preparations and the development of Soil Structure.

Section 3.1.4: Crop and Pasture Production
Permanent pasture provides the foundation for soil structure and humus development. Broad acre cropping must be rotated with pasture phases. Horticultural crops must make use of green manure and sheet composting and/or biodynamic compost.

Section 3.1.5: Livestock Production
Sufficient paddocks must be provided to allow dynamic rotational grazing management. Feed must be from DEMETER certified sources.

Section 3.1.6: Soil Inputs permitted under Bio-Dynamic Management
Inputs only as authorised by the BDRI. Any such use must be documented in a diary or farm Record Book.

Section 3.1.7: Sanitation of Equipment and Post-Harvest Storage
Only Permitted Substances for Sanitation. Any such use must be documented in a diary or farm Record Book.

Section 3.1.8: Contract Off-farm Storage/Packaging or Processing
Contract Off-Farm Processing Information on the processing activity must be provided to the BDRI.

Section 3.1.9: Product Contamination and/or Testing
Water, Soil and/or Produce Testing. At the discretion of the BDRI or an appointed BDRI. Inspector samples may be taken for analysis at a NATA accredited Laboratory. Cost of sampling to be carried by the applicant or authorised user.

Section 3.1.10: Use of the DEMETER Trademark on Product Labelling and Product Identification
Product Labelling must be approved by the BDRI. Identification of the Certified product must be maintained throughout its production, storage, handling, and transport.

DEMETER® bio-dynamic

Quality Produce

3.1.2 General Bio-Dynamic Management Practice

The registered owner/operator agrees to carry out all Bio-Dynamic work on the farm. Where an employee is appointed for this work, the registered owner must notify the BDRI. Where an employee is appointed, registration is dependent on the commitment and understanding of the Australian Demeter Bio-Dynamic Method by the employee being demonstrated to the BDRI's satisfaction. The employee must be present for certification inspections.

(a) Every farm shall apply Prepared 500 at least once a year to all areas of the farm. Where physical conditions, such as steep slopes or rocky or heavily timbered ground does not allow the spraying of preparations, such areas must be indicated on the copy of the farm map supplied to the BDRI. In drought or other unsuitable weather conditions the operator must record any areas which could not be sprayed with the preparations.

(b) Application of 500 must:

   (i) coincide with the sowing of a crop, or

   (ii) the incorporation of a green manure crop,

   (iii) be applied on well grazed or cut pasture to ensure 500 reaches the soil, and

   (iv) occur when the soil has enough moisture and warmth for plant growth.

(c) 501 shall be applied as often as climatic conditions and/or plant expression indicates (Reference: *Bio-Dynamic Agriculture Introductory Lectures Volume 1, Lecture 5*).

(d) The Bio-Dynamic preparations must be produced in areas of extreme winter coldness to enable the process of transubstantiation to occur. (Reference: *Bio-Dynamics Agriculture of the Future*). Where operators make their own preparations, an initial inspection of the preparations by an experienced BDAAA preparation maker – at the time of lifting – will be required, with the cost of this inspection to be carried by the applicant.

(e) Stored 500 and the compost preparations must be insulated from the environment using at least 8cm of dry peat moss as cavity filling (refer to diagrams in APPENDIX A). The storage box and container must be of natural material, and free from any contaminating substance e.g. glues. The box must be situated in a cool place and not near exhaust fumes or electricity.

(f) During storage, 500 and the compost preparations must be maintained in the same moist colloid condition as when first received from the preparation supplier. (Reference: *Bio-Dynamics Agriculture of the Future*.)

(g) 501 must be stored in a glass jar, with a loose-fitting lid, which has access to morning sunlight.

(h) For 500 and 501 application the following must be met:

   (i) 500 and 501 stirred in stirring machines no larger than 60 gallons (270 litres), designed, and tuned to perform as outlined in the video *Stirring Machine*. The vessel of the stirring machine must be copper, stainless steel or enamel.

(ii) Stirring may also be done by hand. (Also, reference: [Living Knowledge] and *Bio-Dynamic Agriculture Introductory Lectures Volume 1, Lecture 4*.)

(A) 500 is applied at a rate of 88 grams per hectare with a minimum of 32.7 litres of water per hectare. (35 grams per acre in a minimum of 14 litres of water per acre.)

(B) 501 is applied at a rate of 2.4 grams per hectare with a minimum of 32.7 litres of water per hectare. (1 gram of 501 in a minimum of 14 litres per acre.)

(C) quality of water for stirring must be from the purest source on the farm and may require testing.

(D) heating arrangements for the water is to be from a natural source of heat (e.g. wood or gas), not electricity. Water must be evenly heated to between 28–33°C.

(E) stirring is for exactly one hour, to be undertaken outside, not near power lines and at hours recommended by the BDAAA (Reference: *BD – A Practical Introduction*, *Bio-Dynamics Agriculture of the Future* and *Bio-Dynamic Agriculture Introductory Lectures Volume 3, Lecture 3*).

(F) spraying to be undertaken with equipment as low in weight as possible to avoid compacting soil.

(G) spray outfit with positive displacement pump, e.g., Diaphragm or roller pump (no centrifugal pumps):

(I) 500 sprayed at a maximum pressure of 56-70 KPa (8-10 P.S.I) to produce droplets.

(II) 501 sprayed to produce a fine mist.

No part of spray outfit must ever have been contaminated with chemicals. The tank material must be copper or stainless steel. Plastic or fibreglass tanks are unacceptable.

(H) the application of 500 and 501 occurs within one hour following the completion of stirring. If this is not possible due to extenuating circumstances, then it must be applied within two hours following the completion of stirring.

(i) All aspects of general farm management should be carried out to create conditions conducive to the advantageous working of the Bio-Dynamic preparations. This includes, but is not limited to:

(i) soil brought to and maintained in an aerobic state.

(ii) soil cultivation undertaken in support of soil life (Reference: Soil Cultivation , Cosmo-Earthly Ecology and Green Manure and Horse Paddock to Living Soil video.)

(iii) rotational grazing of livestock combined with dynamic pasture management.

(iv) sufficient subdivision to allow (iii) above to occur.

(v) slashing methods to ensure dynamic plant growth.

(vi) regular harrowing of manure after cattle rotations, where conditions permit.

(j) Insertion of compost preparations into compost heaps to be as demonstrated in *Compost Making* Video and *BD A Practical Introduction*.

3.1.3 Soil Management Practices

(a) All aspects of farm management must be designed to allow the advantageous working of the Bio-Dynamic preparations, thereby allowing the development of soil structure (Reference: *Soil Conversion* Video). This includes, but is not limited to:

(i) Soil Cultivation which supports soil structure development and soil life. (Reference: *Soil Cultivation* Video.)

(ii) Use of Green manure Crops and incorporation techniques to promote deep *in situ* development of humus. (Reference: *Horse Paddock to Living Soil* and *Cosmo-Earthly Ecology and Green Manure* video.)

(iii) Dynamic Pasture Management via slashing and/or rotational grazing.

