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| <b>Title</b> | <b>Demonstrate knowledge of tree health in New Zealand forest plantations</b> |                |          |
| <b>Level</b> | <b>3</b>  | <b>Credits</b> | <b>5</b> |

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| <b>Purpose</b> | People credited with this unit standard are able to: describe the potential effects of disease, insect infestation, and other disorders on a New Zealand forest plantation; describe the pathways of entry of exotic organisms into New Zealand forest plantations and the importance of biosecurity at ports of entry; identify the signs and symptoms of tree health disorders in New Zealand forest plantations; demonstrate knowledge of the requirements for reporting suspected forest health disorders in New Zealand forest plantations and prepare samples for dispatch; and describe legislation relevant to, and organisations involved in forest plantation protection in New Zealand. |
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| <b>Classification</b> | Forestry > Forest Health Surveillance |
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| <b>Available grade</b> | Achieved |
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### Guidance information

- 1 People completing this unit standard may work in the forest industry or have attended a forest health field trip.
- 2 Legislation relevant to this unit standard includes the: Biosecurity Act 1993 and any subsequent amendments.
- 3 References:  
Colley, M. Ed. *New Zealand Institute of Forestry Handbook*. 4<sup>th</sup> ed. (Tauranga: Design and Print Management Ltd, 2005).  
Chapman, S. *Field Guide to Common Pests, Diseases, and Other Disorders of Radiata Pine in New Zealand* (Rotorua: Forest Research, 1998), available at <http://www.scionresearch.com/>.

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### Outcomes and performance criteria

#### Outcome 1

Describe the potential effects of disease, insect infestation, and other disorders on a New Zealand forest plantation.

#### Performance criteria

- 1.1 The vulnerability of forest plantations in terms of susceptibility to spread of disease and insect infestation is described.
- 1.2 Methods of early detection of disease and insect infestation in a forest plantation are described in accordance with the reference texts.
- 1.3 The potential economic impact of serious tree health disorders in forest plantations in New Zealand is described in accordance with the reference texts.
- 1.4 The cost of control measures for *Dothistroma pini* in New Zealand is described in accordance with the reference texts.
- 1.5 An example of a pest or disease not yet established in New Zealand that could have a serious impact on a New Zealand forest plantation is described.

## Outcome 2

Describe the pathways of entry of exotic organisms into New Zealand forest plantations and the importance of biosecurity at ports of entry.

### Performance criteria

- 2.1 The entry pathway of *Dothistroma pini* to New Zealand is described in accordance with the reference texts.
- 2.2 Entry pathways of pests and diseases that may affect New Zealand forest plantations are described.  
  
Range containers, ships, seeds, plant material, animals, humans.
- 2.3 The probable entry pathway of Painted Apple Moth into New Zealand is described.
- 2.4 The importance of biosecurity screening at ports of entry of people and goods to New Zealand is described in accordance with the reference texts.

## Outcome 3

Identify the signs and symptoms of tree health disorders in New Zealand forest plantations.

### Performance criteria

- 3.1 The signs and symptoms of disorders of forest tree foliage are identified from actual examples, or from the reference texts.  
  
Range discolouring, banding, chewing, webbing, wilting, distortion.

- 3.2 The signs and symptoms of disorders of forest tree branches are identified from actual examples, or from the reference texts.
- Range dieback, breakage, distortion, canker.
- 3.3 The signs and symptoms of disorders of forest tree stems are identified from actual examples, or from the reference texts.
- Range holes, scars, ringbarking, resin bleeding, canker, distortion, staining.
- 3.4 The signs and symptoms of disorders of the roots/butt of forest trees are identified from actual examples, or from the reference texts.
- Range surface fungal growth, fungal growth under bark, resin bleeding.
- 3.5 The signs and symptoms of disorders of felled logs are identified from actual examples, or from the reference texts.
- Range wood boring, bark loosening, staining, discoloring of cut end, fungal growth on cut end.

#### **Outcome 4**

Demonstrate knowledge of the requirements for reporting suspected forest health disorders in New Zealand forest plantations and prepare samples for dispatch.

#### **Performance criteria**

- 4.1 The importance of accurate information on the site/location of suspected forest health disorders is described in accordance with the reference texts.
- 4.2 The type of information required to be included in a Forest Health Report is described in accordance with the reference texts.
- 4.3 A sample of tree foliage is prepared for dispatch to a diagnostic laboratory in accordance with the reference texts.
- 4.4 An insect specimen is prepared for dispatch to a diagnostic laboratory in accordance with the reference texts.

#### **Outcome 5**

Describe legislation relevant to, and organisations involved in forest plantation protection in New Zealand.

#### **Performance criteria**

- 5.1 The purpose of the Biosecurity Act in relation to forest protection is described.
- 5.2 The functions of the New Zealand Forest Owners Association – Forest Biosecurity Committee is described.

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| <b>Planned review date</b> | 31 December 2024 |
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#### Status information and last date for assessment for superseded versions

| Process      | Version | Date              | Last Date for Assessment |
|--------------|---------|-------------------|--------------------------|
| Registration | 1       | 26 October 2005   | 31 December 2020         |
| Review       | 2       | 18 September 2009 | 31 December 2017         |
| Review       | 3       | 10 December 2015  | N/A                      |
| Review       | 4       | 23 July 2020      | N/A                      |

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| <b>Consent and Moderation Requirements (CMR) reference</b> | 0173 |
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Competenz [qualifications@competenz.org.nz](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.