

# CHAPTER THREE

## THE REVISED DRAFT IRA

### Introduction

3.1 The Committee's predecessor's interim report on the 2000 draft IRA made a number of recommendations.<sup>1</sup> Two key recommendations related to the fire blight disease and the Committee has already noted that these recommendations were not pursued in the current IRA process. This Chapter examines the IRA process and associated risk mitigation protocols, with particular reference to fire blight. It concludes by considering the issue of apple scab and codling moth, a disease and pest of particular concern to the Western Australian industry.

### The revised draft IRA

3.2 The IRA process consists of three main technical stages. These are:

- (i) identification of pests and diseases not present in Australia but potentially transmitted via the commodity;
- (ii) assessment of risks associated with each pest or disease;
- (iii) identification of risk management protocols for pests and diseases where the level of risk they present exceeds Australia's appropriate level of protection (ALOP).<sup>2</sup>

3.3 The pests and diseases for which Biosecurity Australia established risk mitigation protocols are fire blight, european canker, leaf curling midge, leafrollers (four species), wheat bug, apple scab and codling moth.<sup>3</sup>

3.4 All pests and diseases of concern are subject to certain registration and verification processes. These require all apples to be sourced from registered orchards and processed in registered packing houses as certified by the designated New Zealand authority. Further, the post-import AQIS sampling protocol requires the inspection of 600 pieces of fruit per consignment for the presence of quarantine pests/disease, trash and apples that are damaged or not mature.<sup>4</sup>

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1 RRAT Legislation Committee, *The Proposed Importation of Fresh Apple Fruit from New Zealand: Interim Report*, July 2001, pp. xiii – xv

2 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 1

3 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, pp. 3-5. Only Western Australia is free from apple scab and codling moth.

4 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, pp. 490-498

3.5 Biosecurity Australia's risk mitigation protocols relating to the transmission of fire blight are the most contentious, a fact reflected in evidence presented to the Committee. The Committee notes the industry's anxiety over the threat of fire blight. Consequently, this chapter will primarily examine the issues raised in relation to this particular disease threat.

### ***Fire blight***

3.6 Fire blight is caused by the bacterium *Erwinia amylovora*. The disease is the most devastating that affects pome fruit.<sup>5</sup> Called fire blight because of the scorched appearance of its symptoms, the disease is characterised by its robustness during colder weather and virulent activity during spring.<sup>6</sup>

3.7 In their revised draft IRA, Biosecurity Australia noted that the fire blight bacterium could potentially be imported via the following scenarios:

- (i) Through the internal (endophytic) or external (epiphytic) infection of apple fruit, not visible at the time of infection; and
- (ii) The presence of trash material.<sup>7</sup>

3.8 With regard to the risks associated with trash, Biosecurity Australia stated that:

This pathway was not considered in this analysis, because the scope of this assessment is limited to export from New Zealand of mature apples free from trash.<sup>8</sup>

3.9 If the fire blight bacterium were to enter Australia, the IRA argues that several necessary events must occur for it to become established, spread, and ultimately impact on Australia's apple growing industry. In assuming the absence of trash,<sup>9</sup> Biosecurity Australia noted that the bacterium would potentially enter the environment when fire blight-infected apples are disposed of as rotten uneaten fruit, partially eaten apples and cores or peels. Should the bacterium survive, a suitable vector would be required to transmit the disease to a suitable host (of which there are a

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5 This category includes apples, pears, quince and loquat.

6 RRAT Legislation Committee, *The Proposed Importation of Fresh Apple Fruit from New Zealand: Interim Report*, July 2001, pp. 90-92

7 This includes leaves, twigs, soil, timber and splinters left over from the harvesting and packaging process.

8 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 86

9 This assumption is the subject of further discussion at paragraphs 3.12 to 3.24.

large number, including trees other than pome fruit). Biosecurity Australia suggests that the most likely vector would be a browsing insect.<sup>10</sup>

3.10 The critical element in this sequence of events is the likelihood that the bacterium would survive in sufficient quantities to be transferred by a suitable vector. On the evidence outlined in the revised draft IRA, Biosecurity Australia concluded that:

It is highly unlikely that the minimum dose for infection will be found in apple waste.

Taking the ... evidence into consideration it is extremely unlikely that there is continuity in the pathway for dissemination of *E. amylovora* to a susceptible host.<sup>11</sup>

3.11 The Australian industry has questioned a number of aspects of Biosecurity's assessment of the fire blight risk. That is, their calculation of the risk of disease entry and the consequences its spread would have.

## **Assessment Issues**

### ***Trash free imports***

3.12 Perhaps Australian growers' greatest concern with the revised draft IRA is the assessment that apples imported from New Zealand will be free of trash. For Australian growers such an argument ignores the practicalities associated with the "real world" of farming – harvesting, packing and transporting apples.

