Modification history

|  |  |
| --- | --- |
| Release | Comments |
| Release 1 | This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version X.0. |

| AHCPER3X10 | Mitigate plant pests, diseases and disorders in a permaculture system |
| --- | --- |
| Application | This unit of competency describes the skills and knowledge required to identify, plan and implement programs to prevent or control pests, diseases and disorders in plants for a permaculture system.  The unit applies to individuals who take responsibility for their own work and for the quality of the work of others. They use discretion and judgement in the selection, allocation and use of available resources.  No licensing, legislative or certification requirements apply to this unit at the time of publication. |
| Prerequisite Unit | Nil |
| Unit Sector | Permaculture (PER) |

| Elements | Performance Criteria |
| --- | --- |
| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Identify possible pests, diseases and disorders, and for permaculture system | 1.1 Identify pests diseases and disorders common to plants grown in the permaculture system  1.2 Identify conditions conducive to development of pests diseases and disorders  1.3 Identify beneficial organisms that control pests, diseases and disorders |
| 2. Develop pest, diseases and disorder programs for permaculture system | 2.1 Investigate prevention strategies for pests, diseases and disorders affecting permaculture system  2.2 Investigate control strategies for pests, diseases and disorders affecting permaculture system  2.3 Select control and prevention strategies best suited to permaculture system  2.4 Document prevention and control programs for permaculture system |
| 3. Monitor permaculture system for pests, diseases and disorders | 3.1 Monitor conditions that contribute to pests, diseases or disorders  3.2 Monitor plants for symptoms of pests, diseases or disorders  3.3 Identify pest, disease or disorder from observed symptoms  3.4 Identify tolerable threshold of damage from pests, diseases and disorders  3.5 Monitor beneficial organisms to support control of pest, disease and disorders  3.6 Record observations according to workplace procedures |
| 4. Implement pest and disease prevention program | 4.1 Implement biosecurity procedures to mitigate pests and disease transfer during permaculture operations  4.2 Recognise onset of conditions conducive to development of pests, diseases and disorders  4.3 Manipulate habitat and microclimate conditions to encourage beneficial organisms  4.4 Manipulate environmental to prevent conditions conducive to pests, disease and disorders  4.5 Investigate and mitigate effects of prevention program on other elements within permaculture system  4.6 Implement permaculture practices to minimise pest, disease and disorders according to permaculture system design  4.7 Record prevention activity according to workplace procedures |
| 5. Implement pest and disease control program | 5.1 Identify when pest. disease or disorder exceeds tolerable threshold for permaculture system  5.2 Select control method according to permaculture principles and organic standards  5.3 Implement control method ensuring minimal impact on other permaculture elements  5.4 Record control activity according to workplace procedures |
| 6. Monitor and record the management of plant pests, diseases and disorders | 6.1 Compile records from pest disease and disorder control and prevention activity  6.2 Examine records and formulate patterns of infestation and infection  6.3 Document patterns of infestation and infection for permaculture system  6.4 Review prevention and control programs in consideration of records and formulated patterns |

| 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 |
| Writing | * Accurately maintain records of pests and disease conditions, treatments and outcomes to form traceability and reference data for future control options |

|  |  |  |  |
| --- | --- | --- | --- |
| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| AHCPER3X10 Mitigate plant pests, diseases and disorders in a permaculture system | AHCPER320 Manage plant pests, diseases and disorders in a permaculture system | Minor change to Application  Major changes to wording to reflect Training Package Standards. Addition of Element for control programs | Not equivalent |

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

| TITLE | Assessment requirements for AHCPER3X10 Mitigate plant pests, diseases and disorders in a permaculture system |
| --- | --- |
| 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 implemented prevention and control programs to mitigate the effects of pest, diseases and disorders on a permaculture system and has:   * identified potential pests, diseases and disorders and their preferred conditions for a permaculture system * identified and monitored beneficial organisms for prevention and control of pests diseases and disorders * developed prevention and control programs for pest, diseases and disorders * monitored conditions conducive to pests, diseases and disorders including: * soil moisture * weather conditions * nutrients * monitored permaculture system and identified pests, diseases and disorders and the tolerable threshold for each * implemented a pest, diseases and disorder prevention program and monitored impact on other permaculture elements * investigated methods of managing pests, diseases and disorders in a permaculture system * recognised when tolerable threshold has been exceeded for infestation/infection * implemented control program according to organic and permaculture standards * maintained records and formulated patterns of pest and disease control operations for updating prevention and control programs which must include: * pest disease or disorder name, type and cause * weather/environmental conditions conducive for development * date and actions taken in prevention and control program activity * infection/infestation thresholds for plants in the permaculture system. | |

| 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:   * permaculture and organic principles and practices related to managing plant pests, diseases and disorders * principles of maintaining healthy crops in a permaculture system, including: * companion planting * increasing diversity * providing habitat and food for pests’ natural predators * healthy, balanced soil * planting for insectivorous birds, lizards, frogs and microbats * minimal use of soluble fertilisers * permaculture and organic systems control methods, including: * deterrent organic sprays * pheromone traps and lures * biological controls using predatory, parasitic insects and mites * nutrient additives * crop rotation and succession planting * covers and netting * Bacilllus thuringiensis (BT) and other action-specific micro-organisms * common pests, diseases and disorders affecting plants in a permaculture system, including: * symptoms of disease and disorders * soil conditions, weather and environmental conditions supporting infection/infestation * common names * infestation/infection threshold affecting produce * stages of development of pest organisms and signs of pest presence on plants and animals * fungal, bacterial and viral infestations and their symptoms * disease vectors and plants that harbor them * preventing and controlling pests, diseases and disorders in enclosed environments, including: * greenhouses and shade house * closed canopy * manipulating micro climate * biosecurity procedures to prevent transferring infections/infestations in the system * importance of record keeping to build understanding of pests and disease development, prevention and control. |

| Assessment Conditions |
| --- |
| Assessment of the skills in this unit of competency must take place under the following conditions:   * physical conditions: * skills must be demonstrated on an operational permaculture system or an environment that accurately represents workplace conditions * resources, equipment and materials: * use of reference materials * use of tools and equipment * use of recording systems * use of treatments and biological agents * specifications: * use of workplace procedures and processes * access to safety data sheets * use of specifications for infestation/infection threshold * access to specific organic and permaculture standards.   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 |