



Australian Government

Department of Education, Employment and Workplace Relations

RTE3513A Prepare value-added compost-based products

Release: 1

RTE3513A Prepare value-added compost-based products

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to prepare and/or blend finished compost with other materials or products to produce various value-added compost-based products.

The unit involves the application of well-developed skills with some discretion and judgement and limited supervision.

Application of the Unit

Application of the unit

Composting is used here as a general expression for the processing of organic materials; with this unit being relevant for aerobic and anaerobic composting as well as vermiculture systems. This unit of competency applies to people working at a commercial-scale composting facility that produces value-added products. It will require taking responsibility for work output with checking related to overall progress, and taking limited responsibility for the work output of others for example as a loader operator or team leader.

Where work requires the use of load-shifting or other equipment, appropriate training/certification must be provided according to state and territory safety and licensing requirements.

Licensing/Regulatory Information

Refer to Application of the Unit

Pre-Requisites

Not applicable.

Employability Skills Information

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where **bold italicised** text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 1 Organise for value-added product preparation.	1.1 Job sheet or work order is reviewed to clearly identify all product requirements. 1.2 Equipment required for safe, effective and efficient product preparation is identified and organised. 1.3 Occupational health and safety (OHS) hazards in workplace are identified, and risk is assessed and managed according to enterprise procedures. 1.4 Environmental implications associated with product preparation are identified, assessed and reported to supervisor.
2 2 Prepare value-added products.	2.1 Compost and product additives are clearly identified and confirmed against job sheet and enterprise procedures. 2.2 Suitable personal protective equipment (PPE) and clothing are selected, used, maintained and stored according to OHS requirements. 2.3 Required quantities of compost and product additives are measured and transported to product preparation area. 2.4 Compost and product additives are regularly monitored and checked against value-added product specifications and variations or non-conformances are identified and reported, and remedial action is taken according to enterprise procedures and product specifications.

- 2.5 **Preparation method** and machinery to be used are confirmed as appropriate for product and as meeting enterprise product requirements.
- 2.6 Plant and machinery are operated in a **safe and controlled** manner, and monitored for performance and efficiency.
- 2.7 Compost, materials and other product additives are blended and processed according to product requirements.
- 2.8 Products are monitored and adjustments to machinery operations are made to meet job sheet specifications.
- 2.9 Batch numbers of compost materials and other additives are combined or reassigned.
- 2.1 Blending, processing machinery and site are cleared and cleaned as required to avoid contamination between batches according to enterprise procedures.
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- 3 **3 Conduct quality inspection and readiness for sale.**
 - 3.1 Value-added product is inspected and checked for compliance with job sheet and product requirements.
 - 3.2 Product details are documented accurately and promptly according to enterprise procedures.
 - 3.3 Value-added product is transported to holding bay and quantity of product is confirmed.
 - 3.4 Value-added product is clearly labelled according to regulatory and customer requirements.
 - 3.5 Value-added product is released for dispatch according to enterprise procedures.
 - 3.6 Work outcomes are reported to supervisor, feedback on performance is sought and any required improvements are noted for future action.

Required Skills and Knowledge

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills include:

- communicating with work team and supervisor
- demonstrating safe and environmentally responsible workplace practices
- following material safety data sheets (MSDS)
- identifying and handling raw materials, products, additives and contaminants
- interpreting and applying instructions
- measuring and calculating volumes and consumption requirements
- reading and interpreting job sheets
- recording and reporting equipment faults, workplace hazards and accidents
- using emergency and personal protective equipment.

Required knowledge includes:

- common product contaminants
- enterprise product specifications and standards
- environmental licence requirements, aspects and management measures associated with operation of machinery and equipment
- hazards in handling materials and additives and appropriate risk control measures
- identification of contaminants
- legislation, regulations and codes of practice with regard to workplace OHS and use and control of hazardous substances
- operating principles and methods for plant and machinery
- procedures for cleaning, securing and storing machinery, equipment and materials
- potential risks and hazards associated with operation of machinery and equipment
- product types and characteristics
- raw materials, compost and additives commonly used to manufacture value-added products
- relevant Australian standards for products
- relevant state and territory legislation, regulations and codes of practice with regard to licensing, roads and traffic requirements
- value-added product types and characteristics.

Evidence Guide

Overview of assessment

It is preferred that this unit of competency be assessed in a commercial-scale composting facility.

The unit could be assessed on its own or in combination with other units of competency relevant to the job function such as after:

RTC2210A **Maintain properties and structures**

RTC2701A **Follow OHS procedures**

RTC2702A **Observe environmental work practices**

RTC2706A **Apply chemicals under supervision**

RTE2507A **Recognise raw materials, production processes and products on a composting site**

RTE2608A **Set up, operate and maintain a water delivery system**

RTE2709A **Recognise and respond to fire emergencies on a composting site.**

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The critical requirements for this unit of competency as a whole are listed below.

