



Australian Government

AHCCHM309 Fumigate soil

Release: 1

AHCCHM309 Fumigate soil

Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 3.0.

Application

This unit of competency describes the skills and knowledge required to select and use application equipment to fumigate soil or growing media for the control of pathogens and pests.

The unit applies to individuals who work under broad direction and take responsibility for their own work. They use discretion and judgement in the selection, allocation and use of available resources and for solving problems.

State or territory licensing, legislative or certification requirements apply in some jurisdictions.

Pre-requisite Unit

Nil

Unit Sector

Chemicals (CHM)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan fumigation	1.1 Determine the need for fumigation as an option for pest management strategy of the workplace 1.2 Assess site and soil conditions for suitability of fumigation as a method to use 1.3 Select method of fumigant and application equipment to suit type of pest and soil or media to be treated 1.4 Identify and select fumigant and its application rate according to

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	chemical label 1.5 Identify hazards, assess risks and implement control measures for soil and media fumigation 1.6 Establish site security measures to control access during fumigation and prescribed re-entry periods according to chemical label and workplace procedures 1.7 Determine appropriate personal protective equipment according to fumigant safety requirements
2. Prepare site for fumigation	2.1 Implement controls and site security measures according to workplace procedures 2.2 Erect signage and barriers to control risk of inadvertent entry to facility 2.3 Ensure site emergency procedures are in place and ready to implement 2.4 Assess the soil for readiness for fumigation treatment
3. Prepare application equipment and fumigants	3.1 Select application equipment appropriate for the fumigant and according to workplace procedures and industry practice 3.2 Check operational effectiveness of fumigation equipment according to operating procedures 3.3 Calibrate fumigation equipment to deliver the correct application rate according to chemical label and operating instructions 3.4 Transport and store fumigants according to chemical label and safety data sheets (SDS) and regulatory requirements 3.5 Select, ensure serviceability, fit and use personal protective equipment for selected fumigant according to chemical label and SDS 3.6 Prepare fumigant according to chemical label and equipment operating instructions
4. Conduct and monitor fumigation	4.1 Apply fumigant according to planned application method, pest management strategy and chemical label 4.2 Apply appropriate soil sealing methods to contain fumigant 4.3 Monitor fumigation site during exposure time to prevent unauthorised access 4.4 Aerate soils according to chemical label instructions and workplace procedures

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.5 Test for evidence of residual fumigant according to workplace procedures and maximum residue limits for the soil or media 4.6 Implement re-entry procedures to control risks to human and animal health 4.7 Notify appropriate personnel of any further risk control measures required 4.8 Ventilate fumigation enclosure in safe and controlled manner according to chemical labels instructions, SDS and workplace procedures 4.9 Respond to emergency situations according to workplace emergency procedures
5. Restore site	5.1 Collect and remove equipment, fumigants and waste according to workplace procedures 5.2 Remove signage according to site security measures
6. Clean, safety-check and store equipment and fumigants	6.1 Clean, decontaminate, check and store equipment and personal protective equipment according to workplace procedures, chemical labels, SDS and regulatory requirements 6.2 Dispose of all waste according to chemical label instructions and workplace environmental procedures
7. Record fumigation details	7.1 Record details of fumigation applications according to workplace procedures and regulatory requirements 7.2 Record and report safety incidents according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Read and interpret safety data, labels, manufacturers specifications, operating procedures, specifications, and other documentation and consolidates information to determine

Skill	Description
	fumigation actions and activity
Writing	Accurately record and complete organisational documents using clear language and correct spelling, grammar and terminology
Numeracy	Perform mathematical calculations to determine soil volumes and rates of application and to check, interpret and confirm results of tests
Oral Communication	Effectively participate in verbal exchanges using active listening to convey and clarify post treatment risks and control measures
Navigate the world of work	Identify and implement manufacturer requirements for fumigants
Get the work done	- Take responsibility for planning, sequencing and prioritising tasks required for fumigation activities - Address problems and initiate standard procedures in response to emergencies applying problem solving processes

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCCHM309 Fumigate soil	AHCCHM302 Fumigate soil	Removal of prerequisite units Minor changes to Performance Criteria for clarity Updated Performance Evidence and Knowledge Evidence	Equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCCHM309 Fumigate soil

Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 3.0.

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit. There must be evidence that the individual has on at least one occasion demonstrated the ability to safely apply a fumigant to soil ensuring they have:

- determined need, appropriateness and method for fumigating a soil
- determined hazards and risks and established safety and security resources and control measures required
- prepared soil for safe fumigation
- determined fumigant requirements and prepared the fumigant and equipment for treatment according to fumigant label instructions and safety data sheets (SDS)
- transported, handled and stored fumigants according to safety procedures, label and legislative requirements
- ensured personal safety by selecting, fitting and using appropriate personal protective equipment (PPE)
- applied fumigant and monitored the safety and integrity of the fumigation process, responding appropriately to emergencies
- rendered the soil and surrounding area safe through aeration and conducted tests to establish safe soil and air quality notifying personnel of residual risks
- removed fumigation materials, waste and temporary resources from treatment area and disposed of waste according to workplace and environmental procedures
- complied with fumigant label instructions and SDS
- checked, decontaminated, cleaned and stored equipment used in the fumigation process according to workplace procedures
- maintained records of fumigation activities and incidents and reported according to workplace procedures.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- primary and secondary soil pests, diseases and weeds to be treated and factors and considerations in relation to the use of fumigation including threshold pest levels and cost benefit
- pest management strategies and relation to the use and selection of fumigation methods, including:
 - chemical
 - mechanical
 - biological
 - cultural
 - integrated pest management including resistance management principles
- soil, media type, moisture and temperature factors relative to fumigation and methods employed to “seal” soils during fumigation
- types of fumigant used for treating soils, their mode of action, methods of application, transport, storage and handling
- fumigant labels and SDS and how to interpret and apply label requirements for specific soil and media situations
- equipment used in fumigation, their setup, calibration, operation, shutdown, care and maintenance
- calculations required to determine fumigant rates of application
- monitoring procedures during a fumigation process and methods of assessing escape
- safety requirements including signage, equipment, PPE for use when handling fumigants and conducting fumigation activities
- legislation, regulations, codes of practice and licensing requirements relevant to fumigant use, transport, storage and handling
- chemical hazards and risks factors including human and animal health, leakage, spillage, environment damage and control measures required to mitigate risk
- methods for aerating treated soils and assessment of residual fumigants including testing fumigant residues and maximum residue limits
- requirements for disposal of excess fumigants, clearing spillages and equipment clean up
- records required when conducting fumigation activities and related safety reporting procedures.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a typical workplace environment or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - soil requiring fumigation
 - fumigants
 - PPE
 - fumigation and soil aeration equipment

- fumigant measuring and mixing equipment
- fumigant testing equipment
- materials required to seal soil for fumigation
- specifications:
 - specific workplace documents, including work instructions and procedures for fumigation
 - fumigant labels and SDS
 - legislation, regulations, codes of practice relevant to handling, storage, transport and use of fumigants
 - manufacturers' operation and maintenance instructions for fumigation equipment
 - relevant standards for fumigation test results.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volumes, including Implementation Guides, are available at VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>