



Certified Regenerative Standard

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1 Introduction

1.1 Preface

The Certified Regenerative Standard was created to fill the actual or perceived gaps in the Australian National Organic Standard. While the National Standard for Organic & Biodynamic Produce and the AS6000: 2015 Organic & Biodynamic Products provide a framework for organic production that occurs above ground, no organic Standard addresses the basic issues of soil health, soil nutrition or soil organic carbon levels that occur below the surface.

This Standard is based on and is intended to be, complimentary to organic production standards such as the National Standard for Organic & Biodynamic Produce and AS6000: 2015 Organic and Biodynamic products.

This Standard sets out the maintenance of records and the use of appropriate identification and traceability.

Certification under this Standard represents to Australian and international food processors, suppliers and consumers that the Producer / Processor follows Regenerative practices in relation to the production, handling, processing and storage of livestock & perishable products produced on / processed in, a certified production or processing unit.

It is important to note that this standard is not a Food Safety Standard. The purpose of Certification under this Standard is to demonstrate that the products or produce has been processed, grown or managed under regenerative farming practices.

The production requirements of this standard are drawn largely from the National Standard for Organic and Bio-Dynamic Produce:

Department of Agriculture, Fisheries and Forestry
Organic Exports Program
Exports and Veterinary Services Division
GPO Box 858, Canberra, ACT, 2601, AUSTRALIA
Telephone: + 1800 900 090
Email: OrganicExports@aff.gov.au

This document can be found at <https://www.agriculture.gov.au/>.

Standard Revision & Updates

The SXC Certified Regenerative Standard will be subjected to regular reviews by an independent, cross industry Technical Committee consisting of specialists in soil science, farming and standard compliance. Reviews will occur at least annually.

Document Conventions

The contents of this Standard contain three distinct components:

1. General principles: Principles that apply to Certified Regenerative activities. These are in italic text. General principles are informative and intended to give the reader information and guidance on what each clause aims to achieve.
2. The Standards. Which must be met by a Certified Regenerative farming / processing unit for compliance with this Standard. These are in normal print and are normative.

3. Derogations. A formal approval to digress from this Standard. A derogation may be available when a situation is defined and thus a temporary digression from the Standard may be allowable.

This Standard may not be copied or reproduced without the written consent of the authors.

Certification Body

Southern Cross Certified Australia Pty Ltd.

96 Petrie Terrace,

Brisbane.

AUSTRALIA, 4000

Tel: +61 7 3088 2808

Email: info@sxca.com.au

Web: www.sxcertified.com.au

This Standard was developed by Southern Cross Certified. SXC acknowledges the assistance provided by Mike McCosker from CarbonEight. CarbonEight is available for the provision of mentoring and advisory services to applicants for this Regenerative Standard. For more information, please go to: <https://carbon8.org.au/farmers/>

1.2 Objectives

The objectives of this Standard are:

- a) to establish a mechanism for an industrialised farming production unit to transition to Certified Regenerative and ultimately to Certified Organic & Regenerative certification. This mechanism covers the transition from industrialised farming systems to chemical free, Regenerative farming.
- b) to ensure that all stages of production, preparation and marketing meet or align with the minimum requirements of:
 - This Standard
 - The National Standard for Organic & Biodynamic Produce, (The National Export Standard) when applicable,
 - The USDA National Organic Program when applicable
 - The IACB EU Third Party Equivalence Standard when applicable
 - AS6000-2015 Organic & Biodynamic Products when applicable
- c) to ensure conditions of fair competition in the marketplace by distinguishing those products produced according to each of the above Standards from those produced by other means.
- d) to provide a guide to farmers contemplating converting from an industrialised farming system to a Regenerative farming system. Once on the Regenerative pathway, all operations are encouraged to proceed to full Certified Organic Regenerative Certification.
- e) It is intended to introduce a Food Nutrient Density component to this Standard as part of a future revision. This is intended to indicate the nutrient density of food grown in and on a Certified Regenerative production unit.
- f) As a longer term objective, it is hoped that the Certified Regenerative Standard may be included in the Standards Australia suite of standards.

1.3 Scope

This Standard stipulates the minimum criteria that must be met by operators before a certified product can be labelled as Certified Regenerative. A product that complies with this Standard may be described by the terms Certified Regenerative, in labelling, advertising and / or commercial documentation.

This Standard applies to the following products:

- a) unprocessed products from plants, animals and other cultured organisms; and
- b) processed products derived mainly from (a) above.

