

# SUBMISSION

**EPA Waste determination discussion paper**

**5 March 2021**

# 1. EXECUTIVE SUMMARY

The Victorian Farmers Federation (VFF) welcomes the opportunity to submit in response to the EPA Waste determination discussion paper.

Animal manure and organic compost are integral by-products and inputs for the Victorian agricultural industries. Their production and use varies across the different farming systems employed in Victoria, from producers, such as feedlots and intensive agricultural systems, to end users including broad acre cropping systems and market gardens.

Animal manure and compost have been used in agriculture as fertilisers and soil improvers for centuries. The responsible use and management of animal manure and compost in the agricultural industries is supported by industry best practice, quality assurance and continued research and development. The benefits and value of animal manure and compost use in farming systems is well researched and documented.<sup>1</sup> The application of animal manure and compost can repair damaged soils, increase soil carbon, reduce soil erosion and runoff, reduce nitrate leaching, complement the use of nitrogen fertilisers and assist plant growth through the contribution of carbon, nitrogen, phosphorus, potassium and other beneficial nutrients to the soil.

Farmers employ a range of management practices when using animal manure and organic compost on farm, including: nutrient budgeting, runoff prevention, application technique and timing, soil condition monitoring and record keeping. All of these management practices are sensitive to environmental conditions, rainfall, soil type and condition, manure type and nutrient content, the cropping or pasture program and any potential environmental risks or impacts.

The VFF is concerned that the EPA Waste Determination Paper is unclear in its intent and has failed to adequately explain how a determination will regulate manures, animal wastewater, effluent and organic compost.

The EPA recognised in the discussion paper that *“To date no significant pollution incidents linked to use of manures have been reported in Victoria”*. Quite reasonably, industry ask – “Why the increased regulatory burden when there has been no demonstrated increase in risk or occurrence of pollution incidents?” While the VFF acknowledges that the intention of the EPA is a regulatory approach that is not onerous, this has been poorly communicated.

VFF believes that the EPA determination should recognise existing industry quality assurance schemes, licences and industry guidelines for the deeming of a lawful place and for other users apply risk-based specifications. These must recognise existing industry best practice with the aim of no practice change or additional record keeping being required on farms.

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<sup>1</sup> Baldock (2019), [grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2019/02/nitrogen-and-soil-organic-matter-decline-what-is-needed-to-fix-it](http://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2019/02/nitrogen-and-soil-organic-matter-decline-what-is-needed-to-fix-it); Bell (2010), [grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2010/09/nutrient-supply-by-manures-in-broadacre-cropping-systems](http://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2010/09/nutrient-supply-by-manures-in-broadacre-cropping-systems); Redden and Wallis (2015), [grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2015/08/chicken-litter-as-fertiliser-for-broadacre-grain-crops](http://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2015/08/chicken-litter-as-fertiliser-for-broadacre-grain-crops)

The VFF believe our recommendations, developed in consultation with the VFF commodity groups, our members and other industry bodies including Dairy Australia and Australian Pork Limited, are a reasonable alternative that would allow EPA to adhere to the requirements of the new EPA Act and reduce the regulatory burden imposed on farmers. The VFF makes these recommendation in line with the requirements of the Victorian Government's *Requirements and processes for making subordinate legislation*, including ensuring that a 'significant burden' is not placed on a particular industry and that the regulation is proportionate to the risk posed.<sup>2</sup>

The regulatory system must recognise the role of animal manure as a valuable input and the agricultural industry's experience and record in managing the application of beneficial products within a sensitive environment. **Without this recognition the regulatory system risks disincentivising best practice use of manure in cropping and grazing systems, potentially leading to poorer environmental outcomes.**

Our recommendations are in line with the 2019 VFF submission in response to the proposed regulations and environmental reference standards that said the regulations need to:

*"Acknowledge that soil, water and organic waste are key inputs for agriculture and that the regulations should be administered to acknowledge industry standards and processes which focus on maintaining or improving the health / condition of these resources and encourage their productive reuse."*

A risk-based approach would support the Victorian Government's 10-year circular economy policy. The use of animal manure in farming systems demonstrates how a circular economy works in the agricultural industry. It would be disappointing if the growth in the use of alternative fertilisers and beneficial products in agriculture was hampered by onerous regulation (both real and perceived).

The VFF acknowledges that the Environment Protection Amendment Act 2018 adopted the same definition for "industrial waste" as the current Environmental Protection Act 1970. VFF believes the Victorian Government erred in its adoption of this definition while imposing greater regulatory hurdles for the use of animal manures and organic compost. VFF made our concerns clear throughout the development of the Act and the regulations.

Amendment of the Environment Protection Amendment Act 2018 is a VFF priority. We request the Victorian Government and Parliament insert a classification for animal manure and organic compost that appropriately recognises its importance as an agricultural input and the extremely low risk posed by its storage, transport and use. Defining animal manure and organic compost as "industrial waste" has potential consequences in terms of community acceptance of any food or fibre grown with these natural fertilisers. Under the current definition, this food and fibre could be legitimately described as being grown using industrial waste. The harm to domestic and international markets from such statements is obvious.

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<sup>2</sup> Victorian Government, Guide to Regulation Toolkit Requirements and processes for making subordinate legislation

## 2. RECOMMENDATIONS

### 2.1. Recommendations to the EPA

#### Recommendation 1

That the EPA implement a risk-based approach that recognises existing industry quality assurance schemes, licences and industry guidelines for the deeming of a lawful place.

#### Recommendation 1 in practice:

Regulatory hurdle	Requirement
Determination	Determination recognises existing quality assurance schemes, licences and industry guidelines.  OR  If not captured above, have to meet specifications.

#### Recommendation 2

The VFF supports the proposed specifications for animal manure outlined in the discussion paper (Table 6), with the following clarification:

- Compliance with existing industry advice for ruminants as defined by Agriculture Victoria, including the 21 days withholding period.<sup>3</sup>

#### Recommendation 3

That the determination be risk-based and not inhibit industry standard practices as to the rate or mode of application of animal manure or organic compost.

#### Recommendation 4

That industry be provided the opportunity to consider draft specifications before their implementation.

### 2.2. Recommendations to the Victorian Government

#### Recommendation 5

That the Victorian Government amend the Environmental Protection Amendment Act 2018 to insert a classification for animal manure and organic compost that appropriately recognises their importance as agricultural inputs and the extremely low risk posed by their storage, transport and use.