Assessment must confirm one's ability to:

interpret batch sheets and follow enterprise production procedures

recognise, quantify and handle products according to enterprise requirements and procedures

recognise value-added products and their characteristics

prepare batches of value-added product according to defined batch recipes and methods

conduct work in a safe and efficient manner

establish and maintain appropriate documentation accurately and promptly.

Context and specific resources for assessment

Assessment for this unit of competency is to be largely practical in nature and must be assessed in a commercial-scale composting facility or in a situation that reproduces and/or simulates operational conditions.

For valid assessment, one must have opportunities to participate in exercises, case studies and other real and simulated practical and knowledge assessments that demonstrate the skills and knowledge specified in this unit.

The candidate must also have access to the following resources:

a commercial-scale value-added compost-based product facility

a range of load-shifting machinery and measuring equipment

PPE

finished compost

additives

job sheets or work orders.

Guidance information for assessment

To ensure consistency in performance, competency should be demonstrated on more than one occasion over a period of time in order to cover a variety of circumstances, cases and responsibilities and, where possible, over a number of assessment activities.

The skills and knowledge required to demonstrate competency must allow for application in a broad industry context, and should be transferable to a range of work environments, including the ability to deal with unplanned events. For example, this could include work within composting operations of varying scale; processing a range of different raw materials; producing a range of different composts and value-added products to meet the demands of different markets; located in an urban or rural context with varying environmental constraints; and using various equipment, practices, technologies and management systems.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. **Bold italicised** wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Value-added products:

are defined as a basic compost output with the addition of certain materials to form a new product

are produced using defined batch recipes to meet documented product specifications

may include:

- composted and pasteurised mulches for various applications
- composted and pasteurised soil conditioners for various applications
- effluent, stormwater or emission treatment products
- general and special purpose landscaping soils
- soft fall or loose fill materials for playground surfacing or other applications
- mushroom substrate
- ornamental mulches
- products for agricultural disease suppression
- products for erosion control or site remediation
- sports turf substrates
- standard and specialised potting mixes
- other products for specialised applications

Job sheet or work order may include:

- batch number
- compost (batch) recipe
- job number
- product batch order and packaging requirements
- raw materials or product quantity and quality requirements
- raw materials preparation (pre-processing)

requirements.

Measuring **equipment** used may include:

automatic volume measuring equipment
containers for measuring volume
scales or balances for measuring weight.

OHS hazards:

may include:

dust

ergonomic hazards associated with posture
and vibration

exposure to loud noise and fumes

extreme weather conditions

hazardous substances such as:

fertiliser

fuel

oils

machinery, including hydraulics

mechanical malfunctions and exposed
moving parts

obstacles

oil and grease spills

pests

solar radiation

the presence of bystanders

varying gradients, potholes, ditches and
embankments

may be addressed by systems and procedures
for:

appropriate use, maintenance and storage of
PPE

hazard identification, assessment and
reporting

outdoor work, including protection from
solar radiation

pedestrian safety

protection from hazardous noise, mechanical
vibration and organic and other dusts

protection of people in the workplace
safe lifting, carrying and handling
safe operation and maintenance of machinery
and equipment, including hydraulics
guarding of moving parts.

Environmental implications associated
with operation of plant and machinery may
include:

negative environmental impacts resulting
from:

aerosol particulates

excessive noise and exhaust emissions

incorrect use and disposal of hazardous
substances such as:

fuel

fertiliser

incorrect use and disposal of maintenance
debris such as:

oil containers

chemical residues

organic dusts

impacts such as:

dust problems from high speed and frequent
traffic

run-off flows of water and cleaning agents
from servicing, maintenance and cleaning
activities

soil disturbance.

Compost and product additives may
include:

finished compost of varying maturity and
characteristics

product additives such as:

biological inoculants

bulking agents or other products that alter the
visual, physical, chemical or biological
characteristics of finished product

colouring agents

inorganic or organic fertiliser

liming agents

	wetting agents
	raw materials (compostable organic materials).
PPE and clothing may include:	apparel such as: appropriate footwear gloves hard hats high visibility clothing overalls emergency equipment and procedures such as: emergency procedure guides eye wash kit fire extinguisher first aid kit MSDS eye and hearing protection face shields and masks respirators.
Preparation methods may include:	load-shifting measuring quantities mixing and blending materials particle size screening size reduction.
Safe and controlled operation of machinery and equipment may include:	appropriate selection and use of machinery and equipment effective communication between work team members maintaining working loads within specifications using operational techniques for specific weather conditions.

Unit Sector(s)

Not applicable.