



## RISK BACKGROUND

### *Cucumis melo* seeds for sowing

#### Overview



Figure 1: *Cucumis melo* seeds<sup>1</sup>

*Cucumis melo* (melon) seeds imported for sowing do not require an import permit, however consignments must be:

- labelled with the full botanical name
- in new, clean packaging
- compliant with Australia's seed purity requirements
- inspected on arrival
- treated and tested according to Australian requirements

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

#### Key risks

Seeds of *Cucumis melo* can harbour seed-borne pathogens of biosecurity concern, as well as a range of biosecurity risk material.

##### Tobamoviruses

Tobamoviruses are generally considered to be seed-borne, and can be transmitted by mechanical contact. These viruses are also highly stable and remain for months to years in plant debris and contaminated soil.

*Cucumber green mottle mosaic virus* (CGMMV) is a tobamovirus that produces mottle and severe mosaic symptoms on infected plants (Figure 2). This may result in severe reductions in fruit yield and quality, leading to serious economic losses in host crops. Australia manages the biosecurity risks posed by CGMMV by requiring the seeds of cucurbitaceous hosts to be tested and found free from this virus, prior to release from biosecurity control.



Figure 2. Mottling of leaves and fruit due to CGMMV infection in melon crops<sup>2</sup>



Figure 3. Leaf spots caused by MNSV<sup>3</sup>

##### Melon necrotic spot virus

*Melon necrotic spot virus* (MNSV) is seed-borne in *Citrullus lanatus* and *Cucumis melo*, and is known to infect a wide range of cucurbit hosts. Infections are characterised by systemic necrotic spots on leaves and has the potential to cause significant impact on plant health, yield and fruit quality. The biosecurity risk of MNSV being introduced in imported host seed for sowing is reduced to very low through mandatory seed testing, to confirm that seed lots are free from this pathogen.

## ***Diaporthe cucurbitae***

*Diaporthe cucurbitae* (formerly *Phomopsis cucurbitae*) is a fungal pathogen that causes black rot disease in economically important cucurbit crops. This pathogen is seed-borne in *Cucumis melo* (melon) and *Cucumis sativus* (cucumber) and could enter Australia through trade of infected seed. Depending on the host, infection may result in irregular sunken lesions on fruit and stem cankers. The application of broad-spectrum fungicide on imported seed reduces the biosecurity risks of *D. cucurbitae* to meet an appropriate level of protection for Australia.

## **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 (e.g. [Khapra beetle](#)) 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.

<sup>1</sup> McDonald, M, Bennet, M, Evans, A & Sites, A (n.d.), [Seed ID Workshop: Members of the Cucubitaceae Family](#), Department of Horticulture & Crop Sciences, Ohio State University, accessed 18 May 2020.

<sup>2</sup> Cucumber Green Mottle Mosaic Virus (CGMMV) National Management Plan (2016).

<sup>3</sup> Tesoriero, L (n.d.) [Fact Sheet: Melon Necrotic Spot Virus](#), Plant Health Australia, accessed 19 June 2020.