<sup>3</sup> Agriculture Victoria, [agriculture.vic.gov.au/farm-management/soil/compost-and-farm-biosecurity](http://agriculture.vic.gov.au/farm-management/soil/compost-and-farm-biosecurity)

## 3. Existing industry quality assurance schemes, licences and guidelines

### 3.1. Chicken Meat Industry

#### **Victorian Farmers Federation Chicken Care Program**

#### **Victorian Code for Broiler Farms (2018)**

#### **National Environmental Management System for the Meat Chicken Industry – Version 2 (2014)**

#### **Land Application of Chicken Litter – A Guide for Users (2014)**

#### **EPA Victoria's Environmental Guidelines for Composting and Other Organic Recycling Facilities**

Chicken litter management is highly regulated. The NSW Warn & Inform Guidelines, which were developed in June 2016 in co-operation with RIRDC and the Chicken Care program confirm that all requirements proposed by the EPA are already part of the Chicken Care National EMS initiative and covered in its training workshops, EMP Template for farm use and in the audit checklist for growers seeking accreditation as operating under Chicken Care requirements.

The Chicken Care initiative and its audit documents are already recognised in the Victorian Code for Broiler Farms (2018) as meeting the risk management requirements in the Code.<sup>4</sup>

The vast majority of chicken meat growers in Victoria have all their spent litter documented as being removed from their farms by certified commercial composting or organic fertiliser companies who manage the risks, treat the litter and on-sell to other farmers for pasture improvement or horticultural use as fertilisers. They therefore are reducing the use/dependence of other farmers on chemical fertilisers.

Agriculture Victoria, RIRDC and other researchers have long identified these potential hazards as including pathogens, heavy metals, overuse of nutrients on soils or runoffs into surface waterways. These hazards are managed in Australia by composting of litter to destroy pathogens, control of metals in the feed formulations, defined pasture dosages, separation distances from surface waters, withholding periods for vegetables and other controls.

When required the growers also provide the composters (including Lightowlers, Philip Ould, Fowl Manure Suppliers, Statewide Recycling Services and others) or end users with copies or referral to the definitive RIRDC Publication 14-094 Land Application of Chicken Litter – A Guide for Users (2014)<sup>5</sup>. This document provides the composition of typical spent litters and recommended application rates for different pastures and crops.

<sup>4</sup> Agriculture Victoria, [agriculture.vic.gov.au/\\_\\_data/assets/pdf\\_file/0005/537782/VIC-broiler-code-2009.pdf](http://agriculture.vic.gov.au/__data/assets/pdf_file/0005/537782/VIC-broiler-code-2009.pdf)

<sup>5</sup> RIRDC, [www.agrifutures.com.au/wp-content/uploads/publications/14-094.pdf](http://www.agrifutures.com.au/wp-content/uploads/publications/14-094.pdf)

The existing controls and management by growers of spent litter / poultry manure through the Chicken Care initiative & audits in Victoria and the existing Warn & Inform Guidelines in NSW are demonstrably managing the potential hazards of the materials and allowing the long-standing benefits of their use in agriculture to be achieved.

The Chicken Meat industry continued to meet and provide data to the EPA, other Government Departments and Council representatives that clearly shows the success of current management practices.

## 3.2. Cropping industry

4. *Note: Refer to 3.3 for information regarding composting.*

### **Land Application of Chicken Litter – A Guide for Users (2014)**<sup>6</sup>

The chicken litter guide provides information for end users on understanding the characteristics of and market for chicken litter, using chicken litter to its maximum potential, safe and appropriate application rate and ensuring safe and sustainable utilisation.

The guide includes information regarding on farm storage, including ensuring a designated storage area has:

- Bunding (low retaining walls) to reduce moisture build-up and leaching
- A compacted pad, to improve handling and reduce leaching
- Fencing, to exclude cattle and sheep, which must not be allowed access to chicken litter
- Covering stockpiles is also advisable to minimise wetting and also to minimise ammonia

In determining application rates the guide refers to moisture content, nutrient content and crop or pasture requirements. The guide is sensitive to the requirements of the individual crop or pasture, environmental conditions and purpose of application.

### **Grains Research and Development Corporation (GRDC) guidance**

GRDC produces a number of guidance papers regarding the use of and benefits of manures in cropping systems, including:

GRDC, Use of Manures (2014)<sup>7</sup>

GRDC, Recycled Organic Fertiliser Fact Sheet (2010)<sup>8</sup>

<sup>6</sup> AgriFutures, <https://www.agrifutures.com.au/wp-content/uploads/publications/14-094.pdf>

<sup>7</sup> GRDC, <https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2014/07/use-of-manures>

<sup>8</sup> GRDC, [https://grdc.com.au/\\_\\_data/assets/pdf\\_file/0017/21554/grdcfsrecycledorganics.pdf.pdf](https://grdc.com.au/__data/assets/pdf_file/0017/21554/grdcfsrecycledorganics.pdf.pdf)

GRDC, Feedlot manure can provide half price nutrients (2008)<sup>9</sup>

GRDC, Subsoil amelioration – update on current research (2021)<sup>10</sup>

GRDC, Manure benefits – a case study in patience (2012)<sup>11</sup>

GRDC, Nutrient supply by manures in broadacre cropping systems (2010)<sup>12</sup>

GRDC, Chicken litter as fertiliser for broadacre grain crops (2015)<sup>13</sup>

## 4.1. Composting

### Australian Standard: Composts, soil conditioners and mulches (AS 4454-2012)

AS 4454 is the industry standard for determining compost quality. It specifies the physical, chemical, biological and labelling requirements for compost, mulches, soil conditioners and related materials. The objective of the standard includes to “facilitate the beneficial recycling and use of compostable organic materials with minimal adverse impact on environmental and public health, by avoiding biosecurity and phytotoxicity risks”<sup>14</sup>.