3.13 The term 'trash' pertains to organic matter superfluous to the actual fruit being exported. In the case of apples, trash essentially includes leaves, twigs, soil, timber and splinters left over from the harvesting and packaging process. Trash material can act as a vector for fire blight, but the revised draft IRA does not consider such a pathway. Instead, it focuses on ensuring that the imported apples are trash free.

3.14 The revised draft IRA provides for trash free apples through:

- (i) Pre-export verification of trash free status by New Zealand's competent authority; and
- (ii) Post-export AQIS inspections.

3.15 On each occasion 600 units of fruit will be inspected, equating to a 95 per cent confidence level that no more than 0.5 per cent of the fruit is accompanied by trash.<sup>12</sup>

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10 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 98

11 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 99

3.16 The Batlow Fruit Co-operative Ltd argued that the IRA's failure to consider the issue of trash:

... is a serious deficiency because of the lack of understanding and commercial reality of picking fruit. It is not commercially practical to avoid some leaf or nodes in the packaged product.<sup>13</sup>

3.17 According to the industry taskforce:

The level of leaves and spurs in any given quantity of fruit will depend on the level of experience of pickers. It is conceivable that with an inexperienced picker over 20% of fruit may have leaves and spurs attached.

In this instance even the best systems in a packing shed are under pressure.<sup>14</sup>

3.18 New Zealand industry representatives did not agree with their Australian counterparts on the inevitability of a trash presence:

You have two opportunities to get trash out of the fruit. One is at the picking stage. If you pick carefully and structure your pickers you can remove the vast bulk of it. The second opportunity is through the packing line. If you have a pretty clean line of fruit, it is manageable. If the requirement for entry to Australia is trash-free fruit, that is what we will deliver.<sup>15</sup>

3.19 They instead framed the issue of complete trash removal as an economic decision; the additional cost of production that would be justified if the market could bear associated price increases:

If the grower or the exporter believes he has a market at a certain price and he can ensure that the trash is removed, he will do it. If he does not, he will not and he will send that fruit somewhere else where perhaps it is not so trash sensitive.<sup>16</sup>

3.20 The Tasmanian Apple and Pear Growers' Association further argued that the inspection of entire apple cartons, rather than individual apples, was essential to ensure imports are trash free:

... the carrier of trash is most likely the carton rather than a piece of fruit and as such the inspection procedure for trash should be 600 cartons not 600 pieces of fruit. Article 5.2 of the WTO SPS agreement specifically

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12 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 497

13 Batlow Fruit Cooperative Ltd, *Submission 30*, p. 5

14 Australian Apple and Pear Industry Taskforce, *Submission 14*, p. 20

15 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 60

16 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 60

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states that "relevant processes and production methods" must be taken into account in any risk analysis.<sup>17</sup>

3.21 The Committee notes that with regard to the New Zealand phytosanitary inspection process the revised draft IRA states that:

All fruit will be removed from each selected carton and the empty carton examined for trash.<sup>18</sup>

3.22 The Committee also notes that evidence of the Australian growers and the New Zealand industry representatives is not completely conflicting. Australian growers indicated that, at the picking stage, trash reduction is dependent on the level of experience of the pickers. New Zealand industry representatives commented of the need to "pick carefully".<sup>19</sup> Clearly, trash free imports would require dedication on behalf of the New Zealand industry.

3.23 Yet the Committee remains concerned that the issue of trash has not been more comprehensively addressed in the revised draft IRA. Biosecurity Australia's effective blanket acceptance that fruit will arrive in Australia trash free because it has been certified as such belies the risk trash poses as an acknowledged vector for fire blight.

### **Recommendation 1**

**3.24 The Committee recommends that Biosecurity Australia requires that the trash free certification process be administered by AQIS officers in New Zealand in conjunction with their New Zealand counterparts.**

#### ***Impact of fire blight on Australian growers***

3.25 When assessing Australia's quarantine risk of pests and disease, Biosecurity Australia can take into account their potential economic impact. That is, the potential harm that may be inflicted by a pest and disease can be considered when assessing the level of quarantine risk that is 'acceptable'. Article 5.3 of the WTO's SPS Agreement states:

In assessing the risks and determining the measures to be applied for achieving the appropriate level of protection, members shall take into account as relevant economic factors, the potential damage in terms of loss of production or sales, the cost of control or eradication and relative cost effectiveness of alternative approaches to limiting risk.<sup>20</sup>

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17 Tasmanian Apple and Pear Growers' Association Inc, *Submission 11*, p. 6

18 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 497

19 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 60

20 WTO SPS Agreement, [www.wto.org/english/tratop\\_e/sps\\_e/spsagr\\_e.htm](http://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm), accessed 5 October 2004

3.26 In the initial publication of the IRA Handbook Biosecurity Australia indicated that a "WTO member must take into account relevant economic factors"<sup>21</sup> when setting its ALOP. This was amended by corrigenda to read "should take into account the objective of minimising negative trade effects".<sup>22</sup>

3.27 Assessing 'acceptable risk' against the consequences of a disease that could be devastating to Australia's apple and pear industry presents an intrinsic dilemma. What risk of disease ought to be borne when its impact could be terminal to many growers?