(b) Application of manure to the soil can be via:

(i) High quality colloidal Bio-Dynamic compost made from on- farm materials, to BDAAA guidelines. If off-farm materials are introduced for composting they must be Demeter Certified, or 3.1.3(b)(iii) applies. (Reference: *BD A Practical Introduction*, *Living Agriculture* Video and *Compost Making* Video), and/or

(ii) Sheet Composting, using green manure, or Dynamic Pasture Management. Manure must be from on-farm or another Demeter Certified source, or 3.1.3(b)(iv) applies. (Reference: *BD A Practical Introduction*, *Bio-Dynamics Agriculture of the Future* and *Living Agriculture*.)

(iii) All off-farm composting materials that are not Demeter certified require written permission from BDRI and will require current test results to be supplied for chemical residue and heavy metals.

(iv) ANY off-farm manures require permission from BDRI and will require current test results to be supplied for chemical residue and heavy metals.

(v) All off-farm composts require permission from BDRI and will require current test results to be supplied for chemical residue and heavy metals.

(vi) All off-farm composts or manures must go through a Bio-Dynamic composting system as per the **National Standard for Organic and Bio-Dynamic Produce, Section 1.25.2**.

(c) Use of mulching material is restricted, and must comply with the following conditions:

(i) Any mulch used must be from natural materials that have not been treated with substances prohibited under this Standard.

(ii) Any mulch material remaining at the time of application of the bio-dynamic soil preparations must be removed before the application takes place.

3.1.4 Crop and Pasture Production

(a) Fundamental to plant health is a well-structured soil. Under such soil conditions and in conjunction with the soil spray 500, plants develop white feeder roots which interact with the soil and feed from the humus component as indicated in Section 1 of this Standard. This finely balanced plant, root, soil and Sun Light and Warmth interaction is described more fully in *Bio-Dynamics Agriculture of the Future* and *Cosmo-Earthly Ecology and Green Manure* Video.

(b) Permanent Pasture is an important management tool in developing soil structure:

(i) It must form the basis of grazing systems.

(ii) Broadacre cropping must be rotated with pasture phases.

(iii) Wherever climatically possible, it is incorporated in orchard/vineyard culture.

(c) Plants grown under the conditions outlined in (a) above should be sufficiently healthy and vigorous to resist pest and disease attack. Where such soil conditions have been achieved but climatic conditions impede the vigour of plant growth, use of:

(i) 501 to increase light intake,

(ii) 507 to increase warmth,

(iii) Casuarina to deter fungal activity, may be used, as recommended in *BD - A Practical Introduction*.

(d) The Bio-Dynamic Method is a builder of health rather than a healer of sickness. Therefore, as part of the tree/vine strengthening process it is strongly recommended that deciduous fruit trees and vines receive the Tree Spray each Winter. See recipe and instructions for use in *BD - A Practical Introduction*.

(e) Plant Pest and Disease Control

(i) Specific Bio-Dynamic practices and/or aids for pest and disease control (as listed in *BD - A Practical Introduction*) may suffice and should be considered as a first option.

(ii) Otherwise, inputs for pest and disease control permissible under the **National Standard for Organic and Bio-Dynamic Produce**, as listed in Appendix C of the National Standard, may only be used as per 1.8.5 of the **National Standard for Organic and Bio-Dynamic Produce**. Use of any inputs listed in Appendix C of the National Standard require written permission from BDRI and the use of these inputs must be recorded.

3.1.5 Livestock Production

(a) Livestock must be managed and rotated in a manner which allows the dynamic activity of plant growth to maintain and enhance soil structure (Reference: *Bio-Dynamics Agriculture of the Future*).

(b) Feed/Fodder can be introduced only from the same or higher-level certified **DEMETER** properties. The only exception to this is during drought or other extenuating circumstances (e.g. fire or floods) when:

   (i) **DEMETER-in conversion** feed/fodder may be fed to **DEMETER** Livestock.

   (ii) If certified **Organic** feed/fodder is fed to livestock, then Organic certification is available. To regain Demeter certification a minimum of six months on Demeter feed following the cessation of Organic feed/fodder is required.

   (iii) Derogation for conventional feed in exceptional circumstances is covered in 1.16.9 of the **National Standard for Organic and Bio-Dynamic Produce**.

   NOTE: The BDRI strongly recommends that Bio-Dynamic Management of Livestock included the storage of at least 18 to 24 months of feed/fodder as an aid to buffer the unpredictability of the Australian climate, thereby reducing the need to implement the extenuating circumstances described above

(c) Organic certification by BDRI is available to Demeter farmers for stock that can't be feasibly provided with Demeter Certified feed and are provided with certified organic feed.

(d) The feeding of meat meal to livestock is not permitted.

(e) The influence of dawn and dusk on the pineal gland of livestock is especially important to their immunological and psychological functioning. Therefore, the use of artificial lighting to increase production is not permitted.

(f) Livestock introduced from non-**DEMETER** farms shall be placed in a quarantine area for a period of three weeks. Management of this area is detailed in the **National Standard for Organic and Bio-Dynamic Produce**.

   (i) Only the carcasses of eventual offspring can be marketed under the **DEMETER** Trademark.

   (ii) In the case of non-carcass products, the minimum management period required before being certified **DEMETER Bio-Dynamic** is outlined in the **National Standard for Organic and Bio-Dynamic Produce** under the Section “Conversion of Livestock and Livestock Products”.

   (iii) At the discretion of the BDRI, produce may be subject to testing prior to receiving certification. Cost of such testing is to be carried by the operator. In case of doubt, it is advisable to have stock intended for purchase tested for pesticide residues.

(g) Treatment of pest and disease in livestock must be as per the **National Standard for Organic and Bio-Dynamic Produce**, 1.17 and 1.18. The use of any treatments must be recorded.

(i) Use of any inputs listed in Appendix D of the National Standard require written permission from BDRI prior to use.

(ii) Use of Vaccines require written permission from BDRI prior to use.

(iii) Allopathic treatments also require prior written permission, however, where emergency use is needed then BDRI are to be notified as soon as practicable.

3.1.6 Soil Inputs permitted under Bio-Dynamic Management

(a) Biodynamic farms should consciously use the minimum inputs possible. Upon a demonstrated deficiency, application of major or minor elements should be made via the soil at an appropriate time in the farm operation/rotation, ideally using non-water-soluble inputs, so as not to artificially push crops. (e.g.: inputs applied via a green manure crop). In all situations where inputs are used the quality of the input should be considered.

(b) Inputs that are permissible under this standard are listed in APPENDIX B of this Standard. Use of these inputs does not require written approval from BDRI but must be listed in the operators **Farm Management Plan**, and documented in a diary or farm record book, and their use reported in the annual **General Information Form** returned to the BDRI before Certification renewal each year.

(c) A written request for use of any inputs not listed in APPENDIX B of this Standard must be made to the BDRI before any other substances approved by the **National Standard for Organic and Bio-Dynamic Produce** are introduced onto **DEMETER** registered farms. Specific Bio-Dynamic practices and/or aids may suffice.

(d) Any approval for use will be given in writing by the BDRI and may contain conditions or restrictions to the requested input use. The use of inputs must be documented in a diary or farm record book, and their use reported in the annual **General Information Form** returned to the BDRI before Certification renewal each year.