Other compost certification schemes include:

- National Association for Sustainable Agriculture Australia Limited (NASAA)
- Compost Australia Leaf Mark certification

Industry guidance regarding composting includes Dairy Australia’s guidance on composting on dairy farms, including making compost on dairy farms and mortality composting<sup>15</sup> and GRDC’s fact sheet on recycled organics fertiliser that seeks to provide guidance for cropping farmers, recognising the growth in interest in alternative fertilisers<sup>16</sup>. Agriculture Victoria also produces information regarding compost and farm biosecurity.<sup>17</sup>

<sup>9</sup> GRDC, <https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2008/02/feedlot-manure-can-provide-half-price-nutrients>

<sup>10</sup> GRDC, <https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2021/02/subsoil-amelioration-update-on-current-research>

<sup>11</sup> GRDC, <https://grdc.com.au/resources-and-publications/groundcover/ground-cover-issue-100/manure-benefits-a-case-study-in-patience>

<sup>12</sup> GRDC, <https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2010/09/nutrient-supply-by-manures-in-broadacre-cropping-systems>

<sup>13</sup> GRDC, <https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2015/08/chicken-litter-as-fertiliser-for-broadacre-grain-crops>

<sup>14</sup> Australian Standard: Composts, soil conditioners and mulches (AS 4454-2012) p 6

<sup>15</sup> Dairy Australia, [dairyingfortomorrow.com.au/tackling-specific-issues/composting/](http://dairyingfortomorrow.com.au/tackling-specific-issues/composting/)

<sup>16</sup> GRDC, [grdc.com.au/\\_\\_data/assets/pdf\\_file/0017/21554/grdcfsrecycledorganics.pdf.pdf](https://grdc.com.au/__data/assets/pdf_file/0017/21554/grdcfsrecycledorganics.pdf.pdf)

<sup>17</sup> Agriculture Victoria, [agriculture.vic.gov.au/farm-management/soil/compost-and-farm-biosecurity](http://agriculture.vic.gov.au/farm-management/soil/compost-and-farm-biosecurity)

## Industry guidance

Department of Agriculture (WA): Compost Production and Use in Horticulture<sup>18</sup>

### 4.2. Dairy industry

The Victorian dairy industry produces 64 percent of Australia's total milk supply across 3462 farms, with a value of \$3 billion to the local community. Dairy is an integral and important industry in many regional communities, with both farms and local processing providing local jobs and career opportunities, and benefits flowing to the local economy. In recent years, rising input costs, combined with unprecedented market and climate volatility, have undermined profitability for the Australian dairy industry. Since the early 2000s, the increase in costs has been greater than the increase in milk prices, placing significant pressure on farm profit margins. While the turnaround in current seasonal conditions has seen the industry emerge strongly in the short term, demonstrating its resilience, an additional layer of regulation for waste management is burdensome, adding another layer of cost for dairy businesses.

Effluent and compost management are currently managed through a range of regulations and guidelines from Dairy Australia, EPA, Agriculture Victoria, and Dairy Food Safety Victoria. The EPA *Waste Determination Discussion Paper* recognises that "no significant pollution incidents linked to the use of manures have been reported in Victoria", and this is likely due to the significant controls already in place.

#### Recognise existing practices and requirements

##### *Effluent*

**Appendix 1** outlines the comprehensive framework of regulations and guidelines that help dairy farmers effectively manage risks around effluent storage on farm. The dairy industry requests that the EPA continue to work closely with Agriculture Victoria and industry representatives to ensure that this current framework is reflected in the new Determination.

##### *Compost*

**Appendix 2** outlines the current framework for compost management on farm. Compost use is growing on dairy farms, with composted products being increasingly valued as a beneficial soil enhancer, as well as an effective way to process and recycle otherwise 'waste' materials.

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<sup>18</sup> Department of Agriculture (WA), [http://ausvegvic.com.au/pdf/r&d\\_VG99016\\_Compost\\_discussion\\_paper.pdf](http://ausvegvic.com.au/pdf/r&d_VG99016_Compost_discussion_paper.pdf)



The *Waste Determinations Discussion Paper* states that *‘we recognise that manures are used regularly and seen as a beneficial by-product rather than a waste. Despite the legal definition we expect the proposed determination will formally allow these practices to continue with little regulatory burden in addition to the current state of knowledge existing in the agriculture sector today.’* For this to occur, it is essential that the Draft Determinations for effluent and compost recognise the regulation and guidance set out in the two Appendices provided with this submission, and that the EPA continues discussions with the dairy industry and Agriculture Victoria.

### **Recognise the principles of the Circular Economy Policy**

The Determinations must not result in a dis-incentive for dairy farmers to continue expanding compost production and reuse of valuable nutrients in effluent materials – to do so would be a missed opportunity, but also in conflict with the Government’s new Circular Economy Policy. Indeed, re-use of both effluent and composted products on dairy farms is an example of putting circular economy principles into action.

### **Achieve consistent compliance**

Record-keeping requirements and inspections also need to take into consideration current audited on-farm systems and be consistent and not unnecessarily onerous. The new Determinations must be applied *consistently across Victoria, free from differences in interpretation*. This has not always been the industry’s experience previously and this has undermined the sector’s confidence in the regulator.

### **Work with industry to understand dairy farm enterprises**

The dairy industry can work together with the EPA to better understand farm businesses and dairy production, such that on-farm risk management is well understood at inspection. Previous experience in Northern Victoria serves as a constructive example where industry representatives worked with Agriculture Victoria to assist EPA ground staff to understand on-farm effluent systems.

### **The dairy industry recommends:**

- That EPA consult with industry and Agriculture Victoria and use the reference documents provided, to ensure the new effluent Determination recognises current practices and avoid unwarranted further requirements.
- That EPA has regard to existing dairy food safety and Quality Assurance audit requirements.
- That EPA ensures assessment of compliance is consistent across the state. In particular, field officers in regional locations need to have the same working understanding of dairy farm practices before undertaking inspection work on farm. Dairy Australia, United Dairyfarmers of Victoria and Agriculture Victoria stand ready to assist with the EPA develop workable and clear guidance to farmers about how they can acquit their General Environmental Duty.

- That EPA must continue to work with Dairy Australia and Agriculture Victoria to better understand the extent and practice of composting on dairy farms, and any potential risks to be managed. This consultation must recognise the increasing role of compost as a valuable soil additive on dairy farms, and as a recycled product in the context of the Government's *Circular Economy Policy*.

The dairy industry will continue to seek opportunities to work with the EPA and Agriculture Victoria in the development of the new Determinations.

