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Animal and Plant Health Inspection Service

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Dr. Vanessa Findlay
General Manager Horticulture
Plant Biosecurity, Biosecurity Australia
Department of Agriculture, Fisheries and Forestry
Canberra Australia

Dear Dr. Findlay:

Thank you for the opportunity to comment on Biosecurity Australia's (BA) May 2011 report entitled "Draft Report for the Non-regulated Analysis of Existing Policy for Apples from New Zealand." We are pleased to offer our comments on this analysis of existing policy and the revised risk analysis which supports it. Our specific comments will address BA's analysis of fire blight and BA's proposed mitigations for New Zealand apples.

FIRE BLIGHT RISK ANALYSIS

The analysis underpinning this review of existing policy is now based on a qualitative assessment of the probabilities of risk rather than the semi-quantitative model used in the original import risk analysis (IRA). However, we believe that two of the risk rankings in this analysis are overestimated. While BA assessed the overall probability of entry of fire blight caused by the bacterium *Erwinia amylovora* (Ea) with imported New Zealand apples as Extremely Low (page 59, "Draft Report: Review of Fresh Apple Fruit from New Zealand"), and the unrestricted risk from fire blight in New Zealand apples as Very Low (page 71, draft report), BA assigned a ranking of Moderate to the likelihood that *Erwinia amylovora* will arrive in Australia with imported New Zealand apples (page 30, draft report), and a ranking of High (page 59, draft report) to the consequences of the establishment of fire blight in Australia.

With regard to BA's Moderate ranking for the likelihood that *Erwinia amylovora* will arrive in Australia with imported New Zealand apples, BA's analysis of this factor considers the prevalence of fire blight in New Zealand apple orchards and the association of fire blight with imported New Zealand apples as a result of the infestation of apple calyces or the infection of apple fruit (page 30). We believe that the Moderate ranking overestimates the likelihood that fire blight will arrive in Australia with New Zealand apples.

While fire blight may be present in some New Zealand apple orchards, mature, symptomless apples - the commodity to be exported to Australia from New Zealand, do not transmit fire blight because mature, symptomless apples are not a pathway for the disease. As the United States explained in *Japan – Apples* (*Japan – Apples (Panel)*, para. 4.82), the scientific evidence indicates that: (1) *Erwinia amylovora* are not

associated internally with mature, symptomless apple fruit; (2) *Erwinia amylovora* are rarely associated externally with mature, symptomless apple fruit, even when harvested from blighted trees and orchards; and (3) even if a mature, symptomless apple were externally contaminated with *Erwinia amylovora*, such bacteria are unlikely to survive normal commercial handling, storage, and transport of fruit.

The first three factors would be considered under the likelihood that apples imported from New Zealand would be a pathway for fire blight bacteria. The scientific evidence indicates that mature symptomless apples do not harbor fire blight bacteria internally and that external bacteria on mature, symptomless apples are rarely found. In a 1989 study, Roberts *et al.* found no internal or external bacteria either in or on the surface of 1,555 mature, symptomless apples harvested from blighted orchards in the State of Washington R.G. Roberts *et al.*, *Evaluation of mature apple fruit from Washington State for the presence of Erwinia amylovora*, Plant Disease 73: 917-921 (1989).

In a study published in 2002 (cited on page 37 of BA's draft report), Dr. Rodney Roberts sampled 30,900 apple fruit and also found no internal disease symptoms (R.G. Roberts, *Evaluation of buffer zone size on the incidence of Erwinia amylovora in mature apple fruit and associated phytosanitary risk*, Acta Horticulturae 590: 47-53 (2002)). As part of that study, nine hundred fruit were sampled at harvest from trees that actually had fire blight disease, but no *Erwinia amylovora* were found when scientists from the Japanese and U.S. governments tested them simultaneously. Moreover, the study evaluated an additional 30,000 apples harvested at various distances from these infected trees for the incidence of fire blight disease development during commercial storage, but not a single apple developed the disease.

Additionally, even if the imported commodity were externally contaminated with *Erwinia amylovora*, there is no dispersal mechanism or vector to allow movement of such bacteria from the fruit to a suitable host (*Japan – Apples (Panel)*, para. 4.82). Imported apples are not a means of transmission of fire blight bacteria because the chain of transmission – from association of bacteria with fruit to bacterial survival of handling, storage, and transport to vectoring of bacteria to a suitable host – is never completed (*Japan – Apples (Panel)*, para. 4.83). This lack of a vector is reflected in BA's analysis of the overall probability of entry, establishment, and spread as Extremely Low.

Finally, BA assessed the likelihood that fire blight could establish and spread in Australia if introduced in imported apple fruit as High based on the availability of suitable hosts and a suitable environment, fire blight's reproductive strategy and potential for adaption, and the presence or absence of cultural practices and control measures for the disease. We believe that these factors have been overestimated, and would like to cite one factor analyzed in BA's report, the availability of suitable hosts, as an example of this overestimation.

On page 59 of its review of existing policy, BA listed 134 plants as potential hosts of fire blight. However, BA cited Dr. J.P. Paulin as stating that "the [10] primary recorded hosts [apple, pear, quince, loquat, hawthorn, cotoneaster, and firethorn] will provide the highest chance of fire blight establishing in Australia (*Australia – Measures Affecting the Importation of Apples from New Zealand – Replies from the Scientific Experts to Questions Posed by the Panel.* World Trade Organization WT/DS367/12, August 9, 2010).

We would like to highlight that Dr. Paulin further observed that "Very likely, the other ones [cited hosts] would play no role in the installation and spread of the disease. In addition, in each of the host species, not all the cultivars are susceptible to fire blight." (*Australia – Measures Affecting the Importation of Apples from New Zealand – Replies from the Scientific Experts to Questions Posed by the Panel* World Trade Organization WT/DS367/12, August 9, 2010)

MITIGATIONS FOR NEW ZEALAND APPLES

In its review of existing policy report (page 119), BA required that New Zealand apple growers and packing facilities implement standard commercial production and packing practices for New Zealand apples to be exported to Australia (described on page 25 of BA'S report). BA's required practices include the maintenance of sanitary conditions in the packing house dump tank and high pressure spray water through the use of sanitizers at label rates that are monitored daily for concentration and ph or an alternative that dump tank and high pressure spray water sanitation is maintained through regular replacement of water.

While the above activities are commercial practices in New Zealand apple packing houses, they should not be requirements for export of apples to Australia. As noted above, the likelihood of entry, establishment, and spread of fire blight via imported mature, symptomless New Zealand apples is Extremely Low. No additional measures, even commercial practices, should be required, for imports of mature, symptomless apples.

We appreciate your consideration of our comments.

Sincerely,

for Murali Bandla Ph. D.
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Phytosanitary Issues Management
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