Products or by-products that:

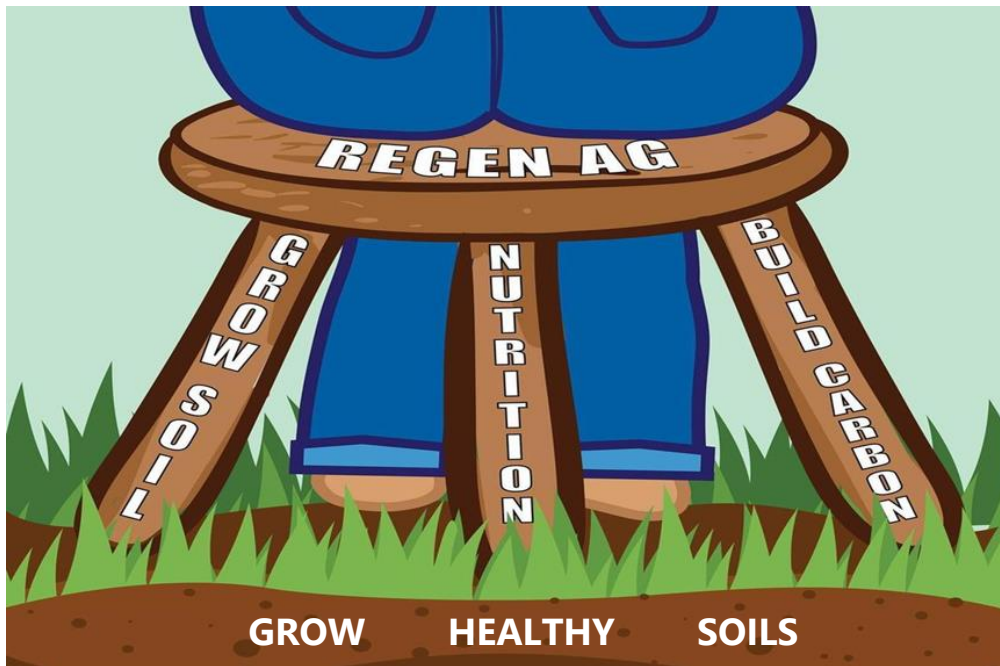
- are derived from genetic modification technology, or
- treated with ionising radiation, or
- interfere with the natural metabolism of livestock and plants,
- are manufactured / produced using nanotechnology,

are not compatible with the principles of Regenerative, Organic, Biodynamic or Biological agriculture and therefore, are not permitted under this Standard.

Growing in containers or earth-less media is not compatible with this Standard.

In itself, this Standard does not guarantee that Regenerative products are free of non-allowed residue material, or other environmental contamination as they may be subjected to pollution sources beyond the control and / or detection by the certified operator. However, the procedures practiced in accordance with this Standard by the certified operator, will ensure the lowest possible risk of contamination of Regenerative produce.

2 Regenerative Farming



2.1 Definition

A farming system that builds soil and soil biota; builds soil carbon levels within the soils ecosystem and builds nutrition in food grown in and on that soil.

2.2 Certified Regenerative Farming Overview

Through the implementation of the production requirements specified in this standard and by measuring and monitoring the four core components, the farming system can progress through the levels of certification to become Certified Regenerative.

Starting from an Initiate level, the farming system can progress to an In-Transition level, and then to a Regenerative level. It is anticipated that operators will also become certified to a recognised Organic standard, to ultimately be able to make the claim of Certified Organic and Regenerative.

The key aims of a Certified Regenerative production unit include:

- The enhancement of soil health and the soils biological cycles .
- Maintaining or improving the fertility and biological function of soils.
- The production of food of high nutritional value.
- Working as far as practicable within a closed system by minimizing the use of non- renewable resources.
- The avoidance of pollution resulting from agricultural practices and processing.
- The co-existence with, and the protection of, the environment.

2.3 The Core Components of Regenerative Farming

While there are many components that comprise a regenerative farming system, this Standard focuses on measurements of four core components of regenerative agriculture. The measurements of these core components are needed for a production unit to align with regenerative, organic and social ideals:

1. Soil Organic Carbon
2. Soil Health and Microbial Activity
3. Biodiversity of Root and Plant Eco-system Functions
4. Chemical Use and Chemical Residues

The core components all work together. As one component responds, other components will also respond. Measuring of all four components will provide operators with accurate information on the status of their production unit in relation to this Certified Regenerative Standard.

These components identify key ecosystem functions and will enable the certified operator and the Certification Body to understand how the system/farm unit/land is evolving. Once the operator has achieved targets (specified in Section 5) related to these core components, the operator can progress through the levels of certification.

