

## Comments on the draft report for the non-regulated analysis of existing policy for apples from New Zealand

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**Submission to Biosecurity Australia** by the Department of Primary Industries

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The Draft report for the non regulated analysis of existing policy for apples from New Zealand states (p 119)

"The conclusions presented in this draft report are that when the New Zealand apple industry's standard commercial practices for production of export grade fruit are taken into account, the unrestricted risk for all three pests assessed achieves Australia's appropriate level of protection. Therefore no additional quarantine measures are recommended"

New South Wales has numerous points of concern, comments and questions which arise through the paper and from the conclusions which are presented.

The discussion on European canker has been examined in more detail than the other pests in the report but many of the comments made in relation to European canker are applicable to fire blight and apple leaf curling midge.

For example:

European canker was detected and eradicated from six blocks in four orchards at Spreyton, Tasmania from 1954 to 1991 (p 93), a period of 37 years. Even though this incursion was small in scale, a very long eradication response program was required.

This indicates that the impact of an outbreak of European canker in Australia is likely to be serious because

- o eradication will be a long term project;
- all apple varieties are susceptible to some degree ("no variety is immune" p93) and 20 common and significant amenity trees are listed as hosts (p 100); and
- European canker is not contained by current orchard management practices in NZ (p 94)

European canker is spreading in New Zealand (p 94) despite the claim that current orchard management practices are sufficient to minimise risks of transfer to Australia.

Updated survey data is required to indicate trends in European canker occurrence rather than a static report from 1990 (21 years ago) that "2% of [apple] sites were infected" (p 95). Updated surveillance should also include amenity plantings of susceptible hosts and any naturally occurring hosts.

More than 28% of New Zealand's current export trade occurs from areas where European canker is endemic and where disease expression may be latent and undetected in some seasons. Places of production free of exotic plant pests should be the minimum standard for affected commodities proposed for export to Australia where European canker does not occur. Setting a minimum requirement of pest free places of production is supported by fire blight research. The report notes that "for orchards without fire blight symptoms, no *Erwinia amylovora* bacteria were detected from a sample of 4000 fruit" (p 32). Achieving this standard will present a challenge for New Zealand growers when 93% of the export crop is produced in endemic fire blight areas (p 48) but important for maintaining Australia's fire blight free status.

European canker has spread in New Zealand, presumably through movement of infected planting material (p 95). So, if the disease enters and establishes in Australia then spread will also be highly likely to occur as movement of host plant materials is not restricted in Australia.

A wordy paragraph (p 95) was used to conclude that apple fruit *can* be infected with European canker – "at the blossom end", "at the stem end" and "on the fruit's surface". The fungus may also occur in the seed cavity and around the seeds (p 95). As this part of the fruit is unlikely to be consumed, and the amount of fruit left around discarded cores is sometimes quite large, the infected core is highly likely to be discarded and sufficient material may be available for the fungus to remain viable and develop further.

In discussing the association of the pest with the commodity pathway, the report notes that the probability of entry of European canker is lowered because the fungus is suppressed by higher levels of benzoic acid in immature fruit and that as acidity decreases and sugar levels increase with ripening the fungus resumes growth (p 96). The application of this point to imported mature fruit is not made, neither is the logic explained of the sentence immediately following which deals with rainfall and temperature.

The claim is made that "European canker rots are not an important issue in New Zealand apples" (p 97). This offhand dismissal of the perception of the situation in New Zealand does not address Australian concerns that European canker rots are an important issue here (one component of evidence being the 37 year eradication program in Tasmania).

The same idea is repeated in the section on packing and storage which claims "storage rots are not a significant issue in New Zealand" (p 98).

- The risk analysis report should be assessing risk from an Australian perspective, not from the New Zealand perspective
- Risk to Australia should not be dismissed simply because it is "not a significant issue in New Zealand"
- How is the level of 'significance' assessed in this statement? No indications are given as to when something becomes significant or not. If significance relates to perception, then both European canker and fire blight are significant issues for Australia.

