RISK BACKGROUND

Fresh *Allium* spp. for human consumption

Overview

(Image 1: darkcell (2014), *Newent Onion Fayre 2014* https://flic.kr/p/paxUvN (CC BY-NC-ND 2.0))

Fresh *Allium* spp. for human consumption must be:

- a permitted species and plant part
- subject to pre-export inspection by the exporting country
- accompanied by a phytosanitary certificate
- securely packaged (i.e. insect-proof)
- inspected on-arrival.

In addition to these common requirements:

- garlic bulbs require an import permit.
- garlic bulbs, garlic shoots and *Allium spp*. flowers must also undergo either pre-shipment or on-arrival fumigation
- whole, unprocessed onions, chives and leeks must be from permitted countries only and certified by the exporting country as being grown in areas free from onion smut (*Urocystis cepulae*); and,
- semi-processed Allium products (peeled garlic, shallots and onions) must be appropriately processed and packaged prior to export.

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

Key risks

Onion smut (*Urocystis cepulae*)

Urocystis cepulae (Image 2) is a major fungal pathogen that can cause stunted plant growth, damaged produce and a reduction in production yields. This pathogen affects onions, leeks and shallots, and is currently under official control in Australia. Onion smut causes longitudinal, blackish blisters that expose black, powdery spore masses when they rupture.

Phytosanitary requirements to source host produce from areas free from this pathogen are in place to mitigate the risk of its introduction via imported fresh onions, leeks and shallots.

(Image2: Howard F. Schwartz, Colorado State University, Bugwood.org (2008) http://bugwoodcloud.org/images/384x256/5364050.jpg (CC BY 3.0 US))

Botrytis leaf blight *(Botryotinia squamosa* anamorph *Botrytis squamosa)*

B. squamosa is a fungal pathogen that affects a range of Allium crops, including chives, onions and garlic. The fungus causes leaf spots on leaf tissue, resulting in dieback, blighting and an overall reduction in crop yields. Disease symptoms can be detected during visual inspection at the border, particularly as initial symptoms are characterised by small leafspots with a white centre surrounded by a light green halo. As infection progresses, plant tissue may rot and develop 'fluffy' mycelial growth.

Onion fly (*Delia antiqua*) and bean fly (*D. florilega*)

Onion fly and bean flies are associated with a range of Alliaceous crops such as onions, leeks and garlic. Larval stages tunnel into the plant and feed on the plant tissue and bulbs resulting in damage to the produce. Visible damage from larval feeding is usually evident on infested consignments; the risk of these pests on imported consignments is managed by phytosanitary certification and inspection on-arrival in Australia. The mandatory fumigation requirement in place for unprocessed garlic bulbs also provides an additional measure to reduce the entry potential for these pests on this pathway.

Exotic leaf miners *(Liriomyza spp.)*

Leaf miners such as the vegetable leaf miner (*L. sativae*) may be present on imported fresh *Allium* spp.. *Liriomyza* spp. are generally associated with the foliage of Allium plants; infestation is typically characterised by white 'tunnel-like' markings on foliage or stems. These pests have the potential to be imported as eggs, larvae or adults being present in/on trash or edible, above-ground plant parts such as flowers or stem/shoots. The introduction of exotic leaf miners is mitigated through phytosanitary certification and on-arrival inspection.

Other pathway risks

Imported fresh *Allium spp*. may also harbour biosecurity risk material including live insects, disease symptoms, and contaminants such as weed seeds, non-permitted plant parts, hitchhiker pests and trash. These risks are managed through the import conditions outlined above. Pre-export processing (removal of plant parts that may have been in contact with soil) for semi-processed Allium imports mitigates the risk of soil borne pests and diseases.