2.4 Soil Organic Carbon

Soil organic carbon is a measurable component of soil organic matter.

Organic matter contributes to nutrient retention and turnover, soil structure, moisture retention and availability and carbon sequestration.

Sufficient organic material should be regenerated and/or returned to the soil to improve, or at least maintain, humus levels. Conservation and recycling of nutrients is a major feature of any regenerative farming system.

A high or routine use of off-farm inputs is not encouraged by this Standard.

As a general principle, soil is managed to increase biological activity and diversity. Any practice that kills or depletes soil biota and biological diversity is discouraged.

Soil carbon levels are used as one of the outcome measurements for soil health. Soils have declined in soil organic carbon (SOC) levels, however, there are many regenerative practices that can rebuild carbon levels including diversity in plants and in soil biota. This is a core activity and primary principle of regenerative farming.

2.5 Soil Health & Microbial Activity

Soil health is one of the foundations of agriculture. Living earth enables plants and animals to thrive. The aim of this Core Outcome is to improve soil health through increased microbial, fungal and bacterial activity. This is a requirement of regenerative production.

Healthy soil is the prerequisite for healthy plants, animals and products. The care of a living, microbially active soil and the maintenance or improvement of the soil structure, fertility and nutrient cycling is fundamental to all measures adopted.

Microbial biomass is increased by management practices that increase inputs of organic carbon to the soil and improve the chemical and physical conditions experienced by microorganisms in soil.

Microbial biomass is an important indicator of soil health because it is closely related to nutrient release from plant residues.

Plant nutrient density is an indicator of the combined effect of soil health, plant management, and nutrients used. Plant nutrient density can be measured and is a strong indicator of a regenerative system.

Regenerative systems rely upon biological diversity, therefore, crop rotations, use of residual crops, animal manures, legumes, green manures, mechanical cultivation, cultural control, minimal application of approved mineral-bearing rocks and aspects of biological pest management to maintain soil productivity and tilth, are encouraged to supply plant nutrients and to control insects, diseases, weeds and other pests.

2.6 Biodiversity

Soil and Eco-system Biodiversity must be taken into account when considering regenerative agriculture. Enabling and supporting the biodiversity on the farm is the third rule of certification requirements. It may include introduction of cover or green manure crops, new infrastructure, supporting existing infrastructure, changes in management and cropping systems and working alongside neighbouring properties and or national parks and nature reserves.

Organic Standard principles for biodiversity are:

- Monitoring and measuring of microbial biomass
- Use of cropping or natural fertilisers that promote and enhance eco-system functions
- establishing and/or retaining vegetation on farms,
- managing rangelands, waterways, floodplains, rivers, streams and wetlands,
- provision of wind breaks and non-cultivated buffer zone areas.

The use of biological management practices for the control of pests and diseases is strongly encouraged.

The use of livestock is encouraged in a Regenerative farming system.

The SXC Certified Regenerative Standard Application process asks a series of questions in relation to Biodiversity. The responses to these questions will become the Biodiversity Plan and will be included in, the operators overall Farm Regenerative Plan.

2.7 Chemical Use and Chemical Residues

Prohibited substances are defined in this Standard as substances used in production, processing or handling that are not permitted for use in the National Standard for Organic & Biodynamic Produce. Substances which are permitted for use in the National Standard for Organic & Biodynamic Produce are permitted for use in this standard.

Chemicals use need to be reduced with a plan to have zero chemicals within the system.

Chemical residue testing and acceptable levels are explained in Section 5.

For Initiate level, prohibited substances can be used when based on an identified need, but must have prior approval from the Certification Body. The use of prohibited substances will make the product ineligible for sale as Regenerative under this Standard.

3 Production Requirements

3.1 Farm Regenerative Plan

The Farm Regenerative Plan is an important part of this standard. It is expected that the farm regenerative plan will outline the strategy of improvement from a conventional farming system to the Regenerative farming system, including the farms plan to improve Soil & Eco-system Biodiversity.

The Farm Regenerative Plan must include a farm map which, as a minimum, encompasses the area to be included in the certification and key geographical features.

Farm Regenerative Plans are encouraged to work toward mineral balance and higher levels of soil carbon and microbial biomass.

A Mentor or consulting agronomist with experience in Regenerative Agriculture may be engaged to assist in the development of a Farm Regenerative Plan. The Certification Body must be notified of this Mentor or Consultant to avoid placing the operator or Consultant in a position of conflict.

