

Rules and regulations that govern manure management and composting

Janine Price

Principal Consultant Environment and Regulation
Scolexia Pty Ltd

1



Regulations governing manure management and
composting

Janine Price-Principal Environmental Consultant,
Scolexia- animal and avian health

2

Overview-Queensland



- Background
- Regulatory authorities and decision makers
- When a waste becomes a product
- Classification of wastes
- Regulations
 - Composting Production
 - Compost Reuse
 - Manure
 - Effluent
 - Digestate
 - Mortalities
- RAM Considerations
- Barriers and Opportunities
- Guidance materials



Source: APL

Background



All states have organic waste processing requirements



Requirements often not relevant to on farm operations, not commensurate with risks, or incorrectly applied



Commercial and higher risk operational requirements can create onerous and \$\$\$ requirements for producers and limit market opportunities and/or fertiliser benefits



Triggers for requirements can relate to feedstocks (input materials), source of feedstock (on or offsite), where it reused (on or offsite) and whether its part of an existing licenced facility



Some regulations allow exemptions for production and use- can be ambiguous

Background cont.



- The following information is an interpretation of the regulations provided in QLD
- Individual interpretation and application may differ.
- For site specific requirements, please contact your local decision makers/regulators.



Source: APL

5

The Why?



- Knowing your regulations will:
 - minimise potential investigation actions,
 - minimise environmental and amenity (community) impacts and
 - maximise benefits from the fertiliser and soil conditioning properties.



Source: APL

6

Regulatory Authorities and Decision makers – Queensland

Local Government

- Development approval (code or impact assessment)

Department of Environment and Science (DES)

- Legislation and Policies
- Waste classifications and management
- End of waste framework (EOW)
- Guidance- Composting Guidelines (focus-Commercial facilities)

Department of Agriculture and Fisheries- Livestock regulation

- Approvals for Environmentally Relevant Activities (ERA's)- Operating licences (EA)
- Compliance
- Guidance

Local Government

- Likely captured under existing ERA ie extensive or intensive if generating own materials
- If bringing in offsite materials for composting- likely development approval required
- Impact assessed
- Contact your local government- *get response in writing*

Land use term	Definition	Included in
<i>High Impact industry</i>	Manufacturing soil conditioners by receiving, blending, storing, processing, drying or composting organic material or organic waste, including animal manures, sewage, septic sludges and domestic waste	

When a waste is deemed no longer a waste-DES

- No specific definition of when a waste is no longer a waste, however QLD have the End of Waste Framework (EOW)
- Framework promotes resource recovery opportunities and aims to transform the perception of waste from being seen as waste to being valued as a resource.
- A waste can be approved as a resource if the Department of Environment and Science considers that it meets specified quality criteria for its specific use.
- If a waste is approved as a resource under the EOW framework, it is **no longer considered a waste** under section 13 of the Environmental Protection Act 1994.
- If the resource is not used in accordance with the EOW code or approval, it is deemed to be a waste.
- There is a EOW code for Digestate and Paunch
- There is currently no EOW for Compost, Manures, Effluent or Carcasses

9

Classification of Waste Products

- Under the *Environmental Protection Regulation 2019 (the Regulation)* a risk-based waste classification framework is used where regulated waste is classified as either:
 - category 1 regulated waste (highest risk)
 - category 2 regulated waste (moderate risk)
 - not-regulated waste/general waste (lowest risk).
- The regulated waste classification provisions in the Regulation are used to identify and appropriately manage the risks associated with various wastes and related waste management activities.

10

Classification of Waste Products



- Compost: of organic material, includes mixing the organic material to manufacture a soil conditioner.

organic material means—
➢ (a) animal matter, including, for example, dead animals, animal remains and animal excreta;
➢ (b) plant matter, including, for example, bark, lawn clippings, leaves, mulch, pruning waste, sawdust, shavings, woodchip and other waste from forest products; or
➢ (c) organic waste.

organic waste—
➢ (a) includes the following—
➢ (i) a substance used for manufacturing fertiliser for agricultural, horticultural or garden use;
➢ (ii) animal manure;

Not-regulated waste/general waste (lowest risk).

- Manure

Not-regulated waste/general waste (lowest risk).

- Effluent

Regulated Waste, Category 2-animal effluent and residues, including abattoir effluent and poultry and fish processing wastes

Classification of Waste Products



- Digestate- no specific definition- likely captured as a category 2 as per liquid effluent.



