

EXECUTIVE SUMMARY.

Because of the inoculum potential and the ability of new inoculum to be repeatedly dispersed throughout an orchard by wind, splashing rain, and insects, it has been said that ***There is no such thing as a "little bit" of fire blight*** when dealing with this disease.

FIRE BLIGHT – *Erwinia amylovora*

Overview:

The change in the 2011 Review's assessed unrestricted risk of fire blight from low to very low arises solely from the assessed change in the likelihood of entry, establishment and spread of that pest. The assessment that the likelihood of entry, establishment or spread will change is not based on any scientific information cited in the 2011 Review and there is no reasoning set out in the 2011 Review which supports that change. Rather that changed assessment of the likelihood of importation, establishment and spread arises from the abandonment of the semi-quantitative method of risk analysis used in the 2006 IRA and its replacement by the qualitative method with the decision rules set out at page 9 of the 2011 Review.

Thus in 2006 the IRA assessed that 3.9% of all apples imported from New Zealand would be infested with the fire blight bacteria. There is no scientific information and no reasoning in the 2011 Review which questions that conclusion. Rather the 2011 Review concludes:

*"In summary, considering a significant volume of trade, the evidence shows that *E. amylovora* has the potential to be associated with fruit from major export areas in New Zealand, but that the proportion of infested fruit will be small and the bacterial populations in low numbers per fruit."*

That reasoning can only rationally support the conclusion that "the event [that is the importation of the pest] would be very likely to occur". An accurate application of the decision rules set out on pages 8 and 9 of the 2011 Review would result in the allocation of a qualitative likelihood of "high" to the importation of fire blight. The statement in the 2011 Review that "the evidence supports a rating of "moderate" for the importation of *E. amylovora* is irrational and unreasonable.

The primary driver of the change in the assessed risk of fire blight is the use of the qualitative assessment that the likelihood of distribution of the pest in Australia is extremely low in 2011.

The analysis, purportedly reviewed in 2011, which was undertaken in 2006 proceeded on the basis that distribution within Australia would vary widely between orchard wholesalers, urban wholesalers, retailers, food services and consumers; and that the assessment of the likelihood of distribution required consideration of the proximity of each of those distribution modalities to commercial fruit crops, nursery plants, household and garden plants and wild and amenity plants.¹ The allocation of the simple qualitative descriptor of “extremely low” to the likelihood of distribution in the 2011 Review simply ignores those various distribution modalities and their proximity to possible points of infection. The 2011 Review contains no scientific information and no reasoning which could support putting aside the analysis based on those different modalities and proximity points.

However it is the arbitrary allocation of the qualitative descriptor “extremely low” to that stage of the analysis which completely determines that the 2011 Review would conclude that the probability of entry, establishment and spread of fire blight was extremely low. That conclusion does not flow from any scientific information or reasoning. Rather it flows from the “matrix of rules for combining qualitative likelihoods” set out at table 2.2 on page 9 of the 2011 Review.

It is the change in the method of risk assessment between 2006 and 2011 as it concerns the distribution of fire blight which drives the change in the assessed level of unrestricted risk of fire blight. That change is not based on any scientific information or reasoning. The making of that change is irrational and unreasonable.

Conclusion

In considering the above information the following conclusions can be made:

- a) ‘DIRECT IMPACT’ ratings have not changed from 2006 to 2011, and
- b) One ‘INDIRECT IMPACT’ ratings have been lowered from 2006 to 2011, and
- c) the rating for ‘CONSEQUENCE’ has not changed been from 2006 to 2011, and
- d) the Overall probability of entry, establishment and spread has moved from VERY LOW (2006) to EXTREMELY LOW (2011).

It is worthy of considering the following scenario

¹ See the analysis in the 2006 IRA at pages 80FF.

- The World Trade Organisation Appellate Body ruled in favour of Australia in that the alternative measures proposed by New Zealand had not been proven to meet Australia's Appropriate Level of Protection.

