

Collated responses to questions emailed 9 May 2000

Question	Answer: Tom Deckers (Belgium) 5 June 2000	Answer: J.P. Paulin (France) 17 May 2000	Answer: S. C Wimalajeewa (Australia) 15 May 2000	Answer: L. Pusey (USA) 18 May 2000
<p>Q1: Is there a likely source of risk posed by trade in fruit not addressed by the proposed strategies? If so please provide details.</p>	<p>Dr Deckers has requested that the detail of his comments not be released to the public, due to concern that he may be taken out of context.</p>	<p>No</p>	<p>The only other source I can think of is the stem-end infestations. These could be due to contamination by <i>E. amylovora</i> bacteria as well as very small particles of infected/infested plant debris lodged in the stem end. However, though this is not specifically mentioned in the strategies, these could be regarded as surface contaminations. Unlike with calyx contaminations these could be largely eliminated with chlorine (or other suitable bactericide) dips and with low pressure-high volume water wash of the fruit.</p>	<p>No. Our research strongly indicates that fire blight is not spread by commercial apple fruit, but by propagative material. It is my understanding that under the SPS Agreement, AQIS must base restrictions of trade on sound science and take the least restrictive measures necessary. I am unaware of any scientific evidence to support the restrictions as outlined. Therefore, the proposed strategies have more than adequately addressed all likely and unlikely sources of risk.</p>
<p>Q2: AQIS's current view is that the proposed phytosanitary measures are adequate to implement each related strategy. In view of the available scientific evidence do you agree this judgement is based on sound scientific</p>		<p>Yes may be it could be useful to take into consideration at some stage the <u>cultivars</u> of apple, and their susceptibility to the disease. As you know the <u>differences</u> in susceptibility between cultivars of host species to fire blight is <u>wide</u>, and this aspect should probably be considered (at least formally) in your regulation. This could eventually allow either to avoid import of apples from very</p>	<p>A) The size of the buffer zone is considered inadequate due to reasons pointed out by the Technical Panel in its responses as well as during discussions at recent meetings with AQIS Officers. Also, see comment above under Strategy 2. B) The lack of a cost effective method of measuring <i>E. amylovora</i> levels (in samples of export fruit) required to assist</p>	<p>Based on the scientific evidence, the risk of transferring the fire blight bacterium on healthy mature apple fruit through trade is already extremely low, before implementing any of the proposed phytosanitary strategies.</p>

<p>principles?</p>		<p>susceptible varieties in the case where such varieties are grown in New Zealand and proposed for export, or to give a general recommendation of exporting from New Zealand <u>only certain cultivars</u>, of which you could provide a list, based on the published data on their susceptibility to fire blight.</p> <p>Because I do not know personally which apple varieties are traded (and cultivated) presently from New Zealand, I can not judge if this recommendation has any practical implication now. But this may prevent from future risks, in the case where new very susceptible varieties were proposed.</p>	<p>with risk management in samples is considered a weak point.</p>	
<p>Q3: AQIS's current view is that the proposed strategies are likely to reduce the risk of <i>E. amylovora</i> entering and establishing in Australia to a negligible level. In view of the available scientific evidence do</p>		<p>Yes, if negligible is understood as: of equal magnitude as 'natural' risks of introduction.</p>	<p>While the proposed strategies would reduce the risk of <i>E. amylovora</i> entering Australia, nevertheless, as stated by the Technical Panel, in any year an undetermined level of inoculum will enter the country on consignments of apples from NZ. What is important here is that there is no scientific evidence to prove that calyx/core infestations would</p>	<p>Based on the scientific evidence, the risk of <i>E. amylovora</i> entering Australia on healthy mature apple fruit is negligible without the proposed strategies. Further reduction in risk resulting from the implementation of the proposed measures will be minimal. With either scenario, the risk remains near zero.</p>

<p>you agree this judgement is based on sound scientific principles?</p>			<p>not lead to the establishment of fire blight in a country or region previously free of the disease.</p>	
<p>Q4: Without reducing the level of protection provided or increasing the impact on trade, could the protocol be improved by removing, replacing or modifying any of the proposed strategies or phytosanitary measures? If so please provide brief details and your rationale. If necessary, I will contact you again for more detail.</p>		<p>Strategy 1.1: ‘Historical behaviour of fire blight’ seems to me <u>enough</u> to determine in which zones in NZ fire blight is not prevalent.</p> <p>The use of historical weather data and appropriate models <u>will not</u> be helpful to further demonstrate the safety of export from these zones: these climatic data and models use to provide indications on the <u>mean</u> potential of destruction in a given area, for given cultivars, but they have no ‘predictive’ value for any unexpected infection occurring after some ‘never-seen-before’ climatic accident, or totally unusual series of climatic data (temp./rain/hailstorm). Therefore, my opinion is that, in the present context of New Zealand where fire blight has been established for more than half a century, the use of climatic models <u>will add no safety</u> to the simple (but <u>essential</u>)</p>	<p>These have been considered in preparing the responses provided by the Technical Panel.</p>	<p>The number of inspections could be decreased or eliminated (perhaps one pre-harvest inspection to verify the orchard is not heavily blighted) and the buffer zone eliminated or shortened to no more than 10 meters with essentially no reduction in the level of protection. Further, based on the scientific evidence, it is unreasonable to disqualify an orchard because of one infection. These comments are especially applicable to arid production areas. In the northwestern United States, in no case has the fire blight bacterium been detected in harvested healthy mature apple fruit, even when harvested from diseased trees. The phytosanitary measures, as now proposed, may restrict or prohibit trade because of the associated cost. The restrictions then become a form of trade barrier.</p>

		<p>knowledge of the historical situation of the disease. In addition, I would include in this historical situation, an information on the cultivars which were, as well as cultivars which are now, grown in these zones of weak prevalence: it is possible that a change in the panel of cultivars grown induces a change in the proneness of a given zone to show infection: low risks of infection induced by climatic conditions on <u>resistant</u> cultivars may become <u>moderate</u> or high risks for cultivars of <u>high susceptibility</u> to the disease.</p>		
<p>Q5: If an orchard block (referred to below as a designated export area (DEA)) has been inspected as proposed at blossom, fruitlet and pre-harvest in the year of export and no symptoms are detected, what is the likelihood of there being a source of primary inoculum</p>			<p>As pointed out above under Strategy 2 fruit could carry calyx infestations without showing any symptoms whatsoever. Also, chemical control methods routinely used could control very low levels of disease that may be present to an extent that no symptoms are visible at inspections. However, these methods would not completely knock out sources of inoculum.</p>	<p>The probability is extremely low. However, even if an inoculum source exists, it is not considered as a threat. In the northwestern United States, the fire blight bacterium has not been detected in healthy mature apple fruit, even when harvested from diseased trees. (Inspection at blossom, by the way, is a waste of time, as fire blight will not be expressed until days or weeks after blossom.)</p>

within the DEA?				
<p>Q6: If a DEA is inspected and found free from symptoms, what proportion of fruit harvested would have viable <i>E. amylovora</i> present in that part of the calyx region not accessible to a chlorine dip? Would this figure be less with an additional season of freedom as verified by inspection?</p>			<p>Answer to the first question would be speculative. As to the second question, the levels of infestation would depend on the source of inoculum (whether it is within the orchard or outside) and the weather conditions.</p>	<p>Zero percent. An additional season of freedom would merely add additional unwarranted restrictions.</p>