3.28 In terms of likely economic damage, Biosecurity Australia assessed the consequences of fire blight as high in the revised draft IRA.<sup>23</sup> In accordance with Article 5.3, this included consideration of both production/sales and the costs associated with control and/or eradication.

3.29 Despite this, Australian industry representatives argued that Biosecurity Australia had not properly considered fire blight's potential devastation to Australia's apple and pear industries when determining Australia's ALOP. In particular, there was a perception amongst many contributors that Biosecurity Australia had not given appropriate weight to the extent to which fire blight would flourish amongst Australia's susceptible varieties and warm weather.

3.30 The following comment broadly reflected industry's anxiety over the threat of fire blight:

Fire Blight is more devastating in warmer climates, on new varieties such as Pink Lady. Many Australian apple growing areas are located in warmer climates than New Zealand ... and most of our apple production is from Dwarf Rootstocks. There are large plantings of Pink Lady's in these warmer areas, as this variety grows best in this climate. There has been a large investment in Pink Lady apples in Australia, as it is one of the few hopes for both our domestic and export industry returns.<sup>24</sup>

3.31 The possibility of fire blight thriving in Queensland was of particular concern to that state's growers:

This disease loves warm wet springs. In the countries that have fire blight it is the spring climate that defines where and if they can grow apples and pears. The scientists have done climate modelling and they all agree that fire blight would love the Australian climate. Our own Queensland DPI stated that Stanthorpe would experience up to 16 fire blight infection periods each year. This would wipe out our orchards.<sup>25</sup>

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21 Biosecurity Australia, *Import risk analysis handbook*, Canberra, 2003, p. 5

22 Biosecurity Australia, *Import risk analysis handbook*, Canberra, 2003, Corrigenda

23 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 123

24 Australian Farmlink Pty Ltd, *Submission 17*, p. 2

25 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 53

3.32 Queensland growers also emphasised the highly susceptible nature of the varieties prevalent in the state:

... all the good, new high-value varieties we have planted in the last 15 years are very susceptible to fire blight. It would ruin Stanthorpe. Because of our particular soil and climate, Stanthorpe would not be able to swap to other crops. We have very capital-intensive farms with expensive cold stores, packing sheds and hail netting. We cannot swap to another crop when fire blight strikes.<sup>26</sup>

3.33 In addition to production and sales forgone, the cost of managing the presence of fire blight in commercial orchards also represents a significant additional burden for growers.

3.34 The revised draft IRA states that:

Streptomycin, which is effective against *E. amylovora*, is not a registered chemical for fire blight in Australia.<sup>27</sup>

3.35 Nonetheless, streptomycin is presently the most effective method for controlling the disease. The Committee notes the March 2003 advice of the NRA (see paragraph 1.18) that an Australian fire blight eradication program would involve the short term permissible use of streptomycin. However, this may not be possible in all apple growing regions in Australia.

3.36 For South Australian growers, the proximity of their apple growing regions to major water catchment areas presents a significant problem in combating an outbreak of fire blight:

If we got an outbreak, part of the eradication process would just about go out the door because of our inability to use streptomycin, because the community would be up in arms about us using an antibiotic in a water catchment area.<sup>28</sup>

3.37 The Committee acknowledges the difficulty growers in the Adelaide Hills region, in particular, would face in attempting to control an outbreak of fire blight and that this could signal serious economic difficulties for the region.

3.38 In addition to the cost associated with chemical treatments, the required removal of affected branches/trees would have a significant impact on the viability of the Australian apple and pear industries.<sup>29</sup>

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26 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 53

27 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 116

28 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 46

29 Estimates of the costs associated with the control and eradication of fire blight, undertaken in various studies, are included in the revised draft IRA at p. 120.

3.39 In evidence to the Committee, New Zealand growers attempted to downplay the affect fire blight has on their industry. They maintained costs and production are not drastically affected by the presence of fire blight:

... we have heard for the last five or six years that if you have fire blight that is it for an orchard and that is it for a region and so on. On my orchard I might have 20 strikes of fire blight in 10 acres every year. ... All of those branches cut off and weighed might be 30 kilograms but if you cut out all of my trees there would be hundreds and hundreds of tonnes of wood. In other words a little infection does not really translate into a high number of apples with a high level of bacteria on them. It just does not happen.