3.1.7 Sanitation of Equipment and Post-Harvest Storage

(a) The use of good management practice is essential in ensuring clean equipment and a clean working environment. Use of brooms, air, water, and steam are all acceptable methods for cleaning sheds and equipment where certified product is handled and/or stored. **Appendix E Annex A** of the **National Standard for Organic and Bio-Dynamic Produce** details permitted Sanitation Products. Areas and equipment where Sanitation Products are used shall be cleaned of any such products using potable water to avoid any contamination.

(b) Acceptable Post-Harvest/Storage Treatments are listed in **Appendix F Annex B** of the **National Standard for Organic and Bio-Dynamic Produce**.

3.1.8 Contract Off-farm Storage/Packaging or Processing

(a) Where a certified product must be stored and/or packaged, or undergoes processing off-farm prior to being sold under the **DEMETER** label, and such activity is contracted by the farmer and not instigated by the handler/processor, the farmer remains responsible for the integrity of the **DEMETER** product.

(b) The BDRI recognises the Organic Certification of a processing facility, provided the certification is issued by a DAWE approved organic Certification Body.

3.1.9 Product Contamination and/or Testing

(a) Areas, management practices or neighbouring activities which offer the potential for contamination of **DEMETER** products with substances not complying with this Standard must be reported to the BDRI, along with the precautions taken to minimise this possibility occurring.

(b) Any activity or event which results in the contamination of **DEMETER** products must be immediately notified to the BDRI.

(c) Initial inspection of new applications for Certification will include soil sampling for chemical residues and heavy metals. Where a soil test result indicates the presence of chemical residues or unacceptable levels of heavy metals, products will need to be tested to determine if the chemical or heavy metal is being transmitted to the farm produce.

(d) Whenever the BDRI or an Inspector appointed by the BDRI deems such necessary, testing of product for substances not compatible with this Standard will be arranged at a NATA (National Association of Testing Authorities) approved laboratory. Costs of the analysis must be carried by the operator or applicant.

3.1.10 Use of the DEMETER Trademark on Product Labelling and Product Identification

The following requirements are additional to the Labelling and Advertising requirements outlined in Section 5 of the **National Standard for Organic and Bio-Dynamic Produce**.

(a) An authorised user of the **DEMETER** Trademark must receive authorisation from the BDRI in connection with any container or label that references the **DEMETER** word or Logo.

(b) Any product certified by the BDRI must:

- (i) reference the name and address of the BDRI, and/or
- (ii) carry the **DEMETER** logo, and
- (iii) reference that the **DEMETER** word and/or logo is a registered Trademark, and
- (iv) reference the name and address of the producer.

(c) **DEMETER** produce certified by the BDRI must also refer to the term "Bio-Dynamic" as part of the product description.

This may take the form of the following (and/or):

(d) Identification of the certified product or produce must be maintained throughout its production, storage, handling, transport, processing, and packaging. This is achieved for:

- (i) Packaged Product by:
  - (A) Processing and packaging certified product in clearly identifiable areas; **and**
  - (B) complying with the labelling requirements of the National Standard; **and**
  - (C) issuing invoices or similar (see (e) below) clearly identifying the certified Demeter BD product; **and**
  - (D) Documenting and maintaining a traceback system.
- (ii) Bulk Produce by:
  - (A) maintaining clearly identifiable compartments or areas which prevent the co-mingling of certified and non-certified produce during storage, handling and transport; **and**
  - (B) issuing produce transfer certificates or similar (see (e) below) clearly identifying the certified Demeter BD product; **and**
  - (C) Documenting and maintaining a traceback system.

(e) Produce transfer certificates, invoices or similar system need to be issued between certified operators. These shall contain sufficient information to prevent fraudulent transfer of certified produce between certified operators and include:

- (i) the name, address, and certification number of the certified provider; **and**
- (ii) the name, address, and the certification number of the certified receiver; **and**
- (iii) the transaction date and signature of the certified provider; **and**
- (iv) an accurate and complete description of the certified produce; **and**
- (v) the quantity of certified produce; **and**
- (vi) current certification status of the produce; **and**
- (vii) produce lot numbers or other identification marks; **or**

(viii) reference to any other relevant documentation such as an invoice, packing list or bill of lading.

(f) Copies of signed produce transfer certificates and similar documentation shall be retained by the certified operator for five years.

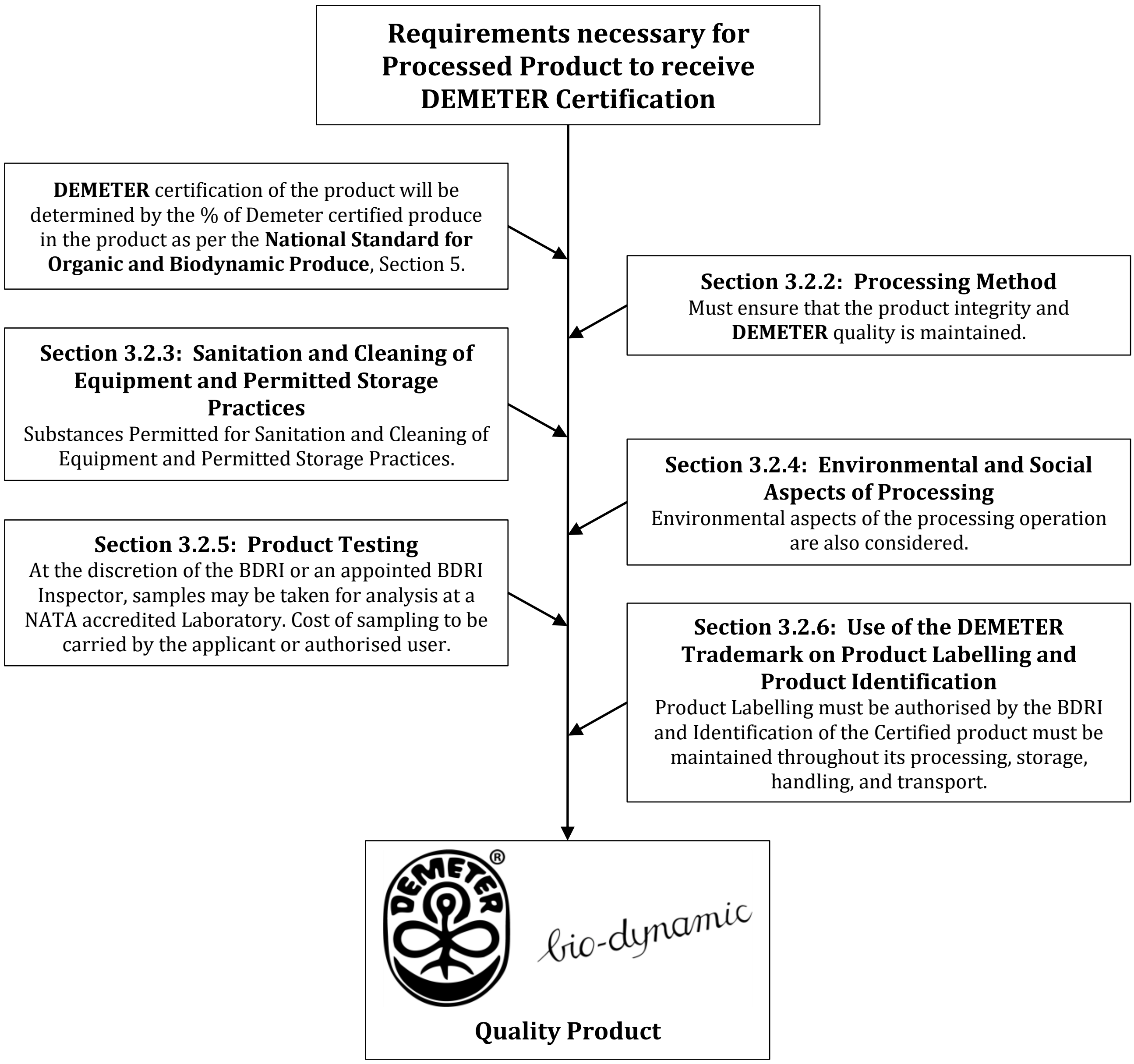
3.2 Processing and Processed Product Certification