- 3.1.1 For operators that have not yet achieved the Regenerative level, the farm regenerative plan must contain details on the farm management practices that will be implemented by the operator in order to achieve the core component measurement targets required to reach the next level.
- 3.1.2 For operators that have achieved the Regenerative level, the farm regenerative plan must contain details on the farm management practices that will be implemented by the operator in order to maintain and improve core component measurement results.

3.2 Genetic modification

- 3.2.1 GMO's are specifically prohibited under this standard.
- 3.2.2 The use of products comprised of or derived from GMO's, is prohibited.
- 3.2.3 Product known to be contaminated by GMO, or their by-products must be excluded from sale as Certified Regenerative.
- 3.2.4 Where GMO crops have been grown on a production unit, a minimum of at least three years must elapse before products grown or produced on the affected area can be certified according to this standard.

3.3 Biodiversity

- 3.3.1 Operators should develop at least 5% of their property as treed areas, grasslands or other reserves which are non-cultivated and non-intensively grazed within five years from the date the production unit attains In-Transition status
- 3.3.2 As part of their Farm Regenerative Plan, Certified Operators must also develop strategies to measure, monitor and enhance soil & root microbial biomass.

3.4 Soil Management

- 3.4.1 The fertility and the biological activity of the soil must be maintained or increased by any combination of the following methods:
- Use of legumes, green manure crops or perennial deep-rooting plants in an appropriate rotation program.
 - Sheet composting using animal manures. These areas are required to grow two green manure crops before the area is planted to crops intended for human consumption.
 - Application of fully composted organic matter (composted to AS4454).
 - Application of bio-dynamic preparations and methods.
 - Tillage techniques which preserve or improve soil structure.
 - Incorporation of livestock into the farming system.
- 3.4.2 Cultivation of soils is to be undertaken with care and consideration. Implements and techniques chosen must maintain or improve soil structure.

3.5 Chemical and Synthetic Inputs

- 3.5.1 The use of off-farm fertilisers shall be regarded as a supplement to nutrient recycling (refer section 3.4.1), not as a replacement for good soil management practices. The use of fertilisers shall be applied according to a demonstrated need.
- 3.5.2 The reliance on substances rather than management practices for the control of pests and diseases is not in accordance with the principal aims of regenerative agriculture.
- 3.5.3 Records must be kept of the purchase and use of all inputs used by the operator (i.e. source, amount and use).
- 3.5.4 The use of prohibited substances is not allowed under this Standard. Emphasis must be placed on biological, natural or sustainable management practices utilising renewable resources ensuring the maintenance or enhancement of environmental quality.

Derogation

Where an operator at the Initiate level can demonstrate that a prohibited substance (refer section [2.7](#)) should be used, the use of a GMO free, prohibited substance can be approved by the Certification Body.

- 3.5.5 The use of Organophosphates including Glyphosate, is prohibited under any circumstance.
- 3.5.6 The operator must address the potential risks from prior operations and consequences of external contamination with substances not permitted by this Standard. This may require the implementation of buffer zones / barriers and withdrawal of contaminated product / land from certification.
- 3.5.7 Product known to be contaminated by prohibited substances (refer section [2.7](#)) must be excluded from sale as Certified Regenerative.
- 3.5.8 Where a product has been contaminated with prohibited substances as a result of factors beyond the control of the certified operator, such as long term residual contamination, then chemical residue tests of the product must be undertaken.

The results of these tests must register below 10% of the Maximum Residue Limit (MRL) as established by FSANZ for chemical residues in that product before that product can be sold as being certified to this Standard.

3.6 Water Management

- 3.6.1 Onsite harvest of water for agricultural use must allow for maintenance of local ecosystems and ensure environmental flows to maintain existing riverine health, wetlands and biodiversity.
- 3.6.2 Water containing treated human & industrial effluents, and / or their treated by-products can only be used:
- a) After the water has been subject to effective treatments and the appropriate State / Territory authorities have permitted such waters to re-enter a natural public waterway system.
 - b) If directly used for irrigation purposes, only after the water has been treated to such a level that State / Territory authorities deem the water suitable for unrestricted agricultural use, and the quality of the water does not add to the risk of contaminating produce, soils or the environment with nutrients, pathogenic organisms, heavy metals or residues of non-permitted substances.
 - c) Use of such reclaimed water may only be applied to the certified production unit if the following occurs:
 - it is applied to green manure crops; or
 - it is applied to seedlings, prior to transplant; or
 - it is applied to any production system not designated for human or animal consumption; or
 - it is applied to grazing areas no later than eight days before grazing.
 - to crops for human consumption, it may only be applied via trickle irrigation, and in such a manner as to preclude contact with any edible portion of the product during growth and harvest, and
 - Use of such water must be documented.
 - Raw animal liquid waste can only be applied to green manure crops or pastures and never be directly applied to edible crops.
 - Adequate dams and/or drinking facilities shall be established to allow rotational grazing management as per the National Organic Standard.
 - Drinking water cannot be produced or harvested and sold for human consumption as Regenerative under this Standard.