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Fire blight is another pest and disease. Of course, as growers we would rather not have it. Does it cost us a fortune? Absolutely not. It costs us absolutely in terms of market access, but in terms of treatment I would not even know what it is per hectare of treatment.<sup>30</sup>

3.40 However, Australian growers maintained that the disease would flourish here due to our more conducive weather conditions:

... because much of Australia is not a cold country, as is New Zealand, we tend to grow apples in the mountains. This means that we have frequent hailstorms in summer. Even small hail creates a wound in apple leaves or fruit as an entry point for bacteria. This type of fire blight is called trauma blight and would be particularly prevalent in Stanthorpe, Orange, Batlow, much of Victoria and in the Adelaide Hills.<sup>31</sup>

3.41 Representatives of Tasmanian growers highlighted the impact of the disease on the export market, focussing on the competitive advantage gained through marketing a 'clean' image:

We are basing most of our exports on our clean, green image. That is a very useful tool in going into very small niche markets.

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Tasmania is the only state in Australia recognised as being fruit fly free. That gives us direct access to the Japanese market, through a reasonably cost-effective protocol to get into that market. It also gives us very good access to markets like Taiwan and other South-East Asian destinations.<sup>32</sup>

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30 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 61

31 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 53

32 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 49



3.42 The Committee notes that Tasmania accounts for approximately 65 per cent of Australia's apple exports,<sup>33</sup> including exports to Japan, a country also attempting to preserve its fire blight-free status.

3.43 The Committee acknowledges the importance of the potential impact of pests and diseases on exporters' access to certain markets. Australia's international competitiveness in the export of agricultural commodities is significantly diminished when exporters can no longer claim their products are sourced from pest and disease free regions. When this special status no longer applies a vital competitive advantage has been lost.

3.44 The Committee is firmly of the view that the entry and spread of fire blight in Australia would have a devastating economic effect on the domestic apple and pear industry, through the consequent loss of production and sales, the loss of access to particular markets and the costs associated with disease control and eradication. It recognises that the Australian industry would be affected to a greater extent than New Zealand due to climatic and varietal differences.

3.45 Both Biosecurity Australia and the Australian industry accept that the establishment of fire blight in Australia would have significant consequences. The revised draft IRA recognises the potential of fire blight to have a serious economic impact on the Australian industry should it become established and spread to apple and pear growing regions. However, the weight given to these consequences within the risk modelling process fails to convey that view.

3.46 While the Committee recognises that this weighting may reflect the balance Australia's biosecurity policy gives in the context of Article 5.3 of the SPS agreement, it believes that it should be revisited in the review that is currently being conducted.

## **Recommendation 2**

**3.47 The Committee recommends that Biosecurity Australia review the weighting given to the economic consequences in its risk modelling.**

### ***Risk Unit in modelling***

3.48 The Committee notes that Biosecurity Australia has used a single fruit unit as the risk unit for the purposes of their risk modelling. In evidence, Biosecurity Australia explained that this approach, rather than applying another unit such as a box, pallet, kilo, or tonne, reflected more accurately the practical realities of the transmission risk:

... some of the risk events that you need to look at do not involve someone driving along the road to Sydney and tossing a pallet load of apples out the window because their kids have just eaten them in the backseat. They

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33 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 118

involve individual apples. People do not go down to the supermarket and walk out with a pallet load of apples. They walk out with a kilo or two or sometimes just one apple and so on.

In the end we concluded by far the best way is to concentrate on the individual risk unit in the shipment, which is the single apple. Some of the scenarios may allow for the potential that a single apple could start the disease. It is not going to be a pallet load landing under the tree, it is going to be one or a few apple cores.<sup>34</sup>

3.49 The Committee is concerned that this does not accurately reflect such realities as large scale dumping of produce from retail or service outlets, following such an incidence as the break down of refrigeration facilities.

3.50 The Committee commends the work conducted by Biosecurity Australia in developing a model to make assessments of the risks posed to Australia's quarantine standards by imported products. However, it notes that, as with the development of any new system, there may be some need for some refinements.

3.51 The Committee also received considerable evidence on the appropriateness of Biosecurity Australia's risk management protocols, established in light of the risk assessment, to ensure the risk of pests and disease from imported New Zealand apples falls within Australia's ALOP. Again, the focus of this discussion was fire blight and the adequacy of the protocols pertaining to that particular threat.

