



RISK BACKGROUND

Citrullus lanatus seeds for sowing

Overview



Figure 1: *Citrullus lanatus* seeds¹

Citrullus lanatus (watermelon) 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
- 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 *Citrullus lanatus* 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.

In cucurbitaceous hosts like watermelon, *Cucumber green mottle mosaic virus* (CGMMV), *Kyuri green mottle mosaic virus* (KGMMV) and *Zucchini green mottle mosaic virus* (ZGMMV) are tobamoviruses that produce mottle and severe mosaic symptoms on infected plants. This may result in severe reductions in fruit yield and quality (Figure 2), leading to serious economic losses in host crops. Australia manages the biosecurity risks posed by these tobamoviruses by requiring the seeds of cucurbitaceous hosts to be tested and found free from these viruses, prior to release from biosecurity control.



Figure 2. CGMMV symptoms in watermelon fruit which includes discolouration and necrosis².



Figure 3. Leaf spots caused by MNSV³.

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 (Figure 3), 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.

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.

¹ 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.

² Cucumber Green Mottle Mosaic Virus (CGMMV) National Management Plan V2 (2016).

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