Source: Blantyre farms



Source: WRAP

Compost Production



ON Site	OFF Site
<p>No ERA requirements if composted at the site where it was produced; or transported to another site, where agriculture or livestock production is carried out, and composted at that site;</p> <p>No additional ERA 53 if the composting of organic material at a site if an activity to which section 2, (Feedlotting) 3 (Pig keeping) or 4 (Poultry farming) applies is carried out at the site. Ie if already have a ERA for those activities</p> <p>General GED</p>	<p>No ERA 53 approval required if agriculture or livestock production on site. General GED</p> <p>ERA 53 approval is required if over 200T of organic material is composted in a year.</p> <p>Composting guidelines required.</p>



Compost Reuse



ON Site	OFF Site
<p>Compost is deemed a not-regulated waste/general waste (lowest risk) as not captured in the regulations.</p> <p>Use in accordance with GED</p>	<p>As per ON Site</p>



Manures/bedding



ON Site	OFF Site
<p>Not-regulated waste/general waste (lowest risk). No EA required</p> <p>Manure can be reused under scheduled premise licence or consent</p>	<p>As per ON Site</p>



Effluent



ON Site	OFF Site
<p>Category 2 regulated waste (moderate risk)</p> <p>An EA is required to reuse effluent and residues on site.</p> <p>This could be through a existing licence ie pig farming licence</p>	<p>An EA (licence) will be required to receive liquid effluent generated offsite</p> <p>Effluent will need to be transported in a licenced vehicle unless small quantities of 250kg or less are self hauled.</p> <p>Trackable waste</p>



Digestate Reuse



ON Site	OFF Site
EA required for the process that generates the digestate ie anaerobic digestion EA53 unless as part of another licenced premise ie piggery	As per ON Site
EOW code requirements can be used for digestate reuse or	
EA required for reuse if it does not meet EOW specifications	



Source: Wrap

End of Waste Code- Digestate (EOWC010001054) *Waste Reduction and Recycling Act 2011*



- The EOW code for digestate, states when digestate becomes a resource and any relevant requirements and/or conditions for its use.
- If the resource is not being used in accordance with the relevant requirements and/or conditions of the EOW code, or another type of permit that allows for its use, it is considered a waste (under section 13 of the *Environmental Protection Act 1994* (EP Act)) and must be disposed of appropriately at a facility that is lawfully able to receive the waste.
- An Environmental Authority (EA) is required where an activity being undertaken triggers the threshold for any environmentally relevant activity (ERA). ie treat or processing waste to meet the resource quality criteria under the EOW code
- EOW code is limited to digestate consisting of material that is left over following the anaerobic digestion process and is a wet mixture (whole digestate) that usually separated into a solid (solid digestate) and a liquid (liquid digestate).
- The digestate becomes a resource when the requirements and conditions under this EOW code are met.

End of Waste Code-
Digestate
(EOWC010001054)
*Waste Reduction and
Recycling Act 2011*

- Prior to operating under the EOW code, the producer of the resource must register with the chief executive by giving a notice in the approved form to become a registered resource producer.
- The registered resource producer must not use, sell or give away the resource under the EOW unless the resource complies with all of the following criteria and quality characteristics: such as 'maximum permissible concentration of impurities' for fertilizer and only contain the following materials are used as feedstocks for the digestate:
 - paunch
 - organic material from agricultural and livestock production
 - liquid digestate iv. green waste sourced only from municipal kerbside collection schemes v. food waste and food processing waste including pet food and beverage manufacturing waste
 - cardboard and paper waste
- Prior to being applied to land or sold to resource users, the digestate undergoes pasteurisation.
- Producers of the digestate must undertake resource monitoring in a NATA accredited laboratory, every 6 months and meet the resource quality criteria and resource quality as specified in the EOW.
- Prior to operating under the EOW code, a person who intends **to use** the approved resource must notify the chief executive by giving a notice in the approved form at least 10 days prior to the commencement of using the resource.

19

End of Waste Code-
Digestate
(EOWC010001054)
*Waste Reduction and
Recycling Act 2011*

- **Approved uses**
 - a) as a feedstock in the manufacture of compost; and/or
 - b) as a soil conditioner and/or fertiliser on agricultural land.
- **Resource use as a soil conditioner and/or fertiliser**
 - a) the resource must only be applied to agricultural land in accordance with the direction of an appropriately qualified person;
 - b) the resource application must be conducted at an agronomic loading rate which considers the resource composition, crop nutritional demand, soil characteristics and terrain characteristics of the site of use
 - c) precision application and/or direct injection must be used to prevent odour nuisance, surface ponding and runoff of the resource; and
 - d) percolation of the resource beyond the plant root zone must be minimised.
- **Resource use as feedstock in the manufacture of compost must only be carried out at:**
 - a) an appropriately licensed facility in accordance with the relevant environmental authority held by the resource user.

20

Mortalities



ON Site	OFF Site
<p>animal effluent and residues, including abattoir effluent and poultry and fish processing wastes is a Category 2 waste – regulated waste</p> <p>Carcasses are considered animal residues and are therefore Category 2 regulated waste.</p> <p>Need an EA to reuse mortalities through an existing licence on site.</p>	<p>Will need an EA to receive carcasses from offsite</p>



Source: Agriculture Victoria

Restricted Animal Material (RAM)



RAM (Restricted Animal Material) is defined as

- meat,
- eggs,
- meat and bone meal,
- blood meal,
- poultry offal meal,
- feather meal,
- fishmeal or
- any other animal meals or manure.
- It does not include tallow, gelatine, milk and milk products.

