



Australian Government

Department of Education, Employment and Workplace Relations

AHCCHM302A Fumigate soil using chemicals

Release: 1

AHCCHM302A Fumigate soil using chemicals

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the process of fumigation of soil and/or media using chemicals and defines the standard required to: assess the need for fumigation; select appropriate fumigant and application method; prepare and clean equipment; apply fumigant; record work activities.
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Application of the Unit

Application of the unit	This unit applies to the control of microbiological and other pests in soil or growing media by means of chemical fumigation. The standard involves applying well-developed skills and knowledge with some discretion and judgement and routine supervision. It requires taking responsibility for own work output.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

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1. Assess the need for fumigation	1.1. Ascertain the threshold level of infestation against quality requirements and industry practice. 1.2. Determine the need for fumigation as an option within an Integrated Pest Management (IPM) and Integrated Resource Management (IRM) strategy. 1.3. Determine the appropriate fumigation method with regard to the target pest and soil conditions. 1.4. Assess cost-benefit of fumigation.
2. Determine type and method of fumigation	2.1. Select method of fumigant application to suit type of pests and soil/media type in accordance with manufacturer's specifications, environmental, legislative, Occupational Health and Safety (OHS) requirements and industry practice. 2.2. Determine type of fumigant and application rate in accordance with manufacturer's specifications, standards and environmental, legislative, OHS and industry practice. 2.3. Assess appropriateness of site and soil conditions for selected fumigation method. 2.4. Identify and report any factors affecting the safe application of fumigants. 2.5. Determine application rate to ensure fumigation conditions are in accordance with manufacturer's specifications and environmental, legislative, OHS and industry practice.
3. Prepare site for fumigation	3.1. Assess hazards and control risks in relation to the use of fumigants in accordance with legislative, environmental, OHS requirements and industry practice. 3.2. Establish site security measures to control access during fumigation and prescribed re-entry periods in accordance with label directions. 3.3. Set up emergency system in accordance with legislative and OHS and requirements. 3.4. Prepare soil, measure soil temperature and check soil moisture to ensure that the required concentration of fumigant is retained in the soil for the required period of time in accordance with label directions.
4. Prepare application equipment and fumigant(s)	4.1. Select and use appropriate personal protective equipment in accordance with label and Material Safety Data Sheets (MSDSs) requirements.

ELEMENT	PERFORMANCE CRITERIA
	<p>4.2. Select application equipment appropriate for the fumigation in accordance with label directions and industry practice.</p> <p>4.3. Check operational effectiveness of fumigation machinery and equipment in accordance with manufacturer's specifications and industry practice.</p> <p>4.4. Calibrate fumigation equipment to application rate in accordance with label directions.</p> <p>4.5. Prepare fumigant in accordance with label legislative and OHS requirements and industry practice.</p>
5. Conduct fumigation	<p>5.1. Apply fumigant using appropriate equipment and fumigation methods in accordance with label and industry practice.</p> <p>5.2. Respond to emergency situations using emergency response procedures in accordance with legislative and OHS requirements and industry practice.</p> <p>5.3. Apply appropriate soil sealing methods to contain fumigant in accordance with label and organisational requirements.</p>
6. Monitor site	<p>6.1. Monitor fumigation site during exposure time to prevent unauthorised access in accordance with legislative and OHS requirements and industry practice.</p> <p>6.2. Aerate soils fully and accurately test for evidence of residual gas by conducting germination test or sowing indicator crop in accordance with label.</p> <p>6.3. Establish re-entry times and control risks to human and animal health in accordance with label, legislative, OHS requirements and industry practice.</p> <p>6.4. Notify appropriate person(s) of any further risk control measures required in accordance with label, legislative, OHS and industry practice.</p> <p>6.5. Ventilate fumigation enclosure to remove fumigant in safe and controlled manner in accordance with label, legislative, OHS and organisation requirements.</p>
7. Restore site	<p>7.1. Collect and remove all equipment, fumigants and waste in accordance with label, legislative, OHS and industry practice.</p> <p>7.2. Remove signage when site is available for re-use in accordance with legislative and industry practice.</p>

ELEMENT	PERFORMANCE CRITERIA
	7.3. Restore site in accordance with legislative and industry practice.
8. Clean, safety-check and store equipment and fumigants	8.1. Clean, decontaminate, check and store equipment and Personal Protective Equipment (PPE) in accordance with manufacturers specifications, OHS and industry practice. 8.2. Transport and store fumigants in accordance with label, OHS and industry practice. 8.3. Dispose of all waste in accordance with label, legislative, OHS environmental and industry practice.
9. Record fumigation details	9.1. Record details of fumigant applications in accordance with legislative and quality assurance requirements and industry practice. 9.2. Record and report safety incidents or poisoning to the appropriate person or authority in accordance with legislative requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- identify hazards and implement safe operating procedures
- prepare fumigants
- conduct pre-operational checks, clean up and storage of fumigation equipment and PPE
- prepare site
- set up and calibrate fumigation equipment
- apply fumigants
- aerate soils and check for residual fumigant gas
- ventilate fumigation enclosure
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required
- use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

REQUIRED SKILLS AND KNOWLEDGE**Required knowledge**

- primary and secondary soil/media pests
- threshold pest levels and cost benefit
- fumigant free options for pest control including Integrated Pest/Resistance Management principles
- fumigant label and MSDSs formats
- interpretation and application of fumigant label requirements
- soil/media type, moisture and temperature factors in relation to fumigation
- types and application of personal protective equipment
- legislation and regulations including OHS and licensing requirements in relation to fumigant use
- features, functions, calibration and set up of fumigation equipment
- risk factors including human and animal health, weather, leakage, spillage and environmental
- requirements for disposal of excess fumigants, clearing spillages and equipment clean up.

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following:</p> <ul style="list-style-type: none"> • assess the need for fumigation • select appropriate fumigant and application method • prepare and clean equipment • apply fumigant • record work activities.
Context of and specific resources for assessment	Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole.	
Fumigation may include:	<ul style="list-style-type: none"> • fumigation of soils to control primary and secondary pests of plants.

Unit Sector(s)

Unit sector	Chemicals
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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