3.7 Plant Production

- 3.7.1 Varied micro-environments such as decoy crops, tree lines and maintaining natural areas within the farm, are encouraged by this Standard to provide favourable conditions for the natural enemies of pests & disease organisms.
- 3.7.2 Plants grown under a Regenerative production system do not have to be grown from seed or plant propagation material grown under a similar production system. New seeds and new vegetative reproductive materials shall be considered Regenerative when grown in accordance with this Standard.

Note: For operations certified to this Standard in conjunction with a recognised Organic Standard, there are often additional requirements regarding the source of seeds and propagating material. These requirements may include derogations that must be approved by the Certification Body prior to planting.

- 3.7.3 Wherever possible, operators should include deep rooted and leguminous species within crop rotations.
- 3.7.4 Records must be kept for:
1. Purchases of seed or plant propagation material,
 2. Planting including dates, paddocks and quantities / rates,
 3. Harvesting including dates, paddocks and quantities / rates,
 4. Inputs used as per section [3.5.3](#),
 5. Sales of product.

3.8 Plant Protection

- 3.8.1 Pests, diseases and weeds must be controlled by any combination of the following:
- choice of appropriate species and varieties
 - biological control
 - appropriate rotation programs
 - mechanical controls such as traps, barriers, light and sound
 - mechanical cultivation
 - mulching and mowing
 - grazing of livestock
 - protection of natural enemies of pests through provision of favourable habitats (e.g. hedges, nesting sites)
 - flame/steam weeding
- 3.8.2 Mulching materials, wherever possible should be made from natural materials.
- 3.8.3 Mulching materials must not contain substances prohibited by this Standard and their use must be documented.
- 3.8.4 Where permitted woven plastic/synthetic materials are used, their complete retrieval from the environment must be undertaken.
- 3.8.5 Solid non-woven plastic or synthetic material sheets for mulching are prohibited.

Derogation

Where an operator can demonstrate to the Certification Body that material specified under 3.8.5 should be used, the operator must seek written approval from the Certification Body.

3.9 Livestock

Livestock make an important contribution to a Regenerative farming system by:

- *improving and maintaining the fertility of the soil, and*
- *controlling weeds through grazing, and*
- *diversifying the biology and interactions of the farm.*

Regenerative livestock are born or hatched and raised on a regenerative farm.

Regenerative livestock breeding relies on natural breeding methods or artificial insemination without the use of artificial heat synchronisation methods or drugs.

Except where directly stated, livestock that are certified to a recognised Organic standard are considered to be compliant with the livestock requirements of this standard. The following standards are recognised:

- AS 6000 – Organic and biodynamic products
- The Australian National Standard for Organic and Biodynamic Products
- The USDA National Organic Program
- European Regulation 2018 / 848 on organic production and labelling of organic products
- The IACB Equivalent European Union Organic Production & Processing Standard for Third Countries
- The New Zealand BioGro Organic Standards.

- 3.9.1 Conventional livestock can be run on a certified regenerative production unit but must be managed in accordance with this Standard while on the production unit.
- 3.9.2 Livestock can only carry the same In-Transition or Regenerative Certification status as currently held by the production unit
- 3.9.3 All livestock introduced from non-Regenerative certified sources, must be quarantined from regenerative stock for a minimum of three weeks.

Table 1. Conversion Requirements for Livestock & Livestock Products

Produce	Requirements for Regenerative Certification
Wool	From 18 months after entering the system
Milk	From 180 days after entering the system
Eggs	From Chicks up to 2 days old entering the system
Poultry & Meat from Game Birds	From Chicks up to 2 days old entering the system
Ruminant & mono-gastric animals for meat	From last trimester of pregnancy

Livestock Stocking Densities

- 3.9.4 Stocking densities must be in accordance with regional expectations, environmental and seasonal conditions, nutrient availability and prevent degradation and animal welfare issues from overstocking or poor rotations.
- 3.9.5 Poultry cannot exceed 1,500 birds per hectare for set stocking systems and 2,500 birds per hectare for open range systems. This requirement takes precedence over similar requirements in recognised Organic standards.