### 4.3. Egg industry

#### **FSANZ: Standard 4.2.5 – Primary Production and Processing Standard for Eggs and Egg Products**

##### **Land Application of Chicken Litter – A Guide for Users (2014)**

##### **EPA Victoria's Environmental Guidelines for Composting and Other Organic Recycling Facilities**

Clause 5 of the national Primary Production and Processing Standard for Eggs and Egg Products states:

- (1) An egg processor must store, handle or dispose of waste in a manner that will not make the eggs or egg product unsafe or unsuitable.
- (2) For subclause (1), waste includes sewage, waste water, used litter, dead birds, garbage and eggs which the proprietor, supervisor or employee of the egg producer knows, ought to reasonably know or to reasonably suspect, are unsafe or unsuitable.<sup>19</sup>

### 4.4. Horticulture

*Note: Refer to 3.3 for information regarding composting.*

There are a number of food safety and environmental assurance systems applicable to the horticulture sector. Principle among these systems is a suite of codes developed by Freshcare Ltd. The general requirement is for an annual external audit conducted by a third party certification body.

#### **Freshcare Environmental Code of Practice (Edition 3, 2016)<sup>20</sup>**

Freshcare Environmental is an industry owned standard, created to assist horticulturalists address and demonstrate their commitment to environmental assurance.

<sup>19</sup> FSANZ, <https://www.legislation.gov.au/Details/F2011L00860>

<sup>20</sup> Freshcare, <https://www.freshcare.com.au/wp-content/uploads/Freshcare-Environmental-Edition-3-Code-of-Practice.pdf>

The storage and use of manures and composts are addressed in the Code, as is the management of land and soil.

Element E2 requires businesses to implement soil conservation practices that optimise soil organic matter and fertility. It also requires formal records are maintained and guidance is provided in the *Guidelines for Environmental Assurance in Australian Horticulture*<sup>21</sup>.

Element E5 specifically address use of fertilisers and soil additives, with auditable records required for selection, storage and management of fertilisers and soil additives. These include selection of storage sites to minimise harm to off-target and sensitive areas, calibration and maintenance of application equipment and training of workers in practices to minimise the risk of environmental contamination.

### **Freshcare Guidelines for Fresh Produce Safety (2019)**

The Freshcare guidelines for Fresh Produce Safety: F5 Fertilisers and soil additives contains specific guidance regarding fertilisers and soil additives containing manures and composting.<sup>22</sup> The purpose of these guidelines is to limit food safety risk associated with the use of manure or organic compost. The guidelines also require adherence to the Australian Standard AS4454-2012: Composts, soil conditioners and mulches (covered at Part 3.3).

Factsheet – F5 Fertilisers and soil additives can be viewed [here](#).

### **HARPS (Harmonised Australian Retailer Produce Scheme) Standard Version 2.0**

HARPS is a voluntary scheme that is the result of a Horticulture Innovation Australia Ltd project to harmonise the food safety certification requirements of the major Australian retailers. Relevant standards in HARPS include:<sup>23</sup>

- 14.3 Manure and green waste shall be treated in accordance with standard AS4454 (or equivalent international standard).
- 14.4 Where the harvestable part of the crop is grown in or within 1 metre of the ground surface or is harvested from the ground and the crop may be eaten uncooked, the following shall not be permitted on the growing site within 365 days of harvest of the crop:
  - Application of raw manure; or
  - Application of un-composted green waste; or
  - Livestock stocking.

<sup>21</sup> Freshcare, [www.horticulturefortomorrow.com.au](http://www.horticulturefortomorrow.com.au)

<sup>22</sup> Freshcare, <https://www.freshcare.com.au/wp-content/uploads/FSQ-Resources-All-Factsheets-Combined-FSQ4.2.pdf>

<sup>23</sup> HARPS, <https://harpsonline.com.au/wp-content/uploads/2020/12/HARPS-Standard-Version-2.0-141220.pdf>

Where raw manure and un-composted green waste is applied to growing sites, these shall be incorporated into the soil immediately after application, and for annual crops, prior to sowing or transplanting.

Storage sites for all raw manure and un-composted green waste shall be off-site or located, constructed and maintained to minimise the risk of contaminating produce. If on-site, storage shall be indicated on a farm map.

Equipment used to apply raw manure and uncomposted green waste shall be dedicated for this purpose or thoroughly.

- 14.5 An exemption shall be required for crops described in 14.4 for the application of raw manure and uncomposted green waste or the presence of livestock between 90 and 365 days of harvest.

An application shall be submitted and agreed with each applicable Customer individually prior to first harvest from each site.

Each single site preparation, with parameters agreed between grower and customer, shall be cleared for harvest by having a microbial product test that demonstrates *E. coli* < 10 cfu / g and Salmonella not detected in 25g.

## 4.5. Livestock industry

### Livestock Production Assurance (LPA)

The Livestock Production Assurance (LPA) program is the Australia livestock industry's on-farm assurance program encompassing the core areas of food safety, animal welfare and biosecurity. The on-farm assurance program underpins market access and provides evidence of livestock history and on-farm practices through the value chain.

It is the responsibility of LPA-accredited producers to carry out specific on-farm practices in order to produce safe red meat.

Required to undergo reaccreditation every 3 years, the process requires producers to review learning modules that cover the core food safety topics such as property risk assessments, stock foods, and pasture treatments.

Under the property risk assessment module, to comply with LPA standards producers are required to identify potential risks to the supply chain such as contaminated sites and physical contaminants. The LPA learning guides producers to understand what may be in their soils or paddocks and how best to prevent a risk to human health and food safety, including:

- Marking suspect areas on a property map
- Conducting soil tests for sites of concern
- Conducting animal fat tests of suspect sites
- Isolating contaminated sites
- Identifying compromised animals

Producers must also complete and document a risk assessment (risk assessment table and property map supplied by LPA) to ensure that they are doing all they can to prevent unacceptable levels of persistent chemical and physical contaminants entering the meat they produce. These records must be kept for a minimum of 3 years, in accordance with State legislation or for the duration the livestock are on the property, whichever is longer. Risk assessment documentation must be retained indefinitely.

The LPA accreditation program also has an extensive module dedicated to stock foods, fodder crops and pasture treatments. This guides the producer on safe livestock practices such as ensuring livestock are not fed restricted animal material (RAM). This guidance references animal manures as material that must not be fed to livestock to protect human health and products that may contain RAM (such as animal manures) must be stored separately and securely from feed that will be fed to ruminant livestock.

