



## RISK BACKGROUND

### *Pinus* spp. and *Pseudotsuga* spp. seed for sowing

#### Overview



Pine cone of *Pinus pinea* and seed<sup>1</sup>

*Pinus* and *Pseudotsuga* seeds that are imported for sowing require an import permit and must be:

- grown and sourced from a country that is free from pine pitch canker
- heat treated or immersed in a sodium hypochlorite solution.
- labelled with the full botanical name
- packed in clean, new packaging
- compliant with Australia's seed purity requirements to minimise contaminant risks
- inspected on arrival

Importers and department staff must ensure that all BICON conditions are met and that goods are free from biosecurity risks, as well as the key risks described below.

## Key risks

*Pinus* and *Pseudotsuga* spp. seed for sowing can harbour seed-borne pathogens of biosecurity concern, as well as a range of risk material.

### Pine pitch canker



Diseased Pines affected by *Fusarium circinatum* (Pine pitch canker) <sup>2,3</sup>.

*Fusarium circinatum* (telemorph *Gibberella circinata*), the causal agent of pine pitch canker disease.

Pitch canker is a significant disease of forest and urban trees not recorded in Australia. It is a significant quarantine pest for Australia, and is currently ranked number 38 on Australia's list of National Priority Plant Pests. In 2007, there were 1,010,000 ha of coniferous forest plantations in Australian territory of which 75 % is planted with *Pinus radiata*. This resource is considered to be most at risk should pitch canker be introduced into and establish in Australian territory.

The disease is characterised by wilting, fading of needles on branch tips, and copious amounts of resin at or near the infection site. Needles become yellow, then red, and fall from the branch. Infected wood is slightly sunken and honey-coloured, with resin. Trees can suffer crown dieback or may die, and damping off of seedlings in nurseries.

The department has regulated *F. circinatum* in imported *Pinus* seed since the mid 1990's. These import conditions are reviewed on a regular basis. Since those regulations were put in place, pine pitch canker has spread to many parts of the world with Australia and New Zealand now being the only two major pine plantation countries that are free from pine pitch canker. The fungus persists inside the seed, and even extremely low numbers of infected seed can result in *F. circinatum* spreading to new areas. While a range of seed treatments have been published in the scientific literature, there are currently no treatments available to totally eliminate the fungus from seed. As a result, pine seed must be sourced from countries free from pine pitch canker.

More information on pine pitch canker is detailed on the [department's website](#).

### Other pathway risks

Imported seeds may harbour a range of other biosecurity risk material, including live insects, disease symptoms, and contaminants such as soil, weed seeds, hitchhiker pests and trash (e.g. pine needles). These biosecurity risks are managed through standard seed import conditions, including on-arrival inspection of all consignments as required under import conditions.

<sup>1</sup> Wikipedia, n.d. '[Stone Pine](#)' (accessed 15 July 2020).

<sup>2</sup> University of California Agriculture & Nature Resources, 2019, '[Pitch Canker](#)'. California, Accessed 15 July 2020

<sup>3</sup> San Francisco Public Works n.d., '[Pine Pitch Canker Recommendations](#)', San Francisco, accessed 30 June 2020