3.2.1 Preparation of Products to Maintain Demeter Certification

The following requirements are additional to the **Transport and Storage**, **Preparation**, **Packaging** requirements outlined in **Section 2** of the **National Standard for Organic and Bio-Dynamic Produce**.

(a) Because of the range of activities that occur under the term 'Processing of **DEMETER** Produce', the BDRI does not endeavour to provide a list of rules about accepted processing procedures. Each type of processed product requires its own specific technique. Therefore, each application for **DEMETER** Certification of processed product will be assessed on a case-by-case basis. Any information supplied to the BDRI will be used for compliance purposes only and treated as commercial-in-confidence.

(b) The following flow chart summarises the requirements necessary for Processed Product to receive **DEMETER** Certification.



3.2.2 Processing Method

(a) In considering the requirements necessary to process **DEMETER** certified raw materials, three points are of main concern:

- (i) that no contamination of the product occurs at any stage of processing and handling,
- (ii) that the Bio-Dynamic quality of the product is maintained or enhanced by processing,
- (iii) that processing practices support Ecologically Sustainable Development (ESD).

(b) All aspects of the receival, handling, storage, processing, packaging, and distribution of the product to be certified must be clearly identifiable throughout each of these operations.

(c) Areas or activities which offer the potential for contamination of the **DEMETER** products with substances not complying with this Standard must be highlighted, along with the precautions taken to minimise this possibility occurring. Any activity or event which results in the contamination of **DEMETER** products must be immediately notified to the BDRI.

(d) The processing of food products shall be based on physical and/or biological methods and may include such natural processes as smoking. Extraction processes using chemicals are not permitted. Acceptable processing and preservation methods are detailed in **Section 2.4** of the **National Standard for Organic and Bio-Dynamic Produce**.

Note: UHT is **not** permitted under **DEMETER** certification.

(e) The **National Standard for Organic and Bio-Dynamic Product** also details the conditions for use of additives and/or processing aids. Where there is a demonstrated need, only the substances listed in **Appendices G, H, I, J, K and L** of the **National Standard for Organic and Bio-Dynamic Produce** may be used in certified product.

(f) Suitability of substances used in processing of fibre will be assessed on their residual effect on the product, their toxicity or harm to humans and the environment, and their biodegradability in cases where they are released to the environment during or after processing.

(g) The BDRI may accept the process as presented, request modification to the operation, or require further detail or testing to satisfy itself that the Bio-Dynamic quality of the product is maintained.

3.2.3 Sanitation and Cleaning of Equipment and Permitted Storage Practices

(a) The use of good management practice is essential in ensuring clean equipment and a clean working environment. Use of brooms, air, water, and steam are all acceptable methods for cleaning areas and equipment where certified product is handled and/or stored. **Appendix E** of the **National Standard for Organic and Bio-Dynamic Produce** details permitted Sanitation Products.

(b) In some cases, a plug or flush of certified product will need to be used to aid in cleaning the processing equipment. Product used as a plug may not be sold as part of the final **DEMETER** certified product.

(c) Acceptable Post Harvest/Storage Treatments are listed in **Appendix F** of the **National Standard for Organic and Bio-Dynamic Produce**.

3.2.4 Environmental and Social Aspects of Processing

(a) The commitment to and consciousness of the processor towards the environmental impact of the processing operation is also important. Therefore, operational management practices should include development and implementation of ecologically sustainable processing activities.

(b) The BDRI may request information on the factory's effluent treatment procedures, including wastewater treatment, solid waste disposal and/or air quality emission readings.

(c) Other environmental aspects such as recycling of material and the efficient use of energy and water may also be considered.

(d) In Australia there are laws and regulations relating to the working conditions and rights of employees such as health and safety; minimum wages; injury insurance; equal opportunity; freedom of association and negotiation; anti-discrimination. The BDRI expects that employees involved in the production or manufacture of **DEMETER** certified goods are protected within the framework of those laws and regulations and the fair intentions of the employer.

(e) Where components of proposed **DEMETER** certified goods are manufactured outside Australia the BDRI may request a report from a suitably qualified and independent organisation on the working conditions of employees carrying out the work.

3.2.5 Product Testing

(a) Whenever the BDRI or an Inspector appointed by the BDRI deems such necessary, testing of product for substances not compatible with this Standard will be arranged at a NATA (National Association of Testing Authorities) approved laboratory. Costs to be carried by the processor.

3.2.6 Use of the DEMETER Trademark on Product Labelling and Product Identification

(a) All conditions/requirements detailed under **Section 3.1.10: Use of the DEMETER Trademark on Product Labelling and Product Identification** also apply to processed **DEMETER** Certified product.

(b) In addition to (a) above, where a processed product contains ingredients which are not **DEMETER** certified products, the ingredient list must clearly indicate this.