Livestock Breeding

- 3.9.6 Natural breeding methods are encouraged however, artificial insemination is allowed.
- 3.9.7 Embryo transfer, genetic engineering, super ovulation treatments and modified sperm, are not permitted.

Livestock Nutrition

- 3.9.8 Livestock systems shall provide 100% of the diet from feed produced according to this standard or recognised Organic standard.

- 3.9.9 Livestock must be provided with food that is natural to their diet, including mineral supplements.
- 3.9.10 Feed supplements should be of agricultural origin and produced in accordance with this Standard or a recognised Organic Standard.

Feed supplements of non agricultural origins including minerals, trace elements, vitamins and pro vitamins, can be used providing they are from natural sources. Supplements from other sources must be approved by the Certification Body.

Derogation

In circumstances of extreme climatic or other extenuating circumstances, an exemption for the feeding of regenerative feedstuff to certified livestock may be granted by the Certification Body. In such a situation, livestock receiving feed that does not comply with this Standard must be fed on compliant feed for a consecutive six month period before regaining Regenerative status

Disease Prevention and Treatment

- 3.9.11 The reliance on substances rather than management practices for the control of pests and diseases, is not in accordance with regenerative grazing principals
- 3.9.12 The welfare of the animal overrides this Standard. Despite preventative measures, if an animal is sick or injured, it must immediately have the appropriate treatment.
- 3.9.13 Medicinal remedies should in the first instance, include phytotherapeutic or homeopathic treatments.
- 3.9.14 Allopathic veterinary drugs and antibiotics can be used but only on veterinary instructions. Such animals, or their products, cannot be sold as regenerative.
- 3.9.15 The use of vaccines is permitted providing a non GMO declaration is obtained.

Livestock Welfare

- 3.9.16 The welfare of livestock is paramount. Statutory legislative requirements or mandates in relation to animal welfare, override this Standard.
- 3.9.17 Living conditions must provide for the natural needs of the animal for free movement and to satisfy its biological functions.
- 3.9.18 The use of anaesthetics administered during surgical procedures, will not result in the loss of certification status.

Livestock Housing

- 3.9.19 Where housing is provided, the design and construction must satisfy the biological and behavioural needs of livestock.
- 3.9.20 Stocking density in buildings must provide comfort and wellbeing, allowing sufficient space for the livestock to stand naturally, lie down, turn around and groom themselves.
- 3.9.21 Shed stocking density, including roosting areas, for laying chickens shall not exceed 16 kg/m² and for all other birds shall not exceed 25 kg/m² over the usable area of the shed.

3.10 Processing

- 3.10.1 For processed products that bear references to this Standard, at least 70% of the ingredients must be from a Certified Regenerative / In-Transition source.
- 3.10.2 Ingredients other than Certified Regenerative / In-Transition must not be from prohibited substances (defined in Section [2.7](#)).
- 3.10.3 The use of additives and processing aids is permitted only where their use does not compromise the authenticity of the product or detract from the overall quality of the product.
- 3.10.4 The use of additives and processing aids is restricted to a demonstrated technological need, or where:
- they are indispensable for ensuring the safety of the product; or
 - they are essential to prepare or preserve such a product, or
 - they minimise the physical or mechanical effects to a product, or
 - the Commonwealth, State or Territory law requires them.

3.11 Parallel Production / Processing

- 3.11.1 An operator of a Certified Regenerative production / processing unit may also operate a conventional production / processing unit. However, in order to prevent comingling and contamination, procedures that provide clear segregation of product must be documented.
- 3.11.2 All records required by this Standard are to be clearly identifiable from records related to conventional / non-Regenerative production.

3.12 Labelling

- 3.12.1 Products produced in accordance with this Standard are clearly and accurately labelled to ensure consumers are well informed when purchasing products.
- 3.12.2 Products sold, labelled, or represented as **100% Certified Regenerative** must contain, by weight or by fluid volume, 100% raw or processed agricultural product that fulfils the production and handling/processing requirements of this Standard.
- 3.12.3 A product may be sold, labelled or represented as **Certified Regenerative** provided at least 95% of the ingredients are from a Certified Regenerative / In-Transition source. The ingredients that are not certified Regenerative must be free from GMO contamination.
- 3.12.4 A product may be sold, labelled or represented as **Made with Certified Regenerative Ingredients** provided at least 70% of the ingredients are from a Certified Regenerative / In-Transition source. . The ingredients that are not certified Regenerative must be free from GMO contamination. In this case, certification marks must not be used.
- 3.12.5 The conditions indicated above, also apply for any products that are to be sold, labelled or represented as In-Transition, with the exception that the ingredients used are sourced from farms that have achieved the In-Transition level. Such products may be labelled as **Certified Regenerative In-Transition**.
- 3.12.6 The indications referring to an In-Transition product must not mislead the purchaser that the product is anything other than an In-Transition product.