Under the LPA program, producers are instructed to record pasture treatments and observe withholding periods. If spreading poultry and pig manures, stock are not allowed to graze until such time that the pasture has grown up and through the manure so that the stock doesn't consume the manure.<sup>24</sup>

### **National Residue Survey (NRS)**

The National Residue Survey (NRS) is a vital component of the system in place to manage the risk of chemical residue and environmental contaminants in Australian animal and plant products. The residue monitoring which the NRS performs aims to provide an estimate of the occurrence of residues in products, confirm that residues in products are below set limits and alert responsible government authorities and industry if and when limits are exceeded so corrective action can be taken.

### **Industry guidance:**

#### **BEEF CATTLE FEEDLOTS: WASTE MANAGEMENT AND UTILISATION (Meat and Livestock Australia)**

When selecting a new utilisation area or assessing the viability of an existing utilisation area, the following should be considered

Nutrients are most efficiently removed by growing a high yielding crop that is harvested and transported from the site. Thus the area should either be able to produce dryland crops reliably or should be irrigated.

Select areas with good agricultural soils (e.g. adequate nutrients, plant available water capacity) with no serious limitations to plant growth (e.g. no subsoil constraints, not prone to salinity, waterlogging or flooding). The land should have a suitable topography for cropping (not steeply sloping). The utilisation area needs to be large enough to spread the nutrients in the wastes at sustainable levels. While it may be possible to use land with some significant limitations, this will require increased land area and/or management.

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<sup>24</sup> Livestock Production Assurance (LPA), <https://www.integritysystems.com.au/globalassets/isc/pdf-files/lpa-documents/lpa-factsheets/stock-foods-fodder-crops-grain-and-pasture-treatments-factsheet-and-checklist.pdf>

Grazing removes nutrients at a slow rate and is not a preferred land use for utilisation areas. In addition, the recommended withholding period between effluent irrigation or manure spreading and grazing by stock is 21 days<sup>25</sup>.

Provide buffers between utilisation areas and watercourses, and unprotected aquifers (e.g. shallow water table covered by permeable soil).

Provide adequate separation distances to nearby sensitive uses. Distance between utilisation areas and sensitive land uses such as residences and public amenity areas allows odour to disperse and reduces the likelihood of odour nuisance.

### **Safe Use of Manure and Effluent – A Technical Users Manual (Meat and Livestock Australia, 2002)**

This document discusses the recommended practices for sustainable utilisation of wastes including nutrient budgeting and guidelines for use regarding application rates, spreading, and protection of environment and water courses.<sup>26</sup>

### **Guidelines for using poultry litter or other restricted animal materials on pasture (Department of Primary Industries WA)**

If a producer wants to spread manure, fertiliser or compost that may contain restricted animal material on pasture or paddocks that ruminants graze they should follow these guidelines:

- Incorporate the material into the soil or spread it thinly.
- Do not allow ruminants to graze treated pastures for at least three weeks. If the growing conditions are poor then stock will need to be excluded for longer until there has been significant regrowth to prevent stock ingesting any of the material.
- If you provide manure or litter directly to other properties, you should ensure they understand these requirements<sup>27</sup>.

### **Fertilisers for Pastures (NSW DPI)**

Unless highly treated, most wastes require a quarantine period of at least three weeks after application before grazing occurs. Animals must not have access to organic waste stockpiles<sup>28</sup>.

### **Best practice guidelines for using poultry litter on pastures (NSW DPI)<sup>29</sup>**

<sup>25</sup> Meat and Livestock Australia, [https://www.mla.com.au/globalassets/mla-corporate/research-and-development/program-areas/feeding-finishing-and-nutrition/manure-handbook/section-5-utilisation-of-manure-and-effluent-2016\\_07\\_28.pdf](https://www.mla.com.au/globalassets/mla-corporate/research-and-development/program-areas/feeding-finishing-and-nutrition/manure-handbook/section-5-utilisation-of-manure-and-effluent-2016_07_28.pdf)

<sup>26</sup> Meat and Livestock Australia, [https://www.mla.com.au/contentassets/9481d2597dc241a8b564d2a465ac7308/flot.402\\_final\\_report.pdf](https://www.mla.com.au/contentassets/9481d2597dc241a8b564d2a465ac7308/flot.402_final_report.pdf)

<sup>27</sup> Department of Primary Industries (WA), <https://www.agric.wa.gov.au/livestock-biosecurity/prevent-ruminants-accessing-chicken-litter-and-organic-fertilisers-containing>

<sup>28</sup> Department of Primary Industries (NSW), [https://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0008/166562/Fertilisers-for-pastures.pdf](https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/166562/Fertilisers-for-pastures.pdf)

<sup>29</sup> Department of Primary Industries (NSW), [https://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0004/140359/Best-practice-guidelines-for-using-poultry-litter-on-pastures.pdf](https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0004/140359/Best-practice-guidelines-for-using-poultry-litter-on-pastures.pdf)

## CN2030 (Carbon Neutral 2030)

The Australian red meat industry has a number of industry objectives and initiatives that centre around continues improvement in the areas of environmental stewardship and sustainability. For example, Meat and Livestock Australia are working with Australia producers to deliver better outcomes for the environment and consumers under their Carbon Neutral 2030 initiative.

Meat & Livestock Australia, in collaboration with industry, government and research partners, is investing in research, development and adoption projects to enable industry to move toward the CN30 target. It is well documented that the use of manure and recycled organic materials on pastures is considered the practice with greatest potential to increase soil organic carbon levels. To assist the red meat industry in meeting these objectives, valuable products such as natural fertilisers from animal waste must be readily accessible to the Victorian producer to encourage uptake and utilisation<sup>30</sup>.

## 4.6. Pig industry

### Australian Pork Industry Quality Assurance Program (APIQ)

The Australian pork industry is supported by a range of industry systems that underpin our product integrity. Existing programs cover traceability via PigPass, demonstration of responsible farming via industry's Quality Assurance Program (APIQ<sup>✓</sup>®), adherence to food safety via the National Residue Survey (NRS) and SAFEMEAT.

PigPass is the national traceability system which provides information on the movements of pigs in Australia. PigPass is designed to link pigs to a property of origin using a Property Identification Code (PIC), registered pig identification (ear tags and/or tattoos), and pig movement documentation (the PigPass National Vendor Declaration (NVD)).

APIQ<sup>✓</sup>® is industry's voluntary Quality Assurance Program that provides the framework and standards by which Australian pig producers can demonstrate to the community and customers that they are responsible farmers who care for their animals, the environment and their customers, by following safe and sustainable practices.