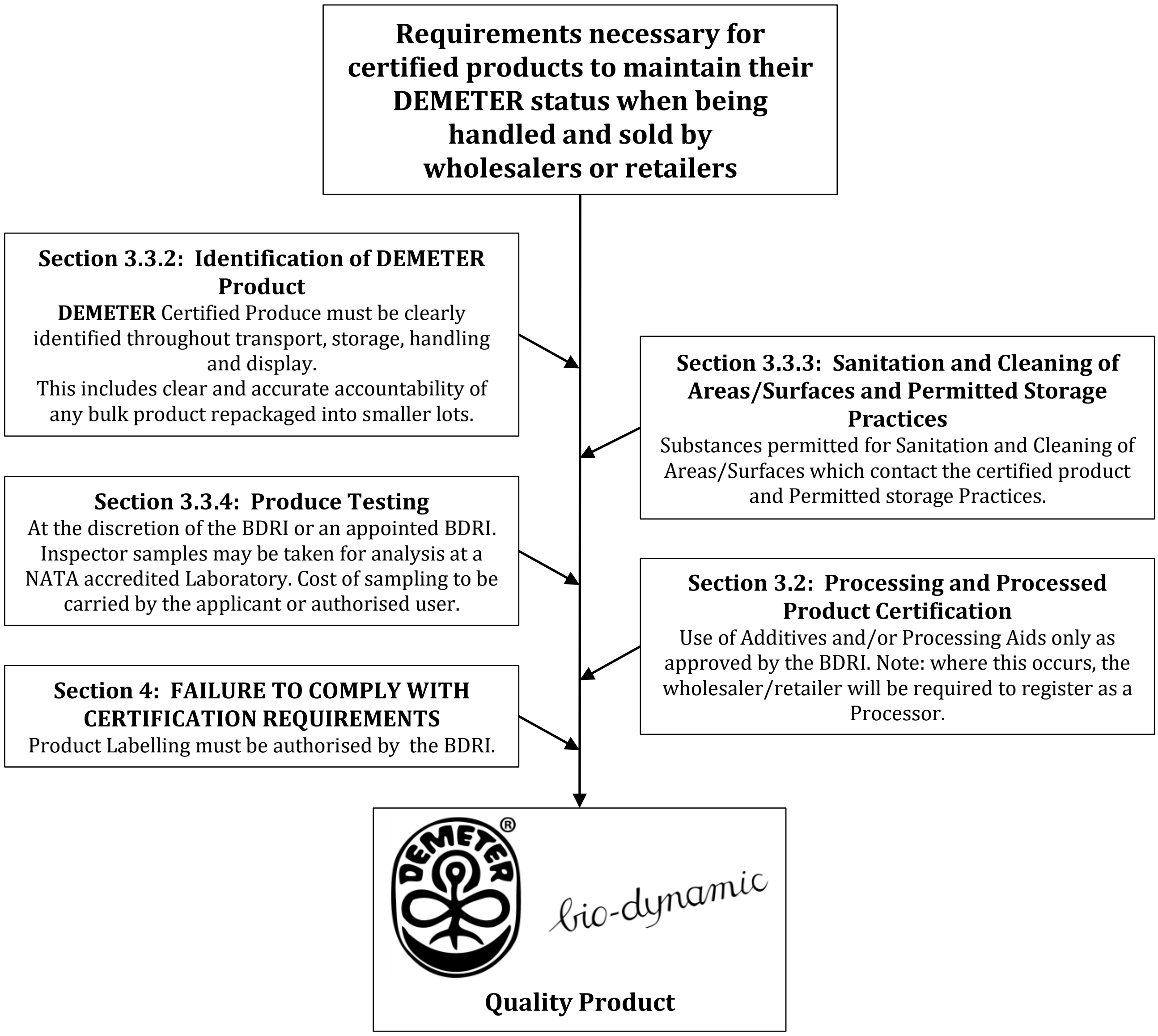
3.3 Wholesaling And Retailing Certification

3.3.1 Handling of Demeter Products to Maintain Certification

(a) Wholesalers or retailers who can demonstrate to the satisfaction of the BDRI that they can store, handle and/or re-package the **DEMETER** certified product in a manner that ensures no contamination of the product with substances or product not complying with this Standard can also apply for registration as an Authorised User. Such certification will allow them the right to use and advertise the **DEMETER** Logo according to the conditions outlined in this Standard.

(b) Areas, practices, or activities which offer the potential for contamination of **DEMETER** products with substances not complying with this Standard must be reported to the BDRI, along with the precautions taken to minimise this possibility occurring. Any activity or event which results in the contamination of **DEMETER** products must be immediately notified to the BDRI.

(c) The following flow chart summarises the requirements necessary for certified products to maintain their **DEMETER** status when being handled and sold by wholesalers or retailers.



3.3.2 Identification of DEMETER Product

(a) Identification of the certified product must be maintained throughout its storage, handling, and transport. This is achieved for:

- (i) Packaged Product, by:
  - (A) complying with the labelling requirements of the BDRI, and
  - (B) produce transfer certificates, consignment notices, invoices etc stating the product is a **DEMETER** certified product as per section 3.1.10

(b) Bulk Product, by

- (i) maintaining clearly identifiable compartments/areas which prevent the co-mingling of certified and non-certified product , and
  - (A) produce transfer certificates, consignment notices, invoices etc stating the product is a **DEMETER** certified product as per section 3.1.10

(c) Operators will also be required to have a product trace back system in place, via the use of a packing code or packing date or similar form of identification.

(d) No separation of categories is required for packaged certified and non-certified foods. However, each **DEMETER** certified package must comply with the labelling requirements detailed under **section 3.1.10** or **section 3.2.6** of this Standard.

(e) Display areas for non-packaged **DEMETER** certified product, for example: fruit, vegetables, and meat; must be clearly identified from other organic and conventional produce. Such produce must display:

- (i) reference to the BDRI as certifier, and
- (ii) reference to “**DEMETER Bio-Dynamic**” or “**DEMETER in-conversion Bio-Dynamic**”, and
- (iii) reference that the **DEMETER** word and/or logo is a registered Trademark i.e. ®, and
- (iv) some form of traceback identification to the producer or processor of the bulk product.

(f) Where a wholesaler/retailer wishes to package bulk **DEMETER** product into smaller lots, details of all aspects of handling, packaging, identification, and accountability must be provided.

3.3.3 Sanitation and Cleaning of Areas/Surfaces and Permitted Storage Practices

(a) The use of good management practice is essential in ensuring clean equipment and a clean working environment. Use of brooms, air, water, and steam are all acceptable methods for cleaning areas and equipment where certified product is handled, displayed and/or stored. **Appendix E** of the **National Standard for Organic and Bio-Dynamic Produce** refers to details of permitted Sanitation Products.

(b) Acceptable Post Harvest/Storage Treatments are listed in **Appendix F** of the **National Standard for Organic and Bio-Dynamic Produce**.

3.3.4 Produce Testing

(a) Whenever the BDRI or an Inspector appointed by the BDRI deems such necessary, testing of product for substances not compatible with this Standard will be arranged at a NATA (National Association of Testing Authorities) approved laboratory. Costs to be carried by the applicant or Authorised User.

3.4 Importing and Imported Product Certification

Note: Importing products bearing any reference to Demeter in Mark or Word is not permitted.

3.5 Exporting and Exported Produce Certification

3.5.1 Export Requirements for Demeter Products

(a) Any export of **DEMETER** certified produce or product must:

(i) be accompanied by an Organic Goods Certificate obtained, signed, and stamped by the BDRI, or other accredited certifying body in accordance with the "requirements to Issue & Manage Organic Goods".

(ii) Adhere to the requirements of the Export Control Act, The Export Control (Organic Goods) Rules 2021, the Administrative Arrangements for approved certified Bodies and any other documents or Industry Notices which are issued from time to time.

(iii) Refer to **Section 2** and **Section 7** of the **National Standard for Organic and Biodynamic Produce**.

4 FAILURE TO COMPLY WITH CERTIFICATION REQUIREMENTS

4.1 Introduction

(a) Subject to being appointed as an **authorised user** of the **DEMETER** trademark, the applicant agrees to abide by the requirements of the BDRI.

