

Stakeholder Comments

Final Pest Risk Analysis for pepino mosaic virus and pospiviroids associated with tomato seed

Comments submitted by: Australian Processing Tomato Research Council (APTRC)

Thank you very much for the opportunity to comment on this draft Pest Risk Analysis (PRA). In compiling this submission, the Australian Processing Tomato Research Council (APTRC) has discussed the PRA with growers, processors and seed suppliers involved in the Australian Processing Tomato Industry.

The Australian Tomato Processing industry uses about 200 Kg of imported tomato seed each year. The APTRC does have several comments on, and concerns with, the draft PRA. We will go into each of these in more detail below, but the main points are:

1. There is no clear data presented that supports the statement in the draft PRA that *Columnea latent viroid*, *Pepper chat fruit viroid*, *Tomato apical stunt viroid*, *Tomato chlorotic dwarf viroid* and *Tomato planta macho viroid* do not occur in Australia (PRA, page 1).
2. We seek clarification on the new requirement for approval of offshore testing
3. We seek clarification regarding the comment in 7.3.1 (page 88) that laboratories, especially as to how it will apply to testing currently being done in offshore.
4. We seek clarification regarding the comment in 7.3.1 (page 88) that laboratories and to capacity of the Department to undertake this work.
5. We seek clarification that offshore testing of small seed lots will be allowed under the proposed measures.
6. We seek clarification regarding the comment in 7.3.1 (page 88) that laboratories will not be permitted to pool (batch) samples for testing from small seed lots (less than 300g) or seed batches.

We understand that the Department is proposing implementing phytosanitary measures with a view to minimizing the risk to Australian horticultural production, but the APTRC is also concerned that we must have continued ongoing access to tomato seed imports – given that the entire Australian processing tomato industry is reliant upon imported seed for commercial plantings and genetic improvement.

There is no clear data presented that supports the statement in the draft PRA that *Columnea latent viroid*, *Pepper chat fruit viroid*, *Tomato apical stunt viroid*, *Tomato chlorotic dwarf viroid* and *Tomato planta macho viroid* do not occur in Australia.

According to the PRA (p7) PepMV, CLVd, PCFVd, TASVd, TCDVd and TPMVd are currently considered to be absent from all Australian states and territories. However, many infections cannot be detected by visual inspection, it is difficult to identify PepMV-infected and pospiviroid-infected plants (sections 4.4 and 5.2), and sometimes these plants are asymptomatic. Section 4.4 of the PRA states that the degree of visible disease on the vegetative parts of PepMV infected tomato plants varies widely, with some plants exhibiting severe symptoms, others expressing mild symptoms and some

being symptomless. Importantly, symptomless infected plants and plants with mild symptoms are difficult to recognise and may be missed when crops are inspected. In addition, diagnosis is often difficult as symptoms are often not distinctive and not diagnostic. Different pospiviroids have been shown to cause similar symptoms, which may be further complicated by being similar to symptoms caused by other pathogens or herbicide damage (Blancard 2012; EFSA 2011).

In addition, section 5.2 of the PRA states that seedlings infected with pospiviroid species may not produce symptoms for more than 6 weeks after germination, and some may not produce symptoms at all when grown from infected seeds (Kryczynski, Paduch-Cichal & Skreczkowski 1988; Singh et al. 2009).

Blancard (2012) also states that several viroids, including some of the pospiviroids are mainly symptomless in ornamental species, with the possibility of these plants acting as a reservoir for transmission to tomato crops. This could be of particular concern for those that have been shown to be transmitted by aphids (Blancard, 2012), with aphid numbers across the processing tomato production region often being high during crop establishment (mid September until late November). Confirmation of possible current pospiviroid infections of processing tomato crops in Australia is not likely as symptoms may be similar to those caused by other pathogens or herbicide damage, asymptomatic in ornamentals, or plants may not show symptoms for more than 6 weeks after germination. The only definitive method of identification is via but sampling and laboratory testing. Each season processing tomato crops may exhibit a range of symptoms which are often caused by another pathogen, herbicide damage, or some unknown cause. Plant material from processing tomato crops is very seldom sampled and sent for formal laboratory testing. Hence, without a formal surveillance and testing program it is not possible to confirm that the pospiviroids, in particular PepMV, CLVd, PCFVd, TASVd, TCDVd and TPMVd are in fact absent from the processing tomato production region in Australia.

Testing requirements for pospiviroids

The draft PRA proposes that testing protocols used in off-shore testing (for both PepMV and pospiviroids) will require Departmental approval under any final phytosanitary measures. It is unclear what this will entail, and whether current labs already being allowed to conduct testing offshore will be automatically be approved under any such arrangement. There is no more detail provided on how this requirement will be implemented. This could have a significant impact on seed supply should seed that has already been tested in these labs not be allowed to be imported until the labs have been formally re-approved by the Department, or if the number of approved labs were to decrease. The APTRC recommends that it is important to put in place proper transitional arrangements if the small number of labs currently being used for offshore testing of tomato seed need to undergo a new approval process.