- (a) Measures 1-8, as proposed by Biosecurity Australia in 2006, and addressed in the subsequent five bullet points of New Zealand's panel request, relates to "*Fire Blight*" and were considered as 'measures' by both the World Trade Organisation Panel and Appellate Panel:

"The requirement that apples be sourced from areas free from fire blight disease symptoms."

"The requirement that orchards/blocks be inspected for fire blight disease symptoms, including that they be inspected at an inspection intensity that would, at a 95% confidence level, detect visual symptoms if shown by 1% of the trees, and that such inspections take place between 4 to 7 weeks after flowering."

"The requirement that an orchard/block inspection methodology be developed and approved that addresses issues such as visibility of symptoms in the tops of trees, the inspection time needed and the number of trees to be inspected to meet the efficacy level, and training and certification of inspectors."

"The requirement that an orchard/block be suspended for the season on the basis that any evidence of pruning or other activities carried out before the inspection could constitute an attempt to remove or hide symptoms of fire blight."

"The requirement that an orchard/block be suspended for the season on the basis of detection of any visual symptoms of fire blight"

"The requirement that apples be subject to disinfection treatment in the packing house."

"The requirement that all grading and packing equipment that comes in direct contact with apples be cleaned and disinfected (using an approved disinfectant) immediately before each Australian packing run."

"The requirement that packing houses registered for export of apples process only fruit sourced from registered orchards."

- The new science incorporated into the "Draft report for the non-regulated analysis of existing policy for apples from New Zealand" offers nothing that should result in the **overall probability of entry, establishment and spread has moved from VERY LOW (2006) to EXTREMELY LOW (2011).**

- If anything the new science would support the maintenance of the 2006 measures or in fact adding additional measures.
- The standard orchard practices are not new information as it was in existence back in 1998 and was certainly considered by both industry and Biosecurity Australia in the 2006 Import Risk Analysis.
- The Integrated Fruit Production Manual again is nothing new and certainly the information available to the Australian Apple industry offers nothing that would indicate the fire blight has been eradicated from New Zealand apple growing regions.
- At the very least, pest free places of production should be a mandatory requirement. This could only be achieved with orchard inspections.
- Under Biosecurity Australia's present proposal, Australia faces the potential of receiving infected/infested fruit from orchards that have active fire blight. Science supports the fact that fruit can appear symptomless at harvest. The risk of Australia receiving infected fruit that would spread the disease is very real.
- The documentation obtained from the visit by Biosecurity Australia representatives to New Zealand in March 2011 offers nothing new in relation to new science or standard orchard practices that would support the reduction of the unrestricted risk from **LOW** to **VERY LOW**

In conclusion Apple and Pear Australia Limited find that there is absolutely no new information that justifies the decision by Biosecurity Australia to reduce the unrestricted risk from LOW to VERY LOW and as a result no reason to allow apples from New Zealand in without any true measures.

MINIMUM MEASURES:

As a minimum Apple and Pear Australia Limited believe the following measures should be implemented for managing FIRE BLIGHT:-

- **Pre harvest orchard inspection to be undertaken by AQIS with the elimination of a block / orchard for the season with an outbreak of Fire Blight, and**
- **Disease latency infection test on each lot before export to prove freedom from Fire Blight, and**
- **Inspection of 1200 pieces of fruit per 300 Tray Carton Equivalent, and**
- **Inspection of 600 randomly selected cartons per lot for trash**

EUROPEAN CANKER

Overview:

The 2011 conclusions with respect to the importation and distribution of European canker are that each of those events has a qualitative likelihood of very low. The application of the decision matrix at table 2.2 results in the inevitable conclusion that the overall probability of entry, establishment and spread will be described qualitatively as extremely low.

There is nothing in the scientific information or reasoning contained in the 2011 Review which in any way departs from the conclusions on the likelihood of importation and distribution of the 2006 IRA. Once again it is the change to a qualitative methodology from the semi-quantitative methodology used in 2006 which results in the change in the level of unrestricted risk. That change is unsupported by any scientific evidence or reasoning. It is irrational and unreasonable.

In addition the 2011 Review involves a change in the assessed consequences for European canker. In 2006 the IRA had concluded that the direct consequences on plant life of the pest were expected to be minor at the national level and significant at the regional level.