(b) An **authorised user** must inform the BDRI when they cease to meet the requirements of this Standard.

(c) Where the BDRI, or its appointed representative, finds that an **authorised user** no longer complies with the requirements of this Standard, the BDRI will inform the user of their non-compliance. The severity of the non-compliance will be determined by using the Graduated Sanctions as set out in the Department Organic Notice 2018/01.

(d) Where the non-compliance requires additional inspections to be undertaken by the BDRI, the cost of those additional inspections will be met by the operator.

(e) Failure to comply with the corrective action request will result in suspension or de-certification.

(f) Where suspension or decertification is imposed, the operator will be required to remove all reference to **DEMETER** Bio-Dynamic, and to the BDRI as certification body, from containers, labels and/or advertising material. In some instances, operators will also be required to recall product from the market place.

(g) Appeals process is as per **Section 4.5** of the **National Standard for Organic and Biodynamic Produce**. BDRI has an appeal and complaints committee.

The following situations will result in the non-compliance procedure as indicated above:

4.2 Farms

(a) Where the physical farm environment allows the application of the Bio-Dynamic preparations and, except for extreme climatic or other extenuating circumstances, the Bio-Dynamic preparations are not applied to the land at least once a year.

(b) Application of any substances not permitted under this Standard to certified land.

(c) Application of any substances not permitted under this Standard to certified plant or plant products.

(d) Application of any substance not permitted under this Standard to certified livestock.

4.3 Processing / Manufacturing

(a) Application, either intentional or accidental, of any substance not permitted under this Standard to certified product.

(b) Failure to notify the BDRI of alterations to the processing and/or handling procedure, as indicated in the flow chart provided by the operator to the BDRI.

4.4 Wholesaler / Retailer / Importer

(a) Application, either intentional or accidental, of any substance not permitted under this Standard to certified products.

(b) Failure to notify the BDRI of alterations to handling or storage procedures as indicated in the flow chart provided by the operator to the BDRI.

4.5 Exporter

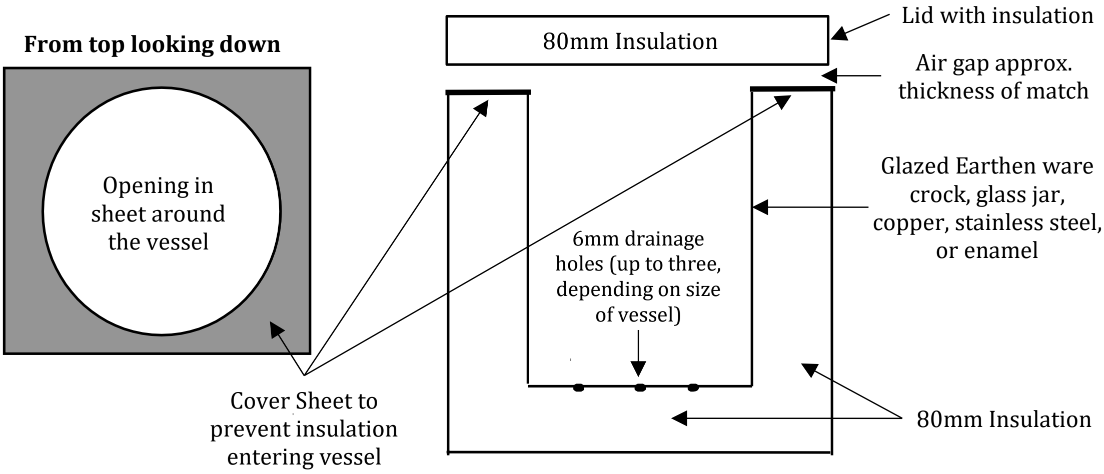
(a) Application, either intentional or accidental, of any substance not permitted under this Standard to certified products.

(b) Failure to notify the BDRI of alterations to handling or storage procedures as provided by the operator to the BDRI.

(c) Failure to comply with section 3.5.1(a) of this standard.

APPENDIX A STORAGE REQUIREMENTS FOR BIO-DYNAMIC PREPARATIONS

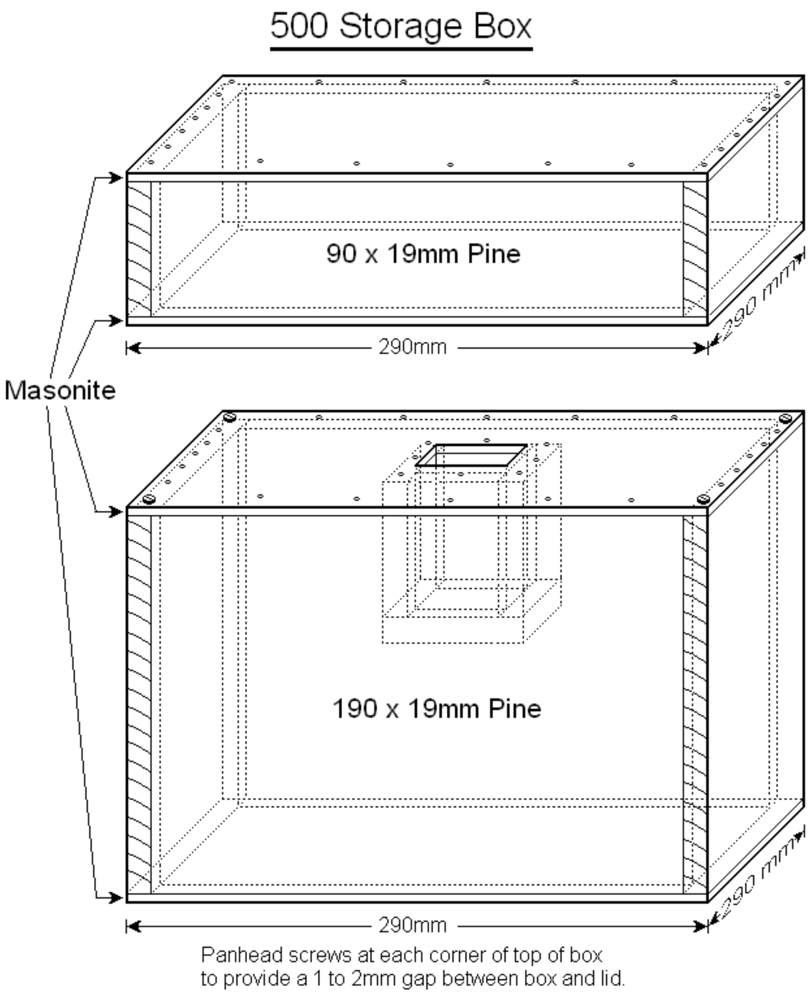
1. Diagram of 500 Storage box for large quantities of 500



2. Materials to be used

- **The box:** Australian untreated timber. Not chip board, ply, veneer board, MDF, etc.
- **Insulation:** As per section 3.1.2(e) of this Standard.
- **Actual 500 container:**
  - Can be an earthen ware crock (make sure that it has been glazed inside properly with no breaks or cracks).
  - Enamel containers if there are no faults or chips in the surface.
  - Copper containers are best used where large quantities must be stored.
    - Copper must be steel wooled to new sheen.
  - All containers are to have one to three 6mm holes in the bottom to allow the 500 to breathe.
  - Also, a cow horn, cut in half, should be put over the holes to stop 500 falling through.
  - In cases where a small amount of 500 is left over, it is best to store this in an open glass jar which is then placed in the larger 500 storage vessel.

