

Rules and regulations that govern manure management and composting in New South Wales

Janine Price

Principal Consultant Environment and Regulation
Scolexia Pty Ltd

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Regulations governing manure management and
composting

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

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Overview-New South Wales



- 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 New South Wales
- Individual interpretation and application may differ.
- For site specific requirements, please contact your local decision makers/regulators.



Source: APL

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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

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Regulatory Authorities and Decision makers – New South Wales

Local Government

- Development consent

NSW Environment Protection Authority

- Operating licences- activity threshold triggers
- Resource Recovery Orders and Exemptions
- Guidance- Composting Guidelines (focus-Commercial facilities)
- Compliance

Local Government

- Likely captured under existing landuse rights ie extensive or intensive if generating own materials
- If bringing in offsite materials for composting- likely development consent required
- RU1- Primary Production- permitted with consent
- Contact your local government- *get response in writing*

Land use term	Definition	Included in
<i>rural industry</i>	rural industry means the handling, treating, production, processing, storage or packing of animal or plant agricultural products for commercial purposes, and includes any of the following— (a) agricultural produce industries, (b) livestock processing industries, (c) composting facilities and works (including the production of mushroom substrate), (d) sawmill or log processing works, (e) stock and sale yards, (f) the regular servicing or repairing of plant or equipment used for the purposes of a rural enterprise.	Rural industries are not a type of industry
<i>resource recovery facility</i>	resource recovery facility means a building or place used for the recovery of resources from waste, including works or activities such as separating and sorting, processing or treating the waste, composting, temporary storage, transfer or sale of recovered resources, energy generation from gases and water treatment, but not including re-manufacture or disposal of the material by landfill or incineration.	Resource recovery facilities are a type of waste or resource management facility

When a waste is deemed no longer a waste-EPA

- NSW do not have a specific framework to define when a waste is no longer classified a waste, however they have *Resource recovery orders (orders) and resource recovery exemptions (exemptions)*
- These orders and exemptions allow some wastes to be beneficially and safely re-used independent of the usual NSW laws that
 - control applying waste to land,
 - using waste as a fuel,
 - or using waste in connection with a process of thermal treatment.
- Orders and exemptions are only appropriate if the re-use
 - is genuine, rather than a means of waste disposal
 - is beneficial or fit-for-purpose, and
 - will not cause harm to human health or the environment
- Generators and processors must meet all the conditions of an order to supply a resource recovery waste to a consumer.
- A current order and exemption for resource recovery wastes can be used without EPA approval but, all conditions of an order and exemption must be met for the supply and re-use to be lawful.

Classification of Waste Products

- NSW provided advise that the waste classification is not a waste class for beneficial reuse, but rather for disposal.
- Waste provisions triggered once waste leaves the premises it was generated on. Provisions are not triggered if the waste is used on site (under licence or consent)- triggered if supplied offsite or brought onto site.

The following wastes (other than special waste, liquid waste, hazardous waste or restricted solid waste) have been pre-classified by the EPA as 'general solid waste (putrescible)':

- household waste that contains putrescible organics
- waste from litter bins collected by or on behalf of local councils
- **manure** and night soil
- disposable nappies, incontinence pads or sanitary napkins
- food waste
- **animal waste**
- grit or screenings from sewage treatment systems that have been dewatered so that the grit or screenings do not contain free liquids
- any mixture of the wastes referred to above.

In assessing whether waste has been pre-classified as general solid waste (putrescible), the following definitions apply:

Animal waste includes dead animals and animal parts and any mixture of dead animals and animal parts.

Manure includes any mixture of manure and biodegradable animal bedding, such as straw.

Classification of Waste Products



- Compost:

- Effluent classed as a liquid waste

- Digestate- no specific definition , however captured in the Composting requirements

Compost: stable, pasteurised organics resulting from the controlled microbiological transformation of organics.

liquid waste means any waste (other than special waste) that includes any of the following—

- (a) anything that—
 - (i) has an angle of repose of less than 5 degrees above horizontal, or
 - (ii) becomes free-flowing at or below 60°C or when it is transported, or
 - (iii) is generally not capable of being picked up by a spade or shovel,
- (b) anything that is classified as liquid waste pursuant to an EPA Gazettal notice.