4 Testing and Test Methods

- 4.1.1 Soil sample sites will be determined by the certification body in consultation with the operator and identified on a Farm Sampling Map. The location of soil sample sites cannot change (Refer 3.1).

Derogation

Where there are extenuating circumstances such as a contamination or severe weather event, the Certification Body may approve a change in the location of test sample site.

- 4.1.2 To confirm the levels of certification, test samples may only be collected by an independent, approved sampling representative or an approved and qualified Auditor.
- 4.1.3 In order to confirm the levels of certification, the number and type of samples required for collection is defined in Section [5](#).

4.2 Test Methods

4.2.1 Soil Organic Carbon Testing – LECO

CFI methodology including Total Organic Carbon by LECO, air-dry mass and gravimetric water content on the air-dry soil.

4.2.2 Soil Health, Microbial Biomass & Fungal to Bacterial Ratio Testing

Using an infield MicroBiometer, the microbial biomass of soils and composts can be measured. The MicroBiometer also calculates the fungal to bacterial ratio for soils.

Soil microbes secrete a substance that binds non-living soil particles to each other and to themselves. The MicroBiometer method extracts the microbes from the bound soil particles which then settle to the bottom. The soil-coloured microbes remain suspended in the fluid and are sampled.

Microbial biomass is calculated and displayed in micrograms of microbial-carbon per gram of soil ($\mu\text{g/g}$) and fungal to bacterial ratio is calculated and displayed as F:B, F% and B%.

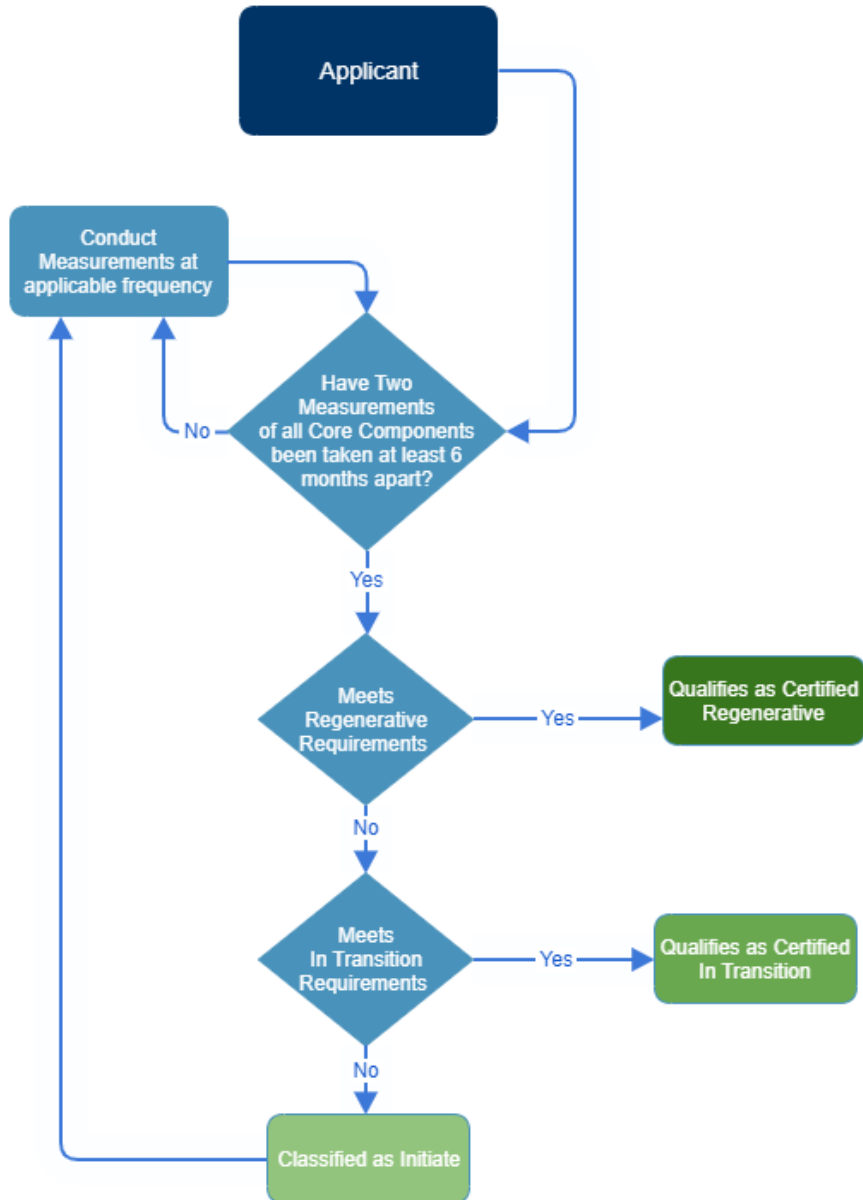
4.2.3 Chemical Residue Testing – Gas Chromatography / Liquid Chromatography