### **Risk Mitigation Protocols**

3.52 The revised draft IRA proposes a number of protocols that must be met by New Zealand in the importing of apples to Australia. The three specific measures to manage the risk of fire blight transmission through the importation of New Zealand apples are:

- (i) Fruit can only be sourced from orchards or 'blocks' that do not express symptoms of fire blight;
- (ii) Chlorine dipping in New Zealand pack houses; and
- (iii) Six weeks cold storage.<sup>35</sup>

### ***Fire blight protocols: changes from the previous draft IRA***

3.53 Biosecurity Australia's current proposed fire blight risk mitigation protocols differ markedly from those contained in the 2000 draft IRA. In particular, many protocols relating to fire blight have been dropped for the revised draft. The most significant differences in the protocols are:

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34 RRAT Legislation Committee, *Transcript of Evidence*, Canberra 30 June 2004, p. 38

35 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 4

- Removal of the requirement of a 50 metre fire blight-free buffer zone around registered orchards;
- A less detailed pre-harvest inspection regime; and
- Removal of the requirement for disinfection of harvesting bins.<sup>36</sup>

3.54 Biosecurity Australia officers informed the Committee that the changes from the previous draft reflect the availability of new scientific information:

The panel has had the benefit of a lot of new information and a detailed review of all the evidence surrounding fire blight. There is new research available, and the measures they propose now essentially reflect that current assessment of the risks in the light of all the information available to them.

...

There have been developments in the science between 2000 and 2004.<sup>37</sup>

3.55 The Committee has already noted that its predecessor's recommendation for Australian research on fire blight was not pursued in the revised draft IRA. In Chapter Four it discusses the availability of some of the new science used in the revised draft IRA.

#### ***Lack of detail in risk mitigation protocols***

3.56 During the inquiry, Australian growers expressed concern over the lack of specificity in the protocols proposed in the revised draft IRA. Of particular concern was the measure stipulating that fruit must be sourced from symptomless orchards. The revised draft IRA contains little detail as to exactly how this measure will be enforced, other than to say that the New Zealand authorities will provide assurances to that effect.

3.57 According to the Australian industry, this lack of detailed information presents significant difficulties with respect to:

- (i) judging the effectiveness of protocols; and
- (ii) ensuring appropriate consultation with stakeholders.

3.58 Industry representatives informed the Committee that:

We also have significant problems with the protocols that are proposed ... it is very difficult to work out the efficacy of a protocol when you do not know how the protocol is going to be carried out. A very important part is

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36 These protocols were contained in the 2000 draft IRA and discussed in the RRAT Legislation Committee's *The Proposed Importation of Fresh Apple Fruit from New Zealand: Interim Report*, July 2001

37 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 21

Biosecurity assuming the total risk here. They have to plug a figure into that to feed into this matrix to see whether these protocols drop the level of risk. How they have done it we do not know. We certainly cannot respond to it.<sup>38</sup>

3.59 Biosecurity Australia rejected criticism that the IRA was not detailed enough for being able to provide meaningful comment on it:

I think the measures as described are clear enough for people to be able to comment on whether they consider them to be adequate or not. They are also welcome to comment, if they wish, on the detail of how they consider particular things should or should not be done. They do provide a clear picture of the intended quarantine regime.<sup>39</sup>

3.60 However, Biosecurity Australia admitted to the Committee that details of the practical measures to be taken are yet to be finalised:

It could be more than one inspection. There has been some debate over a period of time about how many inspections you need and what the appropriate time is. The measure is to make sure that the block that fruit is sourced from is free of disease symptoms. The details of how we do that will be discussed with all stakeholders at an appropriate time.<sup>40</sup>

3.61 Biosecurity Australia also emphasised to the Committee that the protocol was not intended to ensure the orchard be completely free of infection, but to reduce infection risk to an acceptable level. Instead, inspections would be relatively easily designed to ensure that orchards are symptom free:

Disease symptoms of fire blight are very distinctive and very easily inspected for in a plot. If the disease is there, you will find it.<sup>41</sup>

3.62 The Committee shares industry's doubts over this aspect of the process. The methodology used in Biosecurity Australia's revised draft IRA assumes that apples will be sourced from orchards free of fire blight symptoms even though the specific protocols to ensure this have yet to be determined. This assumption is crucial to the overall assessment of risk and ought to have a sufficiently detailed enforcement regime as its foundation.

3.63 In the Committee's view the lack of practical detail of the implementation of the proposed risk mitigation strategies not only makes it difficult to assess their effectiveness, but may also compromise the consultation process.

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38 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 13

39 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 15

40 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 16

41 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 16

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### *Inadequacy of risk mitigation protocols*

3.64 Although the Australian industry indicated that assessing the adequacy of the loosely defined risk mitigation strategies is difficult, the Committee nonetheless received evidence commenting on the effectiveness of the protocols.

3.65 A number of Australian growers' organisations questioned Biosecurity Australia's assessment of the effectiveness of the three risk mitigation protocols relating to fire blight. From the practical viewpoint of harvesting and packaging apples, industry representatives expressed a lack of confidence in the protocols to reduce the quarantine risk posed by fire blight to the level assessed by Biosecurity Australia.

3.66 Industry's concerns principally related to the protocol stipulating that fruit could be sourced from symptomless blocks, however perceived deficiencies in the chlorine dipping and cold storage protocols were also raised during the inquiry.