12 Composting

(1) This clause applies to **composting**, meaning the aerobic or anaerobic biological conversion of organics into humus-like products—

- (a) by methods such as bioconversion, biogasification or vermiculture, or
- (b) by size reduction of organics by shredding, chipping, mulching or grinding.

Compost Production



ON Site	OFF Site		
<p>Compost can be produced on site under an existing licence or consent as a resource/waste management practice.</p> <p>No requirements for onsite composting if compost generated from waste on site (general provisions of Act)</p> <p>If selling, producers need to comply with Resource recovery order (RRO) or they can not legally supply.</p> <p>RRO does not cover animal waste ie. dead animals</p> <p>Any co-composting material such as green waste will trigger threshold and licencing for the amount brought onto the site.</p>	<p>Composting licence is required if a facility has on site at any time more than the organic thresholds</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Regulated area</p> <p>(i) it has on site at any time more than 200 tonnes of organics receive from off site, or</p> <p>(ii) it receives from off-site more than 2,000 tonnes per year of non-putrescible organics or more than 200 tonnes per year of putrescible organics, or</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Unregulated area</p> <p>(i) it has on site at any time more than 2,000 tonnes of organics received from off site, or</p> <p>(ii) it receives from off-site more than 2,000 tonnes per year of non-putrescible organics or more than 200 tonnes per year of putrescible organics.</p> </td> </tr> </table> <p style="text-align: center;">OR</p> <p>An Exemption can be granted if the resource and recovery order- The compost order 2016, requirement are met</p> <p>Animal waste not permitted input into general compost – will need a site specific RROE</p>	<p>Regulated area</p> <p>(i) it has on site at any time more than 200 tonnes of organics receive from off site, or</p> <p>(ii) it receives from off-site more than 2,000 tonnes per year of non-putrescible organics or more than 200 tonnes per year of putrescible organics, or</p>	<p>Unregulated area</p> <p>(i) it has on site at any time more than 2,000 tonnes of organics received from off site, or</p> <p>(ii) it receives from off-site more than 2,000 tonnes per year of non-putrescible organics or more than 200 tonnes per year of putrescible organics.</p>
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Resource Recovery Order (RRO) under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 –

The compost order 2016

- Imposes requirements for **suppliers of compost** to which 'the compost exemption 2016' applies, specifically to compost supplied for application to land as a soil amendment.
- The requirements apply to any person who supplies compost that has been generated, processed or recovered by the person.
- Does not apply to the supply of compost to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act for scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.
- General conditions, sampling, and record keeping have to be carried out in accordance with the Compost Order, e.g. must meet maximum levels ie *E.Coli*, *Salmonella* etc.
- RRO does not apply to materials containing animal waste ie dead animals

Compost Reuse

ON Site	OFF Site
<p>Compost can be used on site under an existing licence or consent as a resource/waste management practice</p> <p>On farm reuse not captured by the RROE framework- need to comply with licence or consent.</p>	<p>Compost can be used under resource recovery exemption (Compost Exemption 2016) for compost that meets all chemical and other material requirements for compost under the Compost Order 2016.</p>



Resource Recovery Exemption (RRE) under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 –

The compost exemption 2016

- Exemption applies to compost that is, or is intended to be, **applied to land as a soil amendment**. Compost is any combination of mulch, garden organics, food waste, manure and paunch that has undergone composting
- Exemption applies to any person who applies, or intends to apply, compost to land
- Conditions of exemption The exemption is subject to the following conditions:
 - At the time the compost is received at the premises, the material must meet all chemical and other material requirements for compost which are required on or before the supply of compost under 'the compost order 2016'.
 - The compost can only be applied to land as a soil amendment.
 - The consumer must ensure that they do not cause or permit the migration of leachate from the land application site.
 - The consumer must ensure that any application of compost to land occurs within a reasonable period of time after its receipt.

