

40585**Outline factors and processes required for optimal aerobic compost production**

Kaupae Level	3
Whiwhinga Credit	5
Whāinga Purpose	<p>This skill standard is intended for people who are new to the resource recovery industry or people who are already working in a resource recovery environment which processes organic materials for compost production. People credited with this skill standard will be able to outline the key factors required to create an optimal compost product and the biological and chemical processes involved in aerobic composting.</p> <p>This skill standard aligns with the New Zealand Certificate in Resource Recovery (Level 3) with strands in Organic Materials Processing, Recovery and Recycling, and Metal Recycling [Ref: 2744].</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Outline the key factors required to achieve optimal decomposition during aerobic composting.	a. Describe key requirements of the aerobic composting process.
	b. Identify the optimum parameters for aerobic decomposition.
	c. Explain the importance of monitoring parameters during the composting process.
2. Outline the biological processes involved in the aerobic composting process.	a. Describe a compost food web.
	b. Explain the role of fungi, bacteria and physical decomposers in the composting process.
	c. Identify how microbial activity affects pH and temperature during the composting process.

3. Outline the chemical processes which contribute to the decomposition and stabilisation of organic materials.	a. Identify the key factors of the decomposition process in compost production.
	b. Describe nutrient cycling during the aerobic composting process including nitrogen and carbon.
	c. Explain the importance of the C:N ratio in compost production.
	d. Describe the process and benefits of aerobic respiration during compost production.
	e. Explain maturation and how the curing process contributes to creating an optimal compost product.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

Evidence presented for assessment against this skill standard may include oral, visual, video, written and/or practical activities demonstrated in the workplace.

Evidence presented for assessment against this skill standard must be consistent with safe working practices and be in accordance with applicable service information, workplace procedures and legislative requirements.

Definitions

Physical decomposers refer to macro-organisms which decompose organic materials by chewing, grinding and squeezing. Examples of physical decomposers include worms, mites, flies and snails.

Workplace procedures refer to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, manufacturer's requirements, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the resource recovery industry.

Ngā momo whiwhinga | Grades available

Achieved

Ihirangi waitohu | Indicative content

Aerobic composting

- Requirements for aerobic composting such as oxygen, moisture, temperature, C:N ratio, pH and particle size.
- Parameters for aerobic decomposition such as temperature, moisture, pH and nutrient content.

Rauemi | Resources

Legislation, regulations and industry guidelines relevant to this skill standard include but are not limited

to:

- Hazardous Substances and New Organisms Act 1996.
- Health and Safety at Work Act 2015.
- Standards New Zealand. NZS 4454:2005 Composts, soil conditioners and mulches. Available from: <https://www.standards.govt.nz/>.
- Standards Australia. AS 4454:2012 Composts, soil conditioners and mulches. Available from: <https://store.standards.org.au/>.
- WasteMINZ. (2009). Consent Guide for Composting Operations in New Zealand. Available from: <https://www.wasteminz.org.nz/guidelines-on-compostable-and-biodegradable-packaging>.
- Ed. Robert Rynk. (2021). *The Composting Handbook: A how-to and why manual for farm, municipal, institutional and commercial composters*. Available from: <https://www.amazon.com/>.
- WRAP. (2016). *Digestate and compost use in agriculture: good practice guidance*. Available from: <https://wrap.org.uk/> (see guides under resources section).

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this skill standard will take precedence for assessment purposes, pending review of this skill standard. Legislation can be accessed at: <https://www.legislation.govt.nz>.

Pārongo Whakaū Kouna | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Service Sector > Resource Recovery > Composting
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0014

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	27 March 2025	N/A
Kōrero whakakapinga Replacement information	N/A		
Rā arotake Planned review date	31 December 2029		

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development at qualifications@hangaarorau.nz to suggest changes to the content of this skill standard.