3. Diagram for storage box for small quantities of 500



Material	Qty	Material	Qty
Pine 90 x 19 x 290 mm	2	Wood screws or nails	150 to 200
Pine 90 x 19 x 252 mm	2	Panhead screws	4
Pine 190 x 19 x 290 mm	2	Peat Moss	1 firm cubic foot
Pine 190 x 19 x 252 mm	2	Handles and hinges may be added	
Pine 90 x 19 x 55 mm	2		
Pine 90 x 19 x 93 mm	3		
Masonite* 290 x 290 x 4.8 mm	4		

* Use indoor masonite (water and compressed sawdust only); 'outdoor' masonite has chemical glues.

Note: 500 is placed in a glass jar with a loose-fitting lid, so air can get in, and the jar is placed inside the cavity in the storage box.

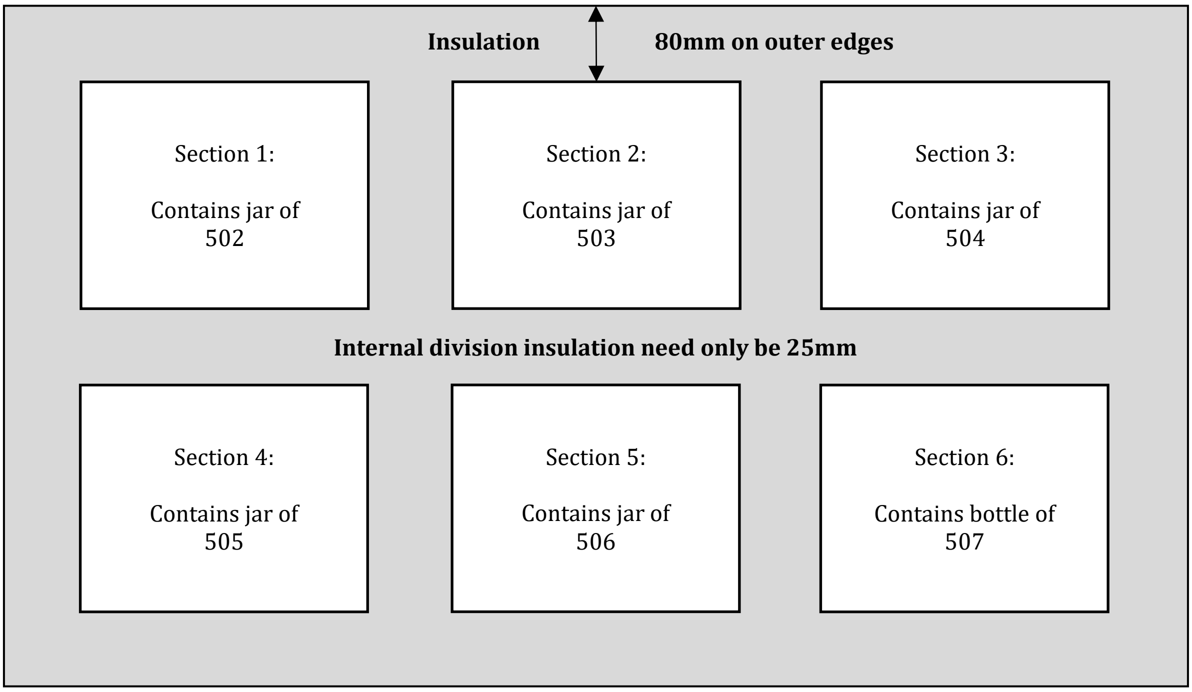
4. Storage Site

DO NOT STORE near any electrical wiring etc, fumes from farm vehicles or any excessive heat. Ideal is in a separate shed, under tank stand, in or under wool shed on southern side - in each case suitably protected/secured.

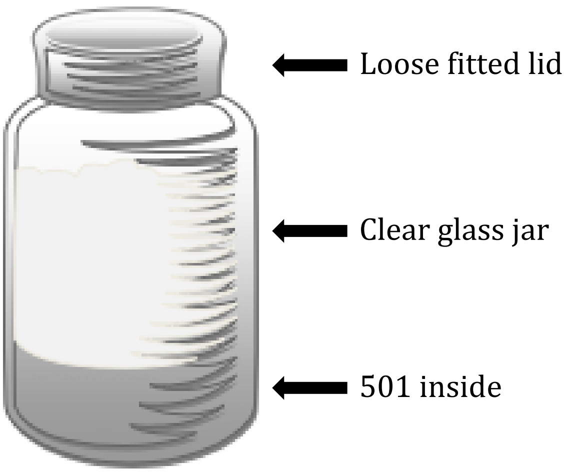
5. Compost Preparations

For bulk storage of compost preparations 6 (six) compartments insulated as outlined for 500 above must be provided, one for each preparation. A single lid providing 80mm of insulation completes the example below. Each preparation is placed in a glass jar and covered with a loosely set lid within the designated compartment. The exception is preparation 507, liquid valerian, which is stored in the compartment in an airtight bottle.

View from Top of Box



6. Storage of 501



- 501 is the only preparation that is stored dry.
- Store in a clear glass container with the lid loosened at least half a turn.
- Place the jar where it will receive a lot of light, including some direct morning sun; however, it should not be subject to soaring heat. An East-facing window is ideal.
- Turn the jar occasionally.
- 501 will store for many years this way.

APPENDIX B PERMITTED MINERAL INPUT LIST

General conditions of use:

- Derived from a natural source and in its natural form, free of chemical treatment to increase water solubility.
- Free of contamination that would conflict with the **National Standard for Organic and Biodynamic Produce**.
- Applied at the time of sowing green manure crop or correct phase of dynamic pasture management.

Common Name	Mineral Name and Chemical Formula	Application and Source
White Mica or Potash Mica	MUSCOVITE $KAl_2(AlSi_5O_{10})(F,OH)_2$	Non water soluble potassium source found naturally in Granite.
Black Mica	BIOTITE $K(MgFe)_3(AlSi_3O_{10})(F,OH)_2$	Non water soluble potassium/magnesium source, also found naturally in Granite alongside muscovite.
Greensand or Glauconitic Sandstone	GLAUCONITE $(K,Na)(Fe^{3+},Al,Mg)_2(Si,Al)_4O_{10}(OH)_2$	Slow release potassium source. Alternative to sulphate of potash. Very High CEC. Large commercial deposits in Western Australia.
K-Feldspar or potassium feldspar	ORTHOCLASE $KAlSi_3O_8$	Non water soluble potassium source found in Granites, mostly in the salmon-pink coloured rock.
Natural Calcium magnesium silicate	MONTICELLITE $CaMgSiO_4$	Can be used as a source of silica.
Wollastonite	WOLLASTONITE $CaSiO_3$	Natural plant available source of silica.
Magnesium iron silicate	OLIVINE $(Mg,Fe)_2SiO_4$	Releases silica, magnesium carbonate and iron oxide into the soil. Contains 25% Mg. Olivine is found in basalt.
Zeolite	CLINOPTILOLITE $(Na,K,Ca)_{2-3}Al_3(Al,Si)_2Si_{13}O_{36}.12H_2O$	Natural source of potassium. Absorbs potassium, ammonium NH_4, and phosphate from fertiliser and raw manures. Prevents volatilisation of NH_4 and ammonium toxicity. Prevents leaching of nitrate, phosphate, and potassium.