#### *Pre harvest inspection determining disease-free status*

3.67 The revised draft IRA provides that New Zealand would export mature apples only from orchards or blocks free from visible symptoms of fire blight. Of the three specific fire blight protocols, the Committee is of the view that the efficacy of this one is most vital to preventing the entry and spread of fire blight.

3.68 Biosecurity Australia described the measure to the Committee in terms of the required outcome, rather than the process for meeting the requirements of the protocol:

The measure is that the block that the fruit will be sourced from will be free of symptoms. That may require one, two, perhaps even three inspections, but the requirement, the result of the inspection, is that the orchard needs to be free of symptoms.<sup>42</sup>

3.69 Notwithstanding the revised draft IRA's lack of detail as to how inspections might be conducted in practice, industry expressed concern that the presence of fire blight bacteria would not always be visible, regardless of the inspection process. Scientific opinion provided by APAL suggested that:

... it could be there without showing any type of symptom at all. The tree may be infected but it may not show any symptoms; and still the bacteria could migrate into the fruit as an endophytic infection and you will not see it there.<sup>43</sup>

3.70 Even assuming the most rigorous inspection process, industry suggested the protocol is inherently flawed. A major criticism of the pre-harvest inspection protocol

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42 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 35

43 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 24

is the difficulty of identifying certain symptoms of fire blight from an inspection conducted walking at ground level:

There are several types of symptoms. The most prominent is the strikes, where clusters of flowers are infected. The strikes are easily visible. But there are also cankers, which could be about three to five millimetres in diameter or much larger. Our question is: how is anybody going to see these cankers at the top of the tree from ground level?<sup>44</sup>

3.71 Biosecurity Australia acknowledged in evidence that visual inspections may fail to ensure that an orchard was symptomless. However, it rejected any assertion that missed symptoms would make a substantive difference to the overall effectiveness of the strategy:

... you are not going to absolutely ensure that there is not one or a few symptoms left in an orchard if it is going to be based on visual inspection. But the bottom line is: what effect does missing a few symptoms in the orchard have on the final level of bacteria in the apples being sourced from that orchard? The conclusion of the panel was that it has insignificant effect.<sup>45</sup>

3.72 APAL further argued that Biosecurity Australia's pre-harvest inspection fails to properly respond to a number of additional risk factors associated with the production process. These were cited as:

- historical infection of orchards;
- proximity of infected hosts to approved blocks;
- removal of symptoms pre-inspection;
- fruit from non-approved blocks being included;
- the impact of hail prior to harvest;
- cross contamination by machinery; and
- contamination during the packing process.<sup>46</sup>

3.73 Growers emphasised their concern that the requirement to have a symptom free 'block', rather than an entire orchard, would increase the risk of disease transmission:

We believe it would be considerably easier for New Zealand growers to set up a block within an orchard that is free from disease symptoms than it

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44 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 18

45 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 41

46 Australian Apple and Pear Limited, *Submission 1*, pp. 3-4

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would be for the same grower to ensure that their entire orchard is free of symptoms. The level of risk associated with harvesting fruit from a symptom free block within an infected orchard would surely be greater than harvesting fruit from an entire orchard that has been certified free of symptoms. The potential for cross contamination from equipment, picking bags, machinery and people would unquestionably be greater within an orchard than between orchards.<sup>47</sup>

3.74 On the possibility of infection from nearby areas, Biosecurity Australia asserted that the buffer zone was not necessary if blocks were required to undergo inspections for disease symptoms:

It is preferable to let the New Zealand orchardist decide on how he is going to protect his block. He may choose to have a 200-metre buffer. He may choose to rip out all the trees but, if he does not do a good job, then his block that he wants to register will not be free of symptoms.<sup>48</sup>

3.75 Biosecurity Australia applied a similar logic to the problem of contaminated machinery:

If that were a means of spreading the disease into a registered orchard block, then there would be symptoms and the block would be deregistered.<sup>49</sup>

3.76 Essentially, Biosecurity Australia maintained the position that as long as blocks were symptom free, the protocol was appropriate when viewed in the context of the entire risk mitigation requirements.

3.77 The Committee believes that the protocols relating to the pre-harvest inspection are the most crucial to preventing the transmittal of fire blight to Australia's apple growing regions. Accordingly, they should have been more clearly defined in the revised draft IRA. The Committee is firmly of the belief that inspections should be as rigorous as possible; conducted on multiple occasions during the year by Australian representatives. This would ensure symptoms manifesting themselves according to seasonal conditions could be identified. Further, placing responsibility for the inspections with Australian government officials would provide the best incentive to conduct the most rigorous inspection possible.