In 2011 the review concludes that the impact would be minor at the regional level and significant at the district level.

That change is based solely upon the work of Beresford and Kim 2011. While that work assessed Tasmania as marginal for European canker it did not cover other areas of Australia. The reduced assessment of the consequences of European canker relies solely upon the earlier work of Beresford and Kim 2008 which came to no firm conclusion on other apple growing regions of Australia. The reliance on Beresford and Kim 2008 is misplaced.

Conclusion

In considering the above information the following conclusions can be made:

- e) 'DIRECT IMPACT' ratings have been lowered from 2006 to 2011, and

- f) Two 'INDIRECT IMPACT' ratings have been lowered from 2006 to 2011, and
- g) the rating for 'CONSEQUENCE' has been lowered from MODERATE (2006) to LOW (2011, and
- h) the Overall probability of entry, establishment and spread has moved from LOW (2006) to EXTREMELY LOW (2011).

Apple and Pear Australia limited argues that with the carton being the most logical mode of transport for trash Biosecurity Australia MUST include 600 randomly selected cartons per lot to ensure that trash is not present and exported to Australia.

On the finding of any trash within retail-ready packs the full lot needs to be returned to New Zealand, treated or destroyed.

It is worthy of considering the following scenario

- The World Trade Organisation Appellate Body ruled in favour of Australia in that the alternative measures proposed by New Zealand had not been proven to meet Australia's Appropriate Level of Protection.
- Measures 9 to 13 as proposed by Biosecurity Australia in 2006, and addressed in the subsequent five bullet points of New Zealand's panel request, relates to "*European canker*" and were considered as 'measures' by both the World Trade Organisation Panel and Appellate Panel:

"The requirement that apples be sourced from export orchards/blocks free of European canker (pest free places of production)."

"The requirement that all trees in export orchards/blocks be inspected for symptoms of European canker, including that orchards/blocks in areas less conducive for disease are inspected for symptoms by walking down every row and visually examining all trees on both sides of each row, and that areas more conducive to the disease are inspected using the same procedure combined with inspection of the upper limbs of each tree using ladders (if needed), and that such inspections take place after leaf fall and before winter pruning."

"The requirement that all new planting stock be intensively examined and treated for European canker."

"The requirement that an orchard/block be suspended for the season on the basis that any evidence of pruning or other activities carried out before the inspection could constitute an attempt to remove or hide symptoms of European canker."

"The requirement that exports from an orchard/block be suspended for the coming season on the basis of detection of European canker and that

reinstatement would require eradication of the disease, confirmed by inspection."

- The new science incorporated into the "Draft report for the non-regulated analysis of existing policy for apples from New Zealand" offers nothing that should result in the **overall probability of entry, establishment and spread has moved from LOW (2006) to EXTREMELY LOW (2011)**.
- If anything the new science would support the maintenance of the 2006 measures or in fact adding additional measures.
- The standard orchard practices are not new information as it was in existence back in 1998 and was certainly considered by both industry and Biosecurity Australia in the 2006 Import Risk Analysis.
- The Integrated Fruit Production Manual again is nothing new and certainly the information available to the Australian Apple industry offers nothing that would indicate the European canker has been eradicated from New Zealand apple growing regions.
- When assessing the risks from European Canker, Biosecurity Australia has treated New Zealand as being a low risk region. The facts are that at least one area in New Zealand is a high risk area (Auckland, Otago). These areas have a known presence of canker and have ideal climatic conditions for this disease. Biosecurity Australia has concluded that only 5% of New Zealand apples are grown in these areas and as such this fruit does not pose a risk. There is a total lack of recognition that the fruit from these areas will arrive in Australia in undiluted consignments.
- At the very least, pest free places of production should be a mandatory requirement. This could only be achieved with orchard inspections.
- Under Biosecurity Australia's present proposal, Australia faces the potential of receiving infected fruit from orchards that have active European Canker. Science supports the fact that fruit can appear symptomless at harvest but develops rots later. The risk of Australia receiving infected fruit that would spread the disease is very real.
- The documentation obtained from the visit by Biosecurity Australia representatives to New Zealand in March 2011 offers nothing new in relation to new science or standard orchard practices that would support the reduction of the unrestricted risk from **LOW** to **NEGLIGIBLE**.