Chemical residue testing to be conducted at an ISO 17025 accredited test facility using Gas Chromatography or Liquid Chromatography techniques to identify commonly used agricultural chemicals, including but not limited to :

- Carbamates,
- Fungicides,
- Herbicides,
- Insecticides/Acaricides,
- Organochlorines,
- Organophosphates,
- Phenols,
- Synthetic Pyrethroids.

5 Certification Progression

All applicants for the Certified Regenerative Standard will start at the Initiate level. This is because the In-Transition level requires a minimum of two consecutive testing events (six months apart). The following sections detail the minimum requirements to achieve the various levels.



5.1 Minimum Requirements for the Initiate Level

1. A biodiversity plan has been developed and implementation of the plan has begun.
2. Base line tests must be conducted (using the test methods described in Section [4.2](#)) with the only requirement being that there must be no detections of glyphosate, gluphosinate or AMPA.

5.2 Minimum Requirements for the Certified In-Transition Level

5.2.1 Entry Requirements

A minimum of three of the four measurement targets below must be achieved in each of two consecutive testing events (a minimum of six months apart) before an operator can progress to Certified In-Transition.

	Soil Organic Carbon	Microbial activity	Fungal to Bacterial Ratio	Chemical Use
Number of Samples per Soil Sample Site	1 Combined sample (consisting of at least 3 sub-samples), to be used for all four tests.			
Minimum Measurement Target	1.5%	200 ug C/g	0.3	No detections*
Test Method	LECO Soil Organic Carbon Test	MicroBiometer in Field Test	MicroBiometer in Field Test	Gas Chromatography / Liquid Chromatography

*Where chemical use is detected, and this use is indicative of the chemical being present for a long period of time (due to the chemical not breaking down) this may be acceptable provided the farm regenerative plan aims to reduce the detected levels over time.

5.2.2 Continuing Requirements

1. The biodiversity plan must continue to be implemented.
2. Testing must be conducted at least annually with a minimum of three of the four measurement targets continuing to be achieved.

5.2.3 Regression

Where the continuing requirements in 5.2.2 have not been met for two consecutive testing events (spaced between 6 months and 12 months apart) the operator will regress to the Initiate Level.

5.3 Minimum Requirements for the Certified Regenerative Level

5.3.1 Entry Requirements

All measurement targets below must be achieved in each of two consecutive testing events (a minimum of six months apart) before an operator can progress to Certified Regenerative.

	Soil Organic Carbon	Microbial activity	Fungal to Bacterial Ratio	Chemical Use
Number of Samples per Soil Sample Site	1 Combined sample (consisting of at least 3 sub-samples), to be used for all four tests. *			
Minimum Measurement Target	2.5%	400 ug C/g	0.6	No detections**
Test Method	LECO Soil Organic Carbon Test	MicroBiometer in Field Test	MicroBiometer in Field Test	Gas Chromatography / Liquid Chromatography

*Where operations have been assessed as being low risk operations, chemical use testing will not be required.

**Where chemical use is detected, and this use is indicative of the chemical being present for a long period of time (due to the chemical not breaking down) this may be acceptable provided the farm regenerative plan aims to reduce the detected levels over time.

5.3.2 Continuing Requirements

1. The biodiversity plan must continue to be implemented.
2. Testing must be conducted at least annually with all measurement targets continuing to be achieved. Testing may be reduced to 5 yearly where there has been 3 years of consistent measurements meeting or exceeding target values.

5.3.3 Regression

Where the continuing requirements in 5.3.2 have not been met for two consecutive testing events (spaced between 6 months and 12 months apart) the operator will regress to the Certified In-Transition Level.