### **Recommendation 3**

**3.78 The Committee recommends that Biosecurity Australia require any inspection of New Zealand orchards for fire blight symptoms to be conducted by AQIS officers together with their New Zealand counterparts.**

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47 Western Australian Fruit Growers' Association, *Submission 12*, p. 4

48 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 19

49 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 35

*Chlorine dip*

3.79 The second risk mitigation strategy proposed in the revised draft IRA is subjecting the fruit to a chlorine dip. The administering of the chlorine treatment is proposed to take place by the following means:

Chlorine treatment could be applied in the routine packing house process by incorporating chlorine in the flotation tanks and maintaining the chlorine concentration at a minimum of 100 ppm.<sup>50</sup>

3.80 Biosecurity Australia officials informed the Committee that chlorine dipping is the only measure in place for the export of US apples to South America, which does not have fire blight.

3.81 Growers expressed concern that bacteria could continue to be present in the calyx of the fruit:

It is freely acknowledged that there tend to be higher concentrations of bacteria inside the calyx on the remnants of the flower of the petioles. As the apple starts to grow, quite often there are higher concentrations of bacteria there, which are obviously not going to be picked up by visual inspection. The chlorine dip would also be ineffective because of the air pockets, so it could effectively go right through the supply chain and importation steps.<sup>51</sup>

3.82 In the revised draft IRA, Biosecurity Australia did not indicate that chlorine dipping represents a fail-proof measure for eliminating the presence of residual fire blight bacteria:

Although chlorine can eliminate all bacteria in some situations, there is evidence that its effectiveness could be only partial in horticultural and agricultural situations. There is also some doubt about the efficacy of chlorine on bacteria in the calyxes because air pockets could prevent access of chlorine especially in closed-calyx fruit.<sup>52</sup>

3.83 In keeping with its central theme on the effectiveness of each protocol, Biosecurity Australia emphasised that this protocol would, in conjunction with other measures, reduce the risk to a level that was acceptable to Australia's quarantine standard.

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50 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, pp. 470-471

51 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 5

52 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 471



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*Cold storage*

3.84 The third and final strategy proposed requires the fruit to be stored between 0-4 degrees Celsius for a minimum six week period.<sup>53</sup> This aspect of Biosecurity Australia's risk mitigation strategy is intended to diminish remaining surface bacteria to a level that reduces the risk of transmission within Australia's ALOP.

3.85 From a growers' perspective, the intuitive response to this protocol focussed on the survivability of fire blight in cold climate growing regions:

Fire blight is indigenous to North America. Washington state gets down to minus 20 degrees. Orchards are covered in a metre of snow but, come spring, they still end up with an outbreak of fire blight. As a grower, I have no idea what six weeks in cool storage at zero degrees is going to do.<sup>54</sup>

3.86 Biosecurity Australia told the Committee that the survival of fire blight on trees in cold climates was not comparable to the cold storage risk mitigation measure:

In cool storage, the bacteria are superficial on the surface of the fruit, so the bacterium has no nutrients to draw on. It cannot reproduce that way.

... there is no nutrient base on the surface of an apple to sustain a population of bacteria.<sup>55</sup>

3.87 Scientific experts representing APAL before the Committee disagreed with this assessment:

The majority of the assessment that was done on cold storage was done on artificially inoculated bacteria to fruit surface. The problem with drawing conclusions from such studies is that, obviously, artificial inoculation cannot and often does not parallel what can happen in nature.<sup>56</sup>

3.88 They added that:

Cold storage prolongs the life of an organism. That is because it slows down the metabolic processes of the organism so that it can survive longer.<sup>57</sup>

3.89 The Committee notes continuing scientific uncertainty with respect to the effectiveness of cold storage on fire blight.

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53 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 472

54 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 22

55 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 3

56 Dr I Carmichael, RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 21

57 Dr S Wimalajeewa, RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 21

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*Biosecurity Australia's response*

3.90 Biosecurity Australia regularly reinforced to the Committee the view that none of the protocols are singularly intended to eliminate risk. This claim was often employed to refute growers' assertions that the protocols were not adequate to prevent the transmission of fire blight. Biosecurity Australia told the Committee that while each protocol is not in itself a flawless procedure, the cumulative effect of them being administered as a series of measures should be effective:

In a simple sense, the initial step of sourcing apples from areas that are free of disease symptoms means that the apples will have the lowest levels of bacteria present on the surface and they will have no internal infection because apples with internal infection are only found in orchards where there are symptoms in calyces. So you get to the stage where you have a level of bacterium that is bacteria dose responsive. Then you take a chlorine treatment, and the chlorine is very effective against killing bacteria. It will kill all the bacteria on the surface of the fruit and it will kill a lot of the bacteria present in the calyx. The third step is actually to take it through a cold storage period, which will reduce the bacteria level even further. That will be at least to a non-culturable level. So all these steps are required to bring it down to that level.<sup>58</sup>

3.91 The intended cumulative effect of each of the protocols is acknowledged by the Committee. Nonetheless, this in itself does not diminish the industry's concerns about Biosecurity Australia's assessment of their effectiveness. The Australian growers' day to day participation in the field provides a practical knowledge of how these risk mitigation strategies will operate. Such knowledge is important when calculating risk and successful strategies to combat such risk.