Common Name	Mineral Name and Chemical Formula	Application and Source
Talc	TALC $Mg_3Si_4O_{10}(OH)_2$	Can protect fruit from sunburn and useful in seed coating. Talc is inert and hydrophobic in nature so can prolong the life of stored seed and grain.
Kaolin clay	KAOLINITE $Al_2Si_2O_5(OH)_4$	Lowers leaf surface temperatures and protects against sun damage. Can prevent fungal spores from developing on plants and suppresses wide range of insects that feed on crops including beetles and codling moth.
Bentonite clay	MONTMORILLONITE $(Na,Ca)_{0.33}(Al,Mg)_2(Si_4O_{10})(OH)_2.nH_2O$	High CEC swelling clay, capable of holding and absorbing large volumes of water. Useful in purification of liquids and as a binder mixed with kaolin to pellet seeds.
Attapulgite clay	PALYGORSKITE $(Mg,Al)_2Si_4O_{10}(OH).4(H_20)$	Has unique colloidal properties and very high exchange capacity. Will not shrink and swell like other clays and can act as a carrier for many substances.
Rock dust from granites and rhyolites	GRANITE AND RYOLITE (ORTHOCLASE, QUARTZ, PLAGIOCLASE, MICA, APHIBOLE)	Contain mostly K-feldspar, quartz, biotite, muscovite, and some plagioclase. They are high in potassium (4% K_2O) and silica (72% SiO_2). They are low in calcium (1-2% CaO), magnesium (0.4-0.7% MgO), iron (1-2% FeO), manganese (0.5% MnO) and phosphate (0.7-1.2% P_2O_5)
Rock dusts from diorite and andesite	DIORITE AND ANDESITE (PLAGIOCLASE, AMPHIBOLE, MICA, QUARTZ, PYROXENE)	Contain mostly calcium feldspar, amphibole, mica with less quartz and some pyroxene. Compared to granite they are higher in Iron (4-5% FeO), manganese (0.12-0.14 % MnO), calcium (6.7% CaO), magnesium (3.7% MgO) and phosphate (0.21-0.29% P_2O_5). They are lower in silica (58% SiO_2) and potassium (1.7% K_2O).

Common Name	Mineral Name and Chemical Formula	Application and Source
Basalt dust	BASALT (PYROXENE, PLAGIOCLASE, OLIVINE, AMPHIBOLE, MICA)	Contain mostly pyroxene, calcium feldspar and olivine. Compared to granite, rhyolite, diorite and andesite they are high in calcium (9.47% CaO), iron (7.1% FeO), magnesium (6.73% MgO), manganese (0.2% MnO) and phosphate (0.36% P2O5). They contain less silica (49% SiO2) and potassium (1.1% K2O).
Diatomaceous earth	DIATOMITE SILECIOUS SEDIMENTARY ROCK	Source of silica and used widely as a pesticide.
Natural Magnesium oxide or magnesia	PERICLASE MgO	60% magnesium, high pH adjusting value.
Zinc oxide	ZINC OXIDE ZnO	Natural zinc source that is insoluble in water but soluble in dilute acids and bases. Slow release alternative to zinc sulphate.
Natural magnesium carbonate	MAGNESITE MgCO3	Contains around 28% magnesium. High pH adjusting value.
Calcium magnesium carbonate	DOLOMITE CaMg(CO3)2	Contains 12% magnesium and 22% calcium. High pH adjusting value.
Natural lime	NATURAL LIME CaCO3	37-40% calcium. High pH adjusting value.
Natural gypsum	NATURAL GYPSUM CaSO4	Contains calcium 24% and sulphur 18%.
Calcium magnesium boracite	HYDROBORACITE CaMgB6O8(OH)6.3H20	Natural rock mineral that contains water insoluble boron 10%, calcium 16% and magnesium 6%.
Bone meal	HYDROXYAPATITE Ca5(PO4)3(OH)	Natural mineral form of calcium apatite: produced biologically in bone which is 70% hydroxyapatite by weight. Contains 12-20% phosphate. Unlikely to contain cadmium, fluorides, or chlorides. Renewable alternative to rock phosphate. Higher acid solubility than rock phosphate.

Common Name	Mineral Name and Chemical Formula	Application and Source
Rock phosphate	APATITE $Ca_5(PO_4)_3(F,Cl,OH)$	Phosphorite or rock phosphate is a sedimentary rock containing 80% apatite used to produce 95% of phosphorus fertiliser worldwide. Cadmium, chlorides, and fluorides can be present in high levels.
FCMP	FUSED CALCIUM MAGNESIUM PHOSPHATE	Apatite heated and fused with calcium and magnesium silicates. Contains 8% phosphorus and supplies calcium and magnesium. Non water soluble, low (<0.5ppm) cadmium sources available in Australia.

APPENDIX C LINKS

National Standard for Organic and Bio-Dynamic Produce

National Standard for Organic and Bio-Dynamic Produce

https://www.awe.gov.au/sites/default/files/sitecollectiondocuments/aqis/exporting/food/organic/national-standard-edition-3-7.pdf

Learning Resources

Various learning resources available are referred to throughout the Standard:

https://demeterbiodynamic.com.au/learning-events/#Resources

These include:

- **PDFs** – https://demeterbiodynamic.com.au/learning-events/#Resources
  - ***2011 Lecture*** – https://demeterbiodynamic.com.au/wp-content/uploads/2020/07/2011-lecture.pdf
  - ***Bio-Dynamics Agriculture of the Future*** – https://demeterbiodynamic.com.au/new/docs/BD-Ag-of-Future.pdf
  - ***Living Agriculture*** – https://demeterbiodynamic.com.au/wp-content/uploads/2020/07/Living-Agriculture.pdf
  - ***Living Knowledge*** – https://demeterbiodynamic.com.au/wp-content/uploads/2020/07/Living-Knowledge.pdf
  - ***IFOAM Conference Address 2005*** – https://demeterbiodynamic.com.au/wp-content/uploads/2020/07/IFOAM-2005-Lecture.pdf
- **Books** – https://biodynamic.com.au/organic-products/media-and-merchandise/
- **DVDs** – https://biodynamic.com.au/?s=dvd

Instructional Videos

Various instructional videos available are referred to throughout the Standard:

https://demeterbiodynamic.com.au/video-library/

These include:

- ***Stirring Machine***
- ***Soil Conversion***
- ***5 Bio-Dynamic Farms***
- ***Compost Making***
- ***Cosmo Earthly Ecology***
- ***Vortex Vegies***

* Links correct at time of publication.