The essence of the argument appears to be that if you have a suite of diseases present, one more doesn't matter. This approach is fallacious.

It appears that Pipfruit NZ Inc registers export orchards and oversees fruit production and pest management programs. If Pipfruit NZ Inc is the major grower body lobbying for apple exports into Australia, might not this case illustrate the metaphor of the fox guarding the henhouse?

In discussing commercial production practices in New Zealand, the comment is made (p 22) that the principal emphasis of the integrated fruit production program is not biosecurity but "managing chemical residues to the lowest levels possible".

The integrated fruit production program appears to be a variant of the integrated pest management systems used in Australia. However, technical advisers note that integrated pest management is not and should not be considered a biosecurity measure. The reason is that the approach usually leads to an increase in insect and disease biodiversity in the orchard. Monitoring and the withholding of insecticide and fungicide sprays until critical parameters are met often means that there are more likely to be secondary pests and diseases present.

The report states (p 97) that pest management programs "limit the prevalence of European canker in trees". The report does not claim that pest management programs exclude the presence of this disease. It is therefore even more important that European canker is absent from every orchard, or at a minimum, every block, proposing to export fruit to Australia.

Related comments reveal a persistent and underlying pest prevalence for apple leaf curling midge (p 75) and prompt the conclusion that "there is potential for some consignments of apples from New Zealand to contain apple leaf curling midge pupae that are viable and remain undetected during the minimal onarrival quarantine processes at the Australian border" (p77).

In addition to the potential for apple leaf curling midge to survive on the mature fruit pathway, the conclusion is of concern because it highlights that on-arrival border quarantine is minimal and appears to accept the inadvertent entry of a contaminant biological control parasitoid without subjecting it to pre-release impact assessments in the Australian environment.

Export orchard management practices should be standardised and mandated, not merely recommended suggestions. *Recommendations* have been made for each of three key pests in this report and this loophole needs tightening.

For example, sampling for apple leaf curling midge is "recommended" (p24).

With regard to management of fire blight (p 22), the report notes

- chemical control treatment is a discretionary decision made by orchard managers, despite fire blight being acknowledged as "the most serious bacterial disease affecting *Malus* spp. (apple)" and other horticulture and amenity plants (p 30)
- "immediate pruning of 'shepherd's crooks' also seems to be treated as a discretionary action by some orchard managers who apparently deem it "not necessary" (p 23)
- Pantoea agglomerans (synonym Erwinia herbicola) is applied commercially as a biological control agent to compete with Erwinia amylovora for infection sites. Does E. herbicola cause disease and if so are the symptoms and the causal organism readily distinguishable from fire blight?

New Zealand "best practice" recommends "removal of cankered wood and the application of fungicides" (p 98) and, for fire blight, that "symptomatic shoots or branches are pruned out" (p 23).

The difference between the New Zealand situation and the Australian context is that European canker and fire blight do not occur in Australia but are endemic in New Zealand. Would Australia accept removal of cankered wood if European canker was detected in an Australian orchard? The Tasmanian European canker eradication program indicates otherwise.

A similar response would be expected if fire blight were to be detected in an Australian orchard. Australia's recent response to the bacterial disease citrus canker in Queensland is pertinent because, as fire blight, the causal organism is a bacterium. The citrus canker eradication response demanded quarantine of infected premises, movement restrictions and extensive destruction of all host plants on infected premises and large buffer areas. Eradication was achieved at great cost to industry and growers<sup>1</sup>. The expectations of Australians and domestic practice are at odds with trade proposed from properties where fire blight, or European canker, is present.

The claim is made that "standard packing house procedures will remove fruit that does not meet export quality requirements" (p 98). Are "standard packing house procedures 100% effective? Diseased specimens are frequently encountered in retail displays of fruit for sale, and, disappointingly, can easily be purchased, providing opportunity for diseases to be spread.

The report is lax in not requiring New Zealand apples to be exported in retail ready boxes or trays only. Allowing for the possibility of fruit to be imported in bulk bins for repacking in Australia, even if "only a small volume" (pp 49, 100), is unacceptable.