These programs have been developed to protect Australia's reputation as a supplier of high quality, safe, hygienic product and demonstrate Australia's commitment to meat safety through the rigorous standards and systems.

About APIQ:

- APL supports APIQ<sup>✓</sup>® to provide the framework and tools for pig enterprises to demonstrate their high standard of practice for food safety, traceability, animal welfare, biosecurity, environment, transport and management.

<sup>30</sup> Meat and Livestock Australia, <https://www.mla.com.au/globalassets/mla-corporate/research-and-development/documents/cn30-information-sheet-final.pdf>

- Through APIQ<sup>✓</sup>®, with APIQ<sup>✓</sup>® Certified producers responsible for some 90% of production
- Australian pig producers can demonstrate to the community and customers that they are socially responsible farmers who care for their animals, the environment, and their customers, by following safe and sustainable practices.
- the industry's food safety (i.e. human health) risk is well managed with a robust and proven risk management strategy;
- APL works with producers to build consumer, supply chain and regulator trust and confidence in the industry's produce, the industry as a whole and in APL;
- industry has an independently audited and demonstrable proof of the industry's commitment and credentials in the areas of quality assurance and animal welfare;
- industry promotes good agricultural practice and commitment to continuous improvement, including coverage for emerging and changing risks and practices on farm as they are identified;
- industry has a valuable marketing tool in strengthening the brand quality of Australian Pork – both in the domestic and export markets; and
- APL helps to instil a sense of pride among all participants and others in the industry.

#### Industry guidance:

APL, Getting the Best Value from Manure Nutrients (2015)<sup>31</sup>

National Environmental Guidelines for Indoor Piggeries (NEGIP)<sup>32</sup>

National Environmental Guidelines for Rotational Outdoor Piggeries (NEGROP)<sup>33</sup>

## 4.7. Other

### National Agricultural Manure Management Program (coordinated by APL)

The National Agricultural Manure Management Program funded projects aimed at filling the research gap in manure management research. Funded projects included:

- Mitigating the greenhouse gas potential of Australia soils amended with livestock manure – The University of Western Australia, Sasha Jenkins
- Advancing livestock waste as low emissions-high efficiency fertilisers – Queensland Department of Agriculture, Fisheries and Forestry, Matt Redding
- Pork greenhouse gas mitigation – Feedlot Services Australia Pty Ltd, Eugene McGahan
- Poultry greenhouse gas mitigation – Feedlot Services Australia Pty Ltd, Stephen Wiedermann
- Anaerobic treatment for emissions reduction from solid manure residues – University of Queensland
- Composting as a means of minimising greenhouse gas emission from the manure supply chain – Queensland University of Technology

<sup>31</sup> APL, [http://australianpork.com.au/wp-content/uploads/2013/10/BMP01\\_GBVMN\\_04\\_lr.pdf](http://australianpork.com.au/wp-content/uploads/2013/10/BMP01_GBVMN_04_lr.pdf)

<sup>32</sup> APL, [http://australianpork.com.au/wp-content/uploads/2018/08/NEGIP\\_2018\\_web.pdf](http://australianpork.com.au/wp-content/uploads/2018/08/NEGIP_2018_web.pdf)

<sup>33</sup> APL, [http://australianpork.com.au/wp-content/uploads/2016/07/NGforOP\\_2013\\_22\\_lowres.pdf](http://australianpork.com.au/wp-content/uploads/2016/07/NGforOP_2013_22_lowres.pdf)



## 5. Case studies

### Grain producer

We are dryland broadacre cropping farmers, producing cereals, oilseeds & grain legumes.

We purchase over 5000 cubic metres of duck shed clean out material annually, spreading a thick mat over our loamy/sandy country to improve the organic matter in the soil. The clean out material has a high percentage of wood chips/saw dust. Spread on the paddocks, it works like garden mulch, reducing the rain run off & conserving moisture in the soil. We believe we are growing bulkier crops producing greater yields.

Most of the duck sheds in our area are on small holdings, so they have little choice but to dispose of this material off their farms.

While we believe we are gaining a benefit from using this product, the costs do add up & it is a very time consuming exercise. We have found spreading the litter at about 20 cubic metres/hectare produces a good ground covering. After several years we now have the right infrastructure to do the job in a timely manner. A walking floor semi-trailer, a tele-handler with a large volume bucket & a purpose built manure spreader. One semi load, about 70 cubic metres, covers about 3.5 hectares.

If the EPA choose to bring in rules & regulations on using this litter, we would be forced to give up our program, we are not interested in dealing with more "red tape".

This then creates another issue for the duck producers.

We invite the EPA & any other interested party to our farm to have a look at our practices & discuss the issues that concern them.

### Mixed farmer

We have a farm in western Victoria and like a lot of farmers are very concerned about climate change but also very interested in trying to be a part of the solution so we are embarking on a carbon project with the federal government.

Compost is a major part of our management change and we are just getting ready to make our own compost and this change (from the EPA) is thrust upon us. We are talking hundreds of tonnes for our use. It does also include manure from a couple of silage pits, or maybe we should just call it silage waste!

This change I would have thought is totally unnecessary and just a red tape exercise.

### **Egg producer**

We are egg producers, over 3 sites with over 550,000 laying hens and would produce on average 550 metre fowl manure per week. Some of those sheds are cleaned every 60 week, an example is a 25,000 bird shed removes about 600 cubic metres of manure one a year.

For 3 generations we have spread ALL our manure on pasture on local dairy farmers and some horticulture as well.

My concern is this valuable manure is now a product the farmers will be unable to use, or simply too hard to use as the restrictions will be difficult to navigate. Therefore we will have a product with zero value, going to where? Landfill at a huge unnecessary expense.

### **Horticulture farmer**

We are an organic mixed horticulture in northern Victoria.

We use over 2000 tonnes of compost, utilising a wide range of manure including; chicken, cow, horse, ducks and pigs.

We use a specialised imported machine to assist with proper pasteurisation of our blend and to ensure that a high quality compost is created with proper pathogen control. Which are all checked as part of our Quality Assurance processes e.g. HARPS and Freshcare.

We believe the use of composts is an effective way to reduce environmental impacts, including reducing agricultural waste, nitrate leaching, and adding carbon back to the soil.

Increased costs of compliance, regulations, and paperwork fatigue will all reduce uptake and use of composts and have unintended negative environmental impacts.