Manures/bedding

ON Site	OFF Site
Manure can be reused under scheduled premise licence or consent	Manure can be reused under scheduled premise licence or consent or through an Exemption under The manure order 2014 (must meet requirements)



Resource Recovery
Order under Part 9,
Clause 93 of the
Protection of the
Environment
Operations (Waste)
Regulation 2014-

The manure order
2014

- The order requirements apply in relation to the **supply of manure for application to land** as a soil amendment. Manure means faecal matter generated by any animal other than humans and includes any mixture of animal faecal matter and biodegradable animal bedding such as straw or sawdust.
- The requirements apply to any person who supplies manure that has been generated, processed or recovered by the person.
- Does not apply to the supply of manure to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act for scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.
- In the order: application or apply to land means applying to land by:
 - spraying, spreading or depositing on the land; or
 - ploughing, injecting or mixing into the land; or
 - filling, raising, reclaiming or contouring the land.
- Consumer means a person who applies, or intends to apply, manure to land

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Resource Recovery
Exemption under
Part 9, Clauses 91
and 92 of the
Protection of the
Environment
Operations (Waste)
Regulation 2014-

The manure
exemption 2014

- This exemption **applies to manure that is, or is intended to be, applied to land as a soil amendment.**
- This Applies to any person who applies, or intends to apply, manure to land and to the premises at which the consumer's actual or intended application of manure is carried out.
- The exemption does not apply in circumstances where manure is received at the premises for which the consumer holds a licence under the POEO Act for scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.
- The exemption is subject to the following conditions:
 - The manure can only be applied to land as a soil amendment.
 - The consumer must ensure that any application of manure to land must occur within a reasonable period of time after its receipt.

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Effluent



ON Site	OFF Site
<p>Under existing licence or consent</p> <p>Effluent can be reused under an existing licence for land application under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)</p>	<p>Under existing premise licence, waste disposal licence or consent or reused under an exemption as per The effluent order 2014 and Effluent exemption but</p> <p>cannot be transported offsite by means of a tanker or truck-approval required</p> <p>Waste transported interstate is required to be tracked .Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)</p>



Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 –

The effluent order 2014



- The order applies to effluent. Effluent means:
 - **waste water** from collection or treatment systems that are ancillary to processing industries involving livestock, agriculture, wood, paper or food, being waste water that is **conveyed from the place of generation** by means of a pipe, canal or conventional method used in irrigation (but not by means of a tanker or truck), **or**
 - **waste water** from collection or treatment systems that are ancillary to intensive livestock, aquaculture or mariculture, being waste water that **is released** by means of a pipe, canal or other conventional method used in irrigation as part of day to day farming operations, in accordance with the Act.
- The requirements in this order apply, as relevant, to **any person who supplies effluent** that has been generated, processed or recovered by a person.
- This order does not apply to the supply of effluent to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act for scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

Resource Recovery
Exemption under
Part 9, Clauses 91
and 92 of the
Protection of the
Environment
Operations (Waste)
Regulation 2014

The effluent
exemption 2014

- The exemption ***applies to effluent that is, or is intended to be, applied to land as a soil amendment*** or for the purposes of irrigation.
- The exemption applies to any person who applies, or intends to apply, the effluent to land as set out
- The exemption is subject to the following conditions:
 - The effluent can only be applied to land as a soil amendment or for the purposes of irrigation.
 - The consumer must ensure that any application of effluent to land must occur within a reasonable period of time after its receipt.
- Cannot transport offsite by means of a tanker or truck. Will require approval.

Digestate Reuse

ON Site	OFF Site
As per licence or consent under current livestock licence or composting licence if not a livestock premise (threshold dependent)	Currently no RROE for the land application of digestate. Reuse only available through a specific exemption pathway. Not currently classed as a trackable waste



Source: Wrap

Mortalities



ON Site	OFF Site
<p>In accordance with existing licence, consent or GED</p> <p>Animal carcasses are a trackable waste if transported interstate</p>	<p>In accordance with GED</p> <p>Animal carcass disposal do not appear to be regulated as such, but guidance is provided in, Primefact PUB21/202, Animal Biosecurity and Welfare, Second edition, March 2021, NSW DPI</p> <p>Animal carcasses are a trackable waste if transported interstate. Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)</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.

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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).

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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

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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.

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Opportunities

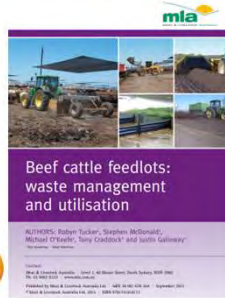


- Organic products from livestock industries have multiple benefits-
 - ↑ increased soil fertility/nutrients, soil condition, organic matter, water infiltration, soil structure, water holding capacity, plant yields and maintain natural microbial communities
 - ↓ reduced erosion, GHG emissions (may) and 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

