Australian Government
Department of Agriculture, Water and the Environment

RISK BACKGROUND

Coffea spp. seed for sowing

Overview

Coffea spp. seeds that are imported for sowing must be accompanied with a valid import permit, and must be:

- labelled with the full botanical name
- packaged in new, clean packaging
- inspected on arrival
- treated to manage insect and fungal risks
- directed to a post-entry quarantine (PEQ) facility for disease screening.

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

Figure 1: Mature coffee (*Coffea arabica* L.) seeds[1].

Key risks

Imported seeds may harbour a range of biosecurity risk material, including live insects, disease symptoms, and contaminants such as soil, weed seeds, hitchhiker pests (e.g. khapra beetle) and trash. Seeds of *Coffea* spp. can also harbour pathogens of biosecurity concern, as described below:

Coffee Bean Borer

The coffee bean borer (*Hypothenemus hampei*) is a high priority pest for the Australian coffee industry. Adult females bore into ripe coffee berries and eggs are laid inside. Eggs hatch within a week and the larvae begin eating the beans from the inside. This pest is difficult and expensive to control once established. The biosecurity risk of this pest in imported seed is mitigated through mandatory fumigation or cold storage treatment.

Figure 2: The damage caused by coffee bean borer (*Hypothenemus hampei*). Accumulation of frass from larvae (left); size of adult *CBB*, about 1.5 mm long, relative to a coffee bean (middle); damage observed in mature coffee beans (right), a few bored beans reduces quality of the entire consignment[2].

Coffee Leaf Rust and Powdery Rust

These rust disease are caused by the fungal pathogens *Hemileia coffeicola* and *H. vastatrix*, respectively. Both diseases are economically important as they result in premature leaf drop, which leads to low yields. Spores may be present on the seed surface, hence the biosecurity risks posed by these fungal pathogens are managed through broad-spectrum fungicide treatment.

Bacterial Blight of Coffee

Bacterial blight caused by *Pseudomonas syringae* pv. *garcae* affects the whole plant, including flowers, fruit and leaves, and results in significant production losses. As coffee seeds can contain viable inoculum[3], the biosecurity risk of this pathogen is managed through growth and disease screening in PEQ.

[1] USDA, NRCS. 2019. The PLANTS Database (http://plants.usda.gov, 2019). National Plant Data Team, Greensboro, NC 27401-4901 USA.

[2] Jackson, G. (2020). Fact sheet - Coffee berry borer (118).PESTNET (http://www.pestnet.org/fact_sheets/coffee_berry_borer_118.htm).

[3] Belan L.L., Pozza E.A., de Oliveira Freitas M.L., Raimundi M.K., de Souza R.M. and da Cruz Machado J., 2016, "Occurrence of *Pseudomonas syringae pv. garcae* in coffee seeds", Australian Journal of Crop Science, Vol 10, Issue 7, pp 1015-1021.