### **Pig Producer**

We are pig producers with conventional sheds and eco shelters. Our industry is heavily regulated and our world class QA program covers manure management and our environment.

For our industry pig manure is a valuable resource, not industrial waste. Organic and regenerative farming both rely heavily on animal manure. Liquid manure is irrigated with water to grow winter crops or hay on paddocks with a reuse system and solid manure is stockpiled and used as fertiliser in horticulture and gardens.

Eco shelter bedding is stockpiled and then used as fertiliser for winter crops. All of these systems don't occur monthly, only at certain times of the year.

To further discuss this submission please contact VFF Stakeholder, Policy and Advocacy Manager Luke Hooke on 0428 288 909 or at [lhooke@vff.org.au](mailto:lhooke@vff.org.au).

Emma Germano  
President  
**Victorian Farmers Federation**

# Appendix 1:

## Current Best-Practice Effluent Management on Dairy Farms

Effluent Management on dairy farms, including collection, storage and application, is managed through a range of guidelines and technical standards. These have been developed through close cooperation between farmers, Dairy Australia, United Dairyfarmers of Victoria, Agriculture Victoria, EPA, the fertiliser industry, and Dairy Food Safety Victoria. The following documents set out this advice for dairy farmers.

In its *Determinations Discussion Paper*, the EPA has recognised that the dairy industry manages effluent well. As a result, the dairy industry recommends that current management processes and standards form the basis of the new *determination* for effluent. Doing so will ensure that no new onerous requirements are placed on farmers who are already managing risks effectively.

### Guidance Documents for Farmers

#### Management of Dairy Effluent, 2008 DairyGains Victorian Guidelines

- These guidelines provide dairy farmers and service providers in Victoria with a clear and concise overview of their environmental management requirements and industry expectations in regard to effluent management.
- The information in these guidelines is a collation of the existing environmental requirements and examples of best management practises that apply to both established and new dairy farms. The guidelines focus on the outcomes expected from legislative requirements and industry and provide practical examples in each section on how this can be achieved. This focus takes into account that each farm is unique with different individual circumstances such as physical, financial and management preferences. All farms should achieve the objectives but how they achieve this is up to the individual. Farmers are encouraged to look at all options or strategies in order to meet the objectives taking into account what is best for their farm.
- The guidelines do not provide technical information, but instead provide links to the technical documents for each aspect of on-farm management, including the following key resources:
  - [Effluent and Manure Management Database for the Australian Dairy Industry](http://www.dairyingfortomorrow.com). (www.dairyingfortomorrow.com) A technical information resource for effluent management and reuse. A nationally accepted resource to provide the basis for extension and education programs, technical information to support regulation on environmental protection and practical design for on farm effluent systems.
  - [Department of Primary Industries](http://www.dpi.vic.gov.au) Information – Notes Series Dairy Effluent Management (www.dpi.vic.gov.au) A range of information notes on the technical design aspects for dairy effluent systems as well as application principles.

- [DairySAT](http://www.dairyingfortomorrow.com) (www.dairyingfortomorrow.com) A self-assessment tool assisting farmers to be pro-active in addressing environmental issues associated with their own farm .
- [Dairy Cattle Feedpad Guidelines](http://www.gbcma.vic.gov.au) for the Goulburn Broken Catchment (www.gbcma.vic.gov.au) Fundamental guidelines assisting farmers undertake the development of dairy cattle feedpads.
- [WorkSafe Victoria](http://www.workcover.vic.gov.au) — Dairy Safety: A Practical Guide ([www.workcover.vic.gov.au](http://www.workcover.vic.gov.au))
- Australian Dairy Farmers, [DairyGains](http://www.australiandairyfarmers.com.au) (www.australiandairyfarmers.com.au)

### **Collection and Storage of effluent**

Collection and storage of effluent on-farm is managed through guidelines developed by Agriculture Victoria. Agriculture Victoria actively works with dairy farms to ensure they are meeting these guidelines and managing their effluent safely. Agriculture Victoria also actively works with EPA to assist EPA Officers to better understand effluent systems so that they can more effectively enforce EPA Regulations related to effluent management. Dairy Food Safety Victoria has also played a role in auditing of effluent ponds on dairy farms and many milk processors have their own environmental programs that incorporate effluent management and are audited as part of the company requirements.

## Agriculture Victoria

- Agriculture Victoria provides an extensive collection of up to date resources ranging from technical notes, dairy guidelines, agronomic research trials, design toolkits, videos, articles, planning platforms, supports a technical engineering database and training packages covering all aspects of effluent and manure system design and management as well as on-farm services including nutrient sampling, effluent utilisations plans, effluent system health checks, farm development planning and mediation
- Agriculture Victoria supports the current industry focus shift away from a waste mentality to a resource utilisation approach.
- The Agriculture Victoria website provides an extensive range of [resources](#) for managing effluent streams on dairy farms, including managing dairy shed effluent, pond design and management, composting spoiled hay, and application of effluent to pastures.
- Agriculture Victoria officers also provide one-one-one assistance to farmers to assist with designing and managing their systems.
- Farmers are able to access Agriculture Victoria extension services to assist with effluent management through regional offices in Echuca, Ellinbank, Leongatha, Maffra, Tatura or Warrnambool.



Fig 1: Agriculture Victoria's website provides advice and guidance on a comprehensive range of topics for managing dairy environmental and human-health risks.

## Dairy Food Safety Victoria

Dairy Food Safety Victoria (DFSV) is the Victorian regulator for food safety in the Victorian dairy sector. As with the new model of environment protection to be implemented under the revised Environment Protection Act, DFSV supports a risk-based regulatory model that is proportionate in its approach. DFSV's Statement of Expectations outlines a desire to work with other Victorian dairy regulators to establish a better understanding of emerging risks and practical risk mitigation options.

Dairy Australia (DA) understands that DFSV has previously had a Memorandum of Understanding (MOU) with EPA to undertake auditing functions for effluent systems while carrying out auditing under their own remit. DA has been unable to obtain further detail about the outcomes of this MOU, however it suggests a potential for efficiency that should be further examined by the EPA with respect to applying the new regulatory regime.

