



RISK BACKGROUND

Foeniculum vulgare seeds for sowing

Overview



Figure 1. *Foeniculum vulgare* seed ¹

Foeniculum vulgare (fennel) seeds that are imported for sowing require an import permit and must be:

- 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
- treated and/or tested in accordance with Australian requirements.

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

Seeds of *Foeniculum vulgare* (fennel) can harbour seed-borne pathogens of biosecurity concern, as well as a range of biosecurity risk material.

'*Candidatus Liberibacter solanacearum*'

'*Candidatus Liberibacter solanacearum*' is not known to occur in Australia and is an economically important pest of apiaceous crops. The bacteria is seed-borne in *Foeniculum vulgare*² but can also be transmitted by multiple psyllid vectors³. Imported fennel seed is a potential pathway through which this bacteria may enter Australia. More information on this pathogen can be found at department's [Final pest risk analysis for '*Candidatus Liberibacter solanacearum*' associated with apiaceous crops](#).

Australia manages the biosecurity risks posed by '*Ca. L. solanacearum*' by requiring imported host seeds to be hot water treated or tested and found free of the bacteria prior to release from biosecurity control.

Cercospora foeniculi

Cercospora foeniculi is a seed-borne fungal pathogen that infects all parts of the fennel plant. Infection can result in yield losses and reduced seed production. In severe cases, the fungus causes Cercospora blight disease⁴, which has the potential to impact domestic spice production in Australia. The risk associated with *C. foeniculi* in imported fennel seed for sowing is mitigated to meet an appropriate level of protection for Australia, through the application of broad-spectrum fungicide.

Other pathway risks

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

Document information

Version	Date	Details of amendment
1.0	30 March 2021	First publication of document.

¹ Hurst, S (n.d), [Foeniculum vulgare Mill. Sweet fennel](#), United States Department of Agriculture, accessed 24 February 2021

² Ministry for Primary Industries 2017, *Interception of 'Candidatus Liberibacter solanacearum' haplotype D on an Australian consignment of fennel seeds*, Growing and Protecting New Zealand.

³ Teresani, G, Hernández, E, Bertolini, E, Siverio, F, Marroquín, C, Molina, J, Hermoso, N, de Mendoza, A & Cambra, M 2015, 'Search for potential vectors of *Candidatus Liberibacter solanacearum* population dynamics in host crops', *Spanish Journal of Agricultural Research*, vol. 13, p. 11.

⁴ Khare, MN, Tiwari, SP & Sharma, YK 2014, 'Disease problems in fennel (*Foeniculum vulgare* Mill) and fenugreek (*Trigonella foenum graceum* L.) cultivation and their management for production of quality pathogen free seeds', *International Journal of Seed Spices*, vol. 4, pp. 11–7.