<sup>1</sup> <u>http://www.daff.gov.au/aqis/quarantine/naqs/naqs-fact-sheets/citrus-canker</u> Accessed 20/06/11

No indication is given in the report as to where (or even whether) the breakdown to retail packing of apples imported in bulk bins will occur. Is it proposed that existing packing sheds in fruit production areas in Australia be used? Where and how will any waste be disposed of?

If "the majority" of fruit can be exported in retail ready packaging modes why not all the fruit?

Retail ready packaging:

- is less likely than bulk bins to contain trash fragments and provide harbourage for pests
- provides direct tracing evidence for the consumer of a product's origin. Country of origin is less likely to be obscured by labelling that may be misinterpreted.

Twenty common and often prominent amenity tree species are listed (p 100) as suitable hosts for European canker, in addition to commercial apples and pears. Three more hosts, added subsequently (p 107), include loquat which is widely distributed as a garden – and garden escape – tree. Loquat is also a listed host for fire blight (p 49).

The host lists for European canker and fire blight are linked to a generalised claim that "the majority of the population (and therefore the majority of apple consumption) is in the capital cities that are significant distances from most commercial apple and pear orchards" (pp 49, 100). In both cases, the claim is dismissive of disease risks that might occur in apple production areas, even if only due to a minority of the population, and (imported) apple consumption, being present.

A later statement (p 100) in the context of discarded waste is also too narrow in focus as it only examples host "fruit trees and ornamental plants ... in household gardens" and does not consider prominent hosts in urban streetscapes and avenues, parklands and civic gardens.

The comment about "apple waste disposed of in compost" (p 101) seems to assume that all composting is undertaken properly. This is unlikely to be the case.

Probability of establishment is discussed and the comment made that in the Tasmanian incursion the fungus did not complete "its entire life cycle" (p 107). This statement may be misinterpreted as a limitation of pathogenicity, but in the context of fungal pathogens the converse is true because many very destructive fungal pathogens are represented only by their asexual states.

The report acknowledges latent infection and symptomless expression of disease as primary means of disease spread (p 109) and would affect local pome fruit industries if the pathogen were to become established in Australia. Jurisdictions in Australia do not regulate the movement of apple planting material. The flexibility of current movement arrangements would be threatened and regulations imposed if European canker were to be detected in any jurisdiction.

Cold threshold temperatures for apple leaf curling midge development are not presented and there is no data on the effects of commercial cold temperature storage. The report acknowledges that storage of fruit might vary from a few days to weeks (p 27) but also mentions that, with regard to cold temperature and midge diapause "definitive studies have not been completed for *Dasineura mali*" (p83). Knowing the temperature thresholds for midge development and survival and the effect of storage are critical to assessing risks that might arise from this pest being on the apple fruit pathway.

The report estimates the consequences risk rating for European canker as low (p 110). In the 2006 draft risk analysis report the consequences estimate was moderate. The difference between the two assessments may be due to revision and realignment of the consequences decision rules but other reasons could apply. There is no discussion in the current report to explain the revised assessment of consequences. In contrast, both the 2006 report and the current draft report estimate the consequences of fire blight as high and the consequences of apple leaf curling midge as low.

The method of multiplying assessed risks always ensures that whenever a component in the equation is determined to be extremely low, the overall assessment will be forced downwards, probably so that the unrestricted risk outcome would not exceed Australia's appropriate level of protection set at very low and resulting in the outcome that mitigation measures will not be required.

In the discussion on pest risk management the statement is made that "any lot found to be infested with leafrollers or mealybugs is to withdraw from export to Australia or Western Australia, depending on the pest(s) detected" (p 120). The context is that "any lots found to contain mealybugs [are] to be withdrawn from export to Western Australia but does this mean that mealybug infested fruit is able to be knowingly imported elsewhere into Australia?

There is a widely held perception that the cumulative longer term risks for exotic pests and diseases assessed as being acceptably low in the short term will inevitably lead to the introduction of these organisms over time and that this longer term risk should be more strongly factored into the risk determination.