

25 August

Tomato/Potato Psyllid and *Candidatus Liberibacter bacterium* Good news from Japan

We were informed by MAF Biosecurity New Zealand late on 11 August that the Japan market is open again for the export of capsicums and tomatoes from New Zealand. This is excellent news for the capsicum industry and especially for those growers who have been committed to building the market in Japan for our high quality high value greenhouse capsicums.

MAFBNZ received confirmation that Japan will allow the recommencement of imports of fresh tomatoes and capsicums from New Zealand without the need for additional quarantine measures. The only additional condition that Japan MAF has put in place is an additional declaration on the phytosanitary certificates that consignments are free of psyllids.

The Japanese focus on the psyllid is very important in relation to our fruit for export. The industry needs to clearly note what Japan has stated in writing: *"...we have concluded that the likelihood that the bacterium concerned will become established and spread in Japan through fresh fruit of tomatoes and capsicums from New Zealand is extremely low. ... However, we are on alert for the introduction of the vector Bactericera cockerelli into Japan as it is a quarantine injurious pest that has not occurred in Japan."*

Australia remains closed

Australia is the major market that remains closed. It will now become the key focus of MAFBNZ's ongoing negotiations. MAFBNZ continues to emphasise with their Australia counterparts the need for a prompt resolution to this issue.

Further details were sent to Biosecurity Australia mid August asking, among other things, that Australian officials visit here as soon as possible to facilitate a speedy and efficient resolution to the current position. Our Minister also met with his Australian counterpart in August and emphasized the significance of resolving market access issues for our solanaceous crops that have arisen due to the bacterium.

French Polynesia and Fiji

MAFBNZ's negotiations are continuing with French Polynesia and Fiji to remove the remaining barriers to trade in capsicums and tomatoes.

MAFBNZ contacted Fijian officials mid August as part of ongoing negotiations to regain market access for tomatoes and capsicum and provided additional and substantive information with a request to get the Fiji market open again soon.

MAFBNZ also contacted French Polynesian officials mid August and asked them to assess existing access conditions for tomatoes and capsicums in light of new information on the psyllid/bacterium relationship, and the previous performance of our export certification system.

New Zealand's export phytosanitary inspection and certification system provides a high degree of assurance that export fruit for consumption is free of the tomato/potato psyllid. This together with the fact that there are no records of the

psyllid being found on New Zealand fruit by trading partners provides proof of the robustness of our systems.

To ensure this situation remains unchanged all growers are reminded to keep on top of their psyllid control programmes. A failure here with regard to performance of the phytosanitary inspection and certification system could cause a significant setback in terms of on-going access, particularly for Japan, and for the negotiations with Australia.

Science Programme

Scientists in the United States have now confirmed the presence of the *Candidatus Liberibacter* bacterium in potatoes in Texas and in tomatoes in California along with the presence of the same tomato/potato psyllid.

The New Zealand science programme being undertaken by MAF remains on track with results due in between early September and early October.

The key questions being investigated in the science programme are:

- Can the bacterium be transmitted from infected ripe tomatoes to plants via the psyllid?
- Is the bacterium transmitted through the seeds of infected plants?
- Is the bacterium transmitted through grafting of infected and healthy plants?
- Is the psyllid–bacterium vectoring relationship in New Zealand similar to or the same as that being described by scientists in the United States?

Survey of properties for the *Candidatus Liberibacter* bacterium and infected psyllids

The limited survey of properties throughout the country, which is now complete, was designed to find the extent of the distribution of the bacterium in tomatoes and capsicums. The survey was later extended to include tamarillos (albeit briefly once positive tests were proven in Auckland) and potatoes (both table and seed).

The bacterium was found in the following regions: Northland, Auckland, Waikato, Nelson and Canterbury. About half the sites surveyed produced positive results for the bacterium. This distribution corresponds with the known general distribution of the psyllid, however not all growers had knowledge of the presence of psyllids on their properties.

In contrast, the bacterium was not detected in all the regions known to have had psyllids present last summer; e.g. Gisborne and Hawkes Bay. The southernmost detection was in table potatoes south of Christchurch.

The bacterium was found in tomato and capsicum plants ranging in age from seedlings to older crops immediately prior to pull out. Detection of the bacterium did not necessarily correspond with symptomatic plants. However symptoms from tomatoes, capsicums and potatoes are reported as being consistent and similar to phytoplasma-like symptoms; e.g. stunting, yellowing deformed leaves. Adhoc testing of some related weeds; i.e. black nightshade (*Solanum nigra*) and apple of Peru (*Nicandra physalodes*) has given negative results to date.

History

The start of this issue with the new psyllid and the bacterium goes back almost three years to late 2005 when the tomato/potato psyllid was first observed in New Zealand.

Early in 2006 the psyllid was formally recognised by MAFBNZ as a pest of Solanaceous plants such as tomatoes, capsicums and potatoes.

Our trading partner countries were informed by MAFBNZ at the time and it is believed that they simply saw the psyllid as another insect that New Zealand had to deal with as the exporter. No new phytosanitary conditions were imposed on us.

Information for growers

The Fresh Tomato Product Group produced a poster and a set of cards about the psyllid & sent them out to all growers along with MAFBNZ's detailed technical broadsheet.

It's probable that most growers at the time put the information in a drawer and forgot about it and the psyllid too. It is strongly suggested that all growers refresh their memories and revisit the material before this spring gets too far along and the psyllid population starts increasing.

All the information is on our websites: www.tomatoesnz.co.nz and www.freshvegetables.co.nz

Where did the psyllid come from?

It is now thought that the tomato/potato psyllid came here from North America, possibly via Hawaii. (It is a good flyer and has been seen flying as high as 5,000 metres.)

It breeds in Mexico and some of the southern states of the USA each spring. It doesn't like hot temperatures and moves north as the season progresses and has been known to travel all the way north up into Canada.

It is documented as causing considerable problems in potato and tomato crops, including greenhouses, for over three years in the USA and Canada.

The problem was seen as 'psyllid yellows' in plants and originally thought only to be caused by the toxic nature of the insect's secretions into the plants.

What happened here last summer?

Roll forward to early this year and the whole situation changed very quickly in NZ. We all had a great summer and so did the psyllid. It spread over most of the North Island and into outdoor crops as well and was found as far south as Nelson and Canterbury.

Some Auckland growers started to see various disease symptoms on plants following a period of feeding by psyllids. The symptoms included yellowing, stunting and deformed leaves and fruit. Initially this was thought to be psyllid yellows caused by the chemicals the insect secretes when it is feeding.

However even when the psyllids were removed from the crops the symptoms persisted and plants did not return to normal growth. There also appeared to be a latent period of several weeks between the psyllid demise and the symptoms appearing in plants.

Tests done overseas didn't find anything so investigations were carried out by MAF's IDC. The result is now well known – a bacterium, thought to be new, of the *Candidatus Liberibacter* species was found in the phloem of tomato and capsicum

plants and fruit and confirmed by MAFBNZ to Industry in late May. The rest as they say is history and as documented above.