3.92 There is a need to strike a balance between the theoretical and scientific aspects of this import risk analysis and the more practical implications of implementing risk mitigation measures. It is clear that while Biosecurity Australia's recommendations (in relation to processes and procedures) are based on sound scientific analysis, those called upon to actually implement these procedures are in a better position to determine whether they are practically feasible.

3.93 In this instance, the Committee is concerned that Biosecurity Australia has not given appropriate weight to the practical aspects of the apple harvesting process, as highlighted by industry representatives throughout Biosecurity Australia's own consultation period and this inquiry. The Committee believes the on-the-ground realities of implementing the proposed protocols have not been given sufficient credence by Biosecurity Australia through the IRA process.

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58 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 19

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### ***Apple Scab and Codling Moth***

3.94 Although concerned with an outbreak of fire blight in Western Australia, that state's industry representatives cited apple scab, and to a lesser extent codling moth, as the major threats posed by the importation of New Zealand apples. Highlighting the potential impact of apple scab, WA criticised the IRA for not appropriately recognising the threat it posed:

There appears to be inconsistency in the IRA document in relation to economic consequences of disease outbreaks. Apple scab is the most damaging disease of apples worldwide and this fact is supported by numerous scientific references. It therefore should follow that the economic consequences for WA growers should be rated higher than that of Fire blight to Eastern States growers. Yet in the document the overall consequence of Fire blight is rated as High, and Apple Scab is rated as Moderate.<sup>59</sup>

3.95 Representatives of the Western Australian Fruit Growers Association informed the Committee that WA apple growing regions were alone – worldwide - in not having apple scab and codling moth. According to local industry representatives, Western Australia's freedom from many of the pests and diseases present in eastern Australia provides a significant competitive advantage through lower costs of production associated with chemical treatments.<sup>60</sup>

3.96 WA industry argued that the proposed protocols were not sufficient to protect WA growers from the threat of apple scab and codling moth:

The protocols have been put in place primarily to try and reduce the risk of fire blight. It is almost like apple scab and codling moth have been given scant regard. Certainly the protocols that are there at the moment, because they are focused on fire blight, we believe are going to be very ineffective against apple scab and codling moth, which increases the risk to the Western Australian industry considerably.<sup>61</sup>

3.97 They further contend that this was exemplified by flaws in pre-inspection process:

With apple scab you can have what are called pinpoint lesions. The document itself admits that they are not detectable at the time of harvest. Because we do not know how they are going to inspect for apple scab in New Zealand—it has not been listed yet—you really need to inspect it a number of times during the season to determine whether there are pinpoint lesions or how far it has gone with apple scab. If you have pinpoint lesions—and the document admits they survive the packing processes et

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59 Western Australian Fruit Growers' Association, Submission 12, p. 3

60 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 4

61 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 10

cetera—it could then show up between eight and 11 weeks later and by that time the apples would be in Australia.<sup>62</sup>

3.98 The Committee notes that the revised draft IRA has proposed to mitigate the apple scab risk by sourcing only from disease free areas. Codling moth will require verification inspection in New Zealand.<sup>63</sup>

3.99 The possible importation of New Zealand apples into Western Australia also raises the issue of a conflict between the proposed arrangement and existing domestic quarantine regulations. At present, WA's particular disease free status is reflected in state legislation prohibiting apples from other states entering WA.

3.100 According to WA representatives:

There are no protocols in place to allow fruit from the eastern states to come into Western Australia, primarily as a result of the eastern states not applying to the department of agriculture. It is just seen as being too serious to come through.<sup>64</sup>

3.101 Biosecurity Australia informed the Committee that it would be seeking to have the Western Australian government change its quarantine restrictions for fruit from Australia's eastern states. According to Biosecurity Australia, there would otherwise be an inconsistency between Australia's first and second tier quarantine arrangements, a situation that would be in conflict with Australia's WTO agreement obligations.<sup>65</sup>

3.102 In this context the Committee notes the comments in a similar vein made by representatives of the Tasmanian growers:

I know that our state government is looking at possibly enacting state quarantine legislation if Biosecurity do allow New Zealand apples to come in. There is the risk that fire blight will come in with those apples, and we will be lobbying the state government to enact that legislation, as they have done with the salmon issue.<sup>66</sup>

3.103 The potential for state legislation to restrict the entry of New Zealand apples into that state is a matter of concern to the Committee.

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62 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 6

63 Biosecurity Australia, *Importation of Apples from New Zealand: Revised Draft IRA Report*, February 2004, p. 481 and 488.

64 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, p. 5

65 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 31 March 2004, p. 18

66 RRAT Legislation Committee, *Transcript of Evidence*, Canberra, 30 June 2004, pp. 50-51