

40590 Develop a recipe for compost production

Kaupae Level	4
Whiwhinga Credit	10
Whāinga Purpose	<p>This skill standard is intended for 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 identify and classify raw materials, determine production objectives, and develop and validate a composting recipe in a resource recovery environment.</p> <p>This skill standard aligns with the New Zealand Certificate in Resource Recovery (Level 4) with strands in Organic Materials Processing, Recovery and Recycling, and Metal Recycling [Ref: 2745].</p>
Whakaakoranga me mātua oti Pre-requisites	Learners/ākonga must demonstrate competence in workplace health and safety.

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

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Identify and classify raw materials for a composting recipe in a resource recovery environment.	a. Identify raw materials available for a composting recipe in accordance with established company criteria.
	b. Classify identified raw materials from records or laboratory analysis.
2. Determine production objectives for the composting recipe in a resource recovery environment.	a. Determine product specifications using product performance data and company records.
	b. Identify a composting recipe that meets market requirements.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
3. Develop a composting recipe in a resource recovery environment.	a. Calculate proportions of raw materials by weight in relation to a specific composting site and method.
	b. Determine raw materials and compost production plan for composting recipe.
	c. Review composting batch management procedures and document variations as a new procedure.
	d. Estimate compost production schedule of composting recipe.
	e. Confirm compatibility of composting recipe and production schedule against customer requirements.
	f. Estimate density of pre-processed raw materials and translate weight-based recipe into volume-based recipe for production.
	g. Document volumetric composting recipe and production procedures as an operational batch and procedure.
4. Validate composting recipe in a resource recovery environment.	a. Prepare and mix raw materials in accordance with new compost recipe to form feedstock.
	b. Manage composting batch in accordance with revised production procedure.
	c. Monitor composting pile to assess efficiency and compliance with site plan.
	d. Identify and report any faults or variations in production during composting process.

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

Assessment specifications:

Evidence must include amendment or development of at least two different compost recipes.

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

Composting recipe refers to a mixture of materials that results in characteristics suitable for rapid and reliable biological transformation whilst minimising potential for negative environmental emissions.

Feedstock refers to organic materials used for composting or other biological treatment systems.

Organic refers to materials that are putrescible or are of animal or vegetable origin.

Product performance data refers to historical data on the performance of products in terms of their purpose.

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

Recipe development

- Classification of raw materials such as food, garden, grass, sludge, sawdust, manure, poultry by-products, sludges and industrial waste indicating composition of chemicals.
- Use of compost recipe calculator.

Monitoring

- Assessment of efficiency of composting process in relation to production schedule.
- Impacts on the environment such as spills, leaks, greenhouse gas emissions, odours, organic dusts, litter, water pollution from runoff or leachate, attraction of pests, erosion, noise, fire.
- Compliance with consents under Resource Management Act.
- Compliance with health and safety requirements.

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.
- Resource Management Act 1991.
- 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/>.
- New Zealand Water and Wastes Association. (current edition). *Guidelines for the safe application of biosolids to land*. Available from: <https://www.waternz.org.nz/>.
- NSW Environment Protection Authority. (2014). Waste Classification Guidelines. Part 1: Classifying waste. Available from: <https://www.epa.nsw.gov.au/>.
- 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/>.

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.