- Australia has an inclusive ban on the feeding to all ruminants of all meals, including meat and bone meal (MBM), derived from all vertebrates, including fish and birds.
- Appendix 5 of the – Australian Ruminant Feed Ban National Uniform Guidelines 2019-20 outlines the requirements for managing the risk of RAM ingestion (organic fertilisers, composts and food wastes).
- It includes guidelines for use of organic fertilisers/composts/soil amendments on ruminant pastures and information about recycling of food waste that contains RAM on agricultural land.

RAM Cont.



- A product is considered to contain RAM if it contains or may contain any of the following (AHA, 2019):
 - Animal protein – including whole or partial carcasses, feathers, or sloughing e.g. all poultry litter/manure and feeds or fertilisers containing poultry litter/manure are considered to contain RAM.
 - Spilt stock feed containing RAM e.g. all manures and effluent arising from animals (usually poultry, pigs and farmed fish).
 - Manure/faeces containing RAM that has passed undigested through the gut e.g. all manure or effluent from animals that are fed RAM are considered to contain RAM.
 - Blood and bone fertiliser, or other products including blood, meat, animal waste or bone.
 - Mushroom compost or any other compost containing products containing RAM (e.g. containing poultry manure and/or mortalities, blood and bone, abattoir waste, or food waste that contains animal material including but not limited to grease trap waste, food organic, green organic (FOGO) kerbside bin waste, and pet food
 - Food waste that contains RAM
 - Any other product that might reasonably contain a RAM ingredient.

23

Ram Considerations



- The use of products that contain RAM in areas accessed by ruminants (e.g. applications of some fertilisers or effluent to paddocks) poses a low but not nil risk of TSE transmission that must be mitigated. This includes the possibility of illegally imported meat being placed in food organic, green organic (FOGO) kerbside bins, which may be used as a feedstock for compost (AHA, 2019).
- Options for mitigating the biosecurity risks associated with use of organic fertiliser products containing RAM include:
 - Ensure ruminants do not have access to heaped piles of products containing RAM (e.g. exclude ruminants from organic fertilisers piled for storage or composting or piles of poultry litter).
 - Incorporate (turn) organic fertilisers containing RAM into the soil OR spread the product (e.g. organic fertilisers containing RAM) evenly AND prevent ruminants from having access to treated areas until a combination of rain or irrigation and pasture growth has minimised the risk of RAM ingestion when grazed by ruminants.
- As a guide – excluding ruminants from treated pasture for 3 weeks may allow for sufficient pasture growth to adequately minimise the risk of RAM ingestion; however longer periods of ruminant exclusion are required when pasture growth or rainfall are low (AHA, 2019).

24

Barriers and Opportunities

- Use of word waste and disposal – negative connotations
- No clear guidance on when a waste is no longer a waste
- Applying commercial composting regulations on farms does not take into account how risks differ to commercial use ie rural isolation, minimal human interaction, known organic feedstocks, withholding periods, UV and wind desiccation.
- Application of commercial requirements creates gaps ie not mention animal carcasses or classify as high risk
- Lack of decision maker understanding of the risks regarding rural operations/reuse

25

Barriers and Opportunities

- Omissions and terminology creates confusion and interpretation on whether something is captured under a regulation or guideline
- Resources are targeted at commercial industries and businesses
- Gap between licenced and unlicenced premises as to whether composting guidelines apply
- Little information regarding mortality management and compost guidelines often omit carcasses from list
- Differing interpretations of what is a high-risk waste or required standard- doesn't take into account site specific uses/activities- need a balance.

26



Opportunities

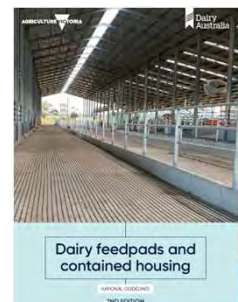
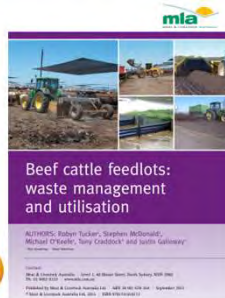


- Organic products from livestock industries have multiple benefits-
 - ↑ increased soil fertility/nutrients, soil condition, organic matter, water infiltration, soil structure, water holding capacity, plant yields and maintain natural microbial communities
 - ↓ reduced erosion, GHG emissions (may) and conventional fertiliser costs.
- Maximise benefits and minimise environmental impacts- CLOSE THE LOOP
- Opportunity to work with Industry bodies, agriculture departments and other stakeholders to promote the benefits, identify true risks, develop targeted guidance and reduce regulatory burden (improve application and understanding).
- Great opportunity for further research to demonstrate benefits more widely- Get Involved!!!

Resources



- National Industry Guidelines and fact sheets
- Agriculture Departments
- Consultants- specialising in composting, animal industries, rural activities/operations
- Agronomists- nutrient requirements, soil and product testing



Thank You - Questions



Janine Price

Principal Consultant- Environment, Planning
and Regulation

Scolexia Animal & Avian Health Consultancy

Office: 8/19 Norwood Cres
Moonee Ponds, Vic, 3039

Based in Canberra
Mob.+61 (0) 429 899 845

Ph: +61 (0) 3 9326 0106
e-mail. jprice@scolexia.com.au
website: www.scolexia.com.au



Australian Government



National
Landcare
Programme