## **Application of effluent to land on-farm**

A 2020 Dairy Australia survey found that 91% of dairy farms were applying effluent paddocks (up from 86% in 2015)<sup>1</sup>, with nutrient testing of effluent prior to application continuing to trend upwards. Effluent is a valuable source of fertiliser for feed production. This practice is guided by a range of tools which aim to ensure that pasture nutrient requirements are met, while avoiding issues of nutrient runoff pollution. Farmers recognise that getting nutrient needs right means savings on-farm and in 2020 the vast majority of farms (87%) reported that they determine nutrient requirements through soil testing<sup>34</sup>, prior to application of any additions, which assists in managing risks associated with soil additions.

## FertSmart Program

- This program is designed to lift the skills and knowledge of anyone involved in the supply of fertilizer and soil ameliorant products. It ensures that high quality advice is passed on to farmers, allowing them to optimise productivity while minimising environment and food safety risks. Fertcare provides high quality training for all, and robust quality assurance of advisors to ensure standards are met and skills continuously improved.
- Fertcare® technical standards for nutrient management planning on Australian dairy farms [Dairy Australia, Agriculture Victoria], November 2020 [available on request – update will be published online very soon]
  - o Helps dairy farmers develop a *dairy farm nutrient management plan*, to ensure efficient and safe application of soil additions, including effluent and imported fertilisers.

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<sup>34</sup> 2020, Dairy Australia, *Land Water and Carbon Survey* (unpublished)

**Recommendations:**

- EPA must consult with Agriculture Victoria and use the reference documents provided to ensure the new Determination allows current practices to continue with no unnecessary changes or further onerous requirements for paperwork for on-farm practice.
- EPA must streamline any auditing systems in recognition that dairy farms are already subject to extensive inspections, including by the regulator Dairy Food Safety Victoria.
- EPA must ensure that field officers have a sufficient working understanding of dairy farm practices before undertaking audit and inspection work on farm. Dairy Australia, United Dairyfarmers of Victoria and Agriculture Victoria will be able to assist with an education program to ensure this occurs.

## Appendix 2:



# Current Best-Practice Compost Management on Dairy Farms

Compost is increasingly seen as a valuable soil addition on farm, with 43% of farms self-identifying as using compost in 2020, up from 32% in 2015<sup>35</sup>.

Given this increasing usage, it is important to gather further knowledge about composting processes on dairy farms as the Determination is developed. The dairy industry recommends EPA engage further to develop the knowledge required to build regulatory arrangements in a way that appropriately balances environmental protection with the way farmers use this valuable recycled resource in the food production system.

## Production and application of compost

### Dairying for Tomorrow - Composting

- The Dairying for Tomorrow program, developed by Dairy Australia in conjunction with Agriculture Victoria, includes a range of comprehensive resources to assist dairy farmers to compost safely on-farm. This includes guidance on making compost and [composting of mortalities on-farm](#).
- The composting guidance for dairy farmers recommends matching compost nutrients to target paddock requirements by nutrient testing both the compost and the paddock, and adding additional nutrient materials to compost as required. This includes a suggestion that compost should nutrient tested when processing is complete. This helps manage soil nutrient loads and avoid nutrient run-off into the environment.

Existing resources:

- [Composting – is it for my farm?](#)
- [Making compost on dairy farms](#)
- [Understanding purchased compost products](#)
- [Composting of dairy cattle mortalities](#)
- [Mortality composting – training manual](#)
- [Minimising Gaseous Nitrogen Losses](#)

### Agriculture Victoria – Composting Spoiled Hay

- Sometimes rain and flood can cause spoilage of stored hay, and Agriculture Victoria provides guidelines for safe composting of this product.

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<sup>35</sup> 2020, Dairy Australia, *Land, Water and Carbon Survey* (unpublished)

**Recommendation:**

- That EPA must continue to work with Dairy Australia and Agriculture Victoria to better understand the extent and practice of composting on dairy farms, and any potential risks to be managed. This consultation must recognise the increasing role of compost as a valuable soil additive on dairy farms, and as a recycled product in the context of the Government's Circular Economy Policy.

## The Victorian Farmers Federation

Victoria's agricultural production accounts for over \$13 billion of Victoria's economy and over 25 per cent of the State's exports per annum. Victoria's farmers produce high quality food and fibre, produced to high standards of safety, with little taxpayer support, and to some of the strictest environmental and highest animal welfare controls in the world.

The Victorian Farmers Federation (VFF) represents a farming community which creates a profitable, sustainable and socially responsible agriculture sector connecting with consumers.

We have a proud history representing Victoria's farm businesses since 1979 – primarily family farms that produce the eggs, grain, fruit and vegetables, meat, and milk that help to feed Victoria's six million people, and the bigger global community, every day.

The VFF consists of commodity groups: dairy (United Dairyfarmers of Victoria), grains, horticulture (including Flowers Victoria), intensives (chicken meat, eggs and pigs), and livestock, expert committees representing; water, land management and farm business and rural development and the VFF Industrial Association (VFFIA).

Our purpose is to make Victorian farmer's lives better; enhancing Victoria's future.

Our mission is to ensure a community of farmers creating a profitable, sustainable and socially responsible agricultural industry connecting with all Victorians.



## Our place in Victoria



### What we do



- Victoria's **20,775 farms** cover **10.6 million** hectares
- We are **24.2%** of Australian farmers
- **91%** family operated, with only **2%** foreign owned



- We employ **87,800** people mostly in regional areas
- **\$4739** of food consumed each year by every Australian
- As a net exporter we have long term food surity







- Our annual production is **\$13.16 billion**, **3.5%** of Victoria's economy
- **27.8%** of Victoria's exports are agricultural product valued at **\$11.9 billion**

### How we do it



-  Farmers invest **\$80 million** in R&D
-  Every R&D **\$1** converts to **\$12** in farmer generated impact
-  **2.7%** productivity growth through innovative efficiency gains
-  Farmers receive less than **1.5%** in government support



-  **63%** reduction in greenhouse gas emissions between 1996-2016
-  Water consumption reduced by **7%** from 2014-2015
-  Land conservation has increased to **18%** of total land mass.
-  Farmers spend **\$20,000** annually on feral animals and pest weeds



-  **3.5 million** beef cattle
-  **140 million** chickens
-  **1.1 million** dairy cows producing **6.186 billion** litres of milk
-  **65,992** sows
-  **13.1 million** breeding ewes and a fleece clip of **66,100 tonnes**
-  **6.5 million** tonnes of grain
-  **\$2.35 billion** in horticultural production