Currently the majority of the commercial seed imported into Australia for the production of processing tomatoes is harvested in the northern hemisphere and then sent to Stockton, California for testing, grading and packaging and then sent to a lab based in the USA for testing. In some northern hemisphere countries production occurs during their winter months, hence harvest of seed crops is not normally finished until March. This seed is then also sent to Stockton for grading and then sent to a lab based in the USA for testing. This time frame is already very tight and any delays in shipments could result in the seed not being available for planting in Australia during the planned

season.

The APTRC is concerned that any additional requirements, a reduction in the number of approved labs, or a backlog of seed testing may further delay the importation of seed into Australia, for both commercial and trial plantings. Thus, resulting in a reduction of the planted area and total industry production or a full season delay in the testing of new cultivars with potentially higher yields or improved quality attributes.

Given that outbreaks of PepMV have not occurred in Australia, and that no data has been provided to support the Australian government's expertise in detecting this virus (and pospiviroids for the that matter) over that of other exporting governments, we would also question the requirement for the Australia Department to approve such methods.

Small seed lots

Section 7.3.1 states that "laboratories will not be permitted to pool (batch) samples for testing from different seed lots or seed batches". The APTRC would like to know whether this applies to small seed lots in addition to commercial lots. Currently for imports of small seed lots into Australia, it is permissible to pool 20% from each of the samples. We would like the current practice to continue. Not allowing pooling of small sample lots for testing will be a huge added cost and disincentive for seed companies to trial new cultivars in Australian field conditions. No plant breeders in Australia are currently performing crosses to produce new cultivars aimed at the Australian processing tomato industry. The industry is currently 100% reliant upon overseas breeding programs for genetic improvement.

Tomato cultivars, bred to suit machine harvesting, have been introduced into Australia largely from the United States. Among the most successful has been UC82B, an open-pollinated (OP) cultivar which was bred in California and proved so adaptable that it was grown widely around the world during the late 80's and early 90's. This cultivar was robust under a wide range of growing conditions, but UC82B was not so impressive in terms of processing quality (particularly soluble solids) and also lacked resistance to most common diseases. A field-based screening program conducted in Australia has been instrumental to the adoption of improved cultivars to the Australia industry, and seen the use of hybrids grow to make 100% of the commercial plantings.

All of the seed used for the production of tomatoes for processing is first generation (F1) hybrid seed produced by cross pollination (hybridisation) of parental lines. Newer tomato hybrids can have better vigour, uniformity, disease resistance and stress tolerance, and to have desirable horticultural traits including early fruiting, longer shelf life and consistent yield (IIGB 2016).

The global processing tomato industry is a highly competitive market. To remain sustainable the Australian processing tomato industry must maintain its awareness and adoption of the latest technologies. Genetics is a key factor for crop performance, as the basis for yield and quality attributes, tolerance to environmental conditions and resistance to pests and diseases.

Because of its small size and the level of funding required, the Australian processing tomato industry does not support a local breeding program. Instead, advanced breeding lines and new commercial releases that promise to meet Australian growing and processing requirements are sought from overseas. Many new cultivars are released annually from across the world. These include earlier

maturity, higher yield and soluble solids, better field holding ability and resistance to diseases such as Bacterial Speck (*Pseudomonas syringae*), Bacterial Canker (*Clavibacter michiganensis*) and Tomato Spotted Wilt Virus. Australian producers cannot afford to ignore the benefits offered by these new cultivars, and the industry has placed a high priority on cultivar improvement.

Most Australian seed companies distribute cultivars from overseas and are keen to promote those to which they have access. Despite their claims of promise for most imported material, local screening trials have historically shown that few lines are suited to Australian growing conditions.

For example, Sun6366 was ranked number 1 in California during the 2011 season (based on planted area) (CTRI 2011), but after small field trials in Australia over a 3-year period (2009/10, 2010/11, 2011/12) Sun6366 was never commercially adopted in Australia. As the processing tomato production region in Australia is subjected to frequent summer rainfall events which will delay harvest, cultivars must have the ability to field store (to obtain consistently high yields in the field) if they are to be commercially adopted. This example of Sun6366 clearly demonstrates the importance of being able to fully evaluate small seed lots of high performing cultivars from overseas in Australian fields prior to growers being encouraged to commercially adopt new cultivars.

As all cultivars used by the processing tomato industry are F1 hybrids, the cost of tomato seed currently equates to between \$250-\$1,000/ha (depending upon crop establishment method, transplants or seed). Currently seed companies provide small seed lots of new high performing cultivars from overseas breeding programs to the industry at no cost for evaluation in our industry-based cultivar evaluation program. The APTRC is concerned that a change to not allow pooling of small sample lots for testing will further increase the cost of seed and will adversely affect the industries access to evaluate high performing cultivars in our field conditions.

As there have not been an increase in the positive tests for PepMV on samples tested onshore, we do not believe that there is any increased risk associated with pooling of small lots.

References

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