In conclusion Apple and Pear Australia Limited find that there is absolutely no new information that justifies the decision by Biosecurity Australia to reduce the unrestricted risk from LOW to NEGLIGIBLE and as a result no reason to allow apples from New Zealand in without any true measures.

MINIMUM MEASURES:

As a minimum Apple and Pear Australia Limited believe the following measures should be implemented for managing European canker:-

- **Banning of apples from the high risk areas for European canker (eg., Auckland), and**
- **Orchard inspection with the elimination of a block / orchard for the season with an outbreak of European canker, and**
- **Disease latency infection test on each lot before export, and**
- **Inspection of 1200 pieces of fruit per 300 Tray Carton Equivalent**
- **Inspection of 600 randomly selected cartons per lot,, *and***
- **A maximum pest limit of zero.**

APPLE LEAF CURLING MIDGE:

Overview:

In the case of Apple Leaf Curling Midge the 2006 Import Risk Analysis concluded that 4.1% of all apples imported to Australia would be infested with the pest.

There is nothing in the scientific information or reasoning in the 2011 Review which provides any basis for departing from that assessment.

To the contrary the 2011 Review concludes that:

“The information presented indicates 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 on arrival quarantine processes at the Australian border. Recognising that there is potential for this event to occur, though not with certainty in all consignments or in all years, ...”

Just like for Fire Blight, that analysis supports the conclusion that “the event [that is the importation of the pest] would be very likely to occur”. The reasoning supports a rating of “high”. The allocation of “moderate” meaning “the event would occur with an even probability” is inconsistent with the scientific evidence and the reasoning. It is irrational and unreasonable.

As with Fire Blight, so with Apple Leaf Curling Midge the change in the assessed level of unrestricted risk in the 2011 Review is driven solely by the change in the method for assessing the likelihood of distribution.

In the case of Apple Leaf Curling Midge the assessment of the likelihood of distribution depends centrally on the assessment of a mating pair of the pest being within sufficient proximity to each other and to a suitable host to result in transfer.

The 2006 Import Risk Analysis assessed the likelihood of that scenario by taking into account the different distribution modalities and proximity points referred to above with respect to fire blight. It also specifically took into account the impact of clustering.²

By departing from the 2006 methodology, without citing any scientific information or reasoning to do so, the 2011 Review has allocated the qualitative likelihood of “very low” for the likelihood of entry of Apple Leaf Curling Midge.

Again it is the matrix of rules for combining qualitative likelihoods³ which determines that the overall probability of entry, establishment and spread of Apple Leaf Curling Midge cannot be higher than very low. That in turn determined the outcome of the unrestricted risk assessment undertaken in 2011 would be that that risk was within Australia’s Appropriate Level Of Protection.

That change is not supported by scientific evidence or by reasoning and is irrational and unreasonable.

Conclusion:

In considering the information on Apple Leaf Curling Midge the following conclusions can be made:

- i) there is no difference in the ratings for ‘DIRECT IMPACT’ from 2006 and 2001, and
- j) there is no difference in the ratings for ‘INDIRECT IMPACT’ from 2006 and 2011, and
- k) there is no difference in the rating for ‘CONSEQUENCE’ from 2006 and 2011, but

² So for example at page 333 the 2006 IRA recorded that “after extensive discussion with Biosecurity Australia entomologists and team members it was decided that it would allow clearer consideration of the risks from arthropods to calculate estimates of the number of infested apples in each exposure point per week”.

³ Table 2.2 on page 9

- l) the Overall probability of entry, establishment and spread has moved from HIGH (2006) to VERY LOW (2011).

Apple and Pear Australia limited argues that with the carton being the most logical mode of transport for trash which can carry apple leaf curling midge, Biosecurity Australia MUST include 600 randomly selected cartons per lot to ensure that trash is not present and exported to Australia.

On the finding of any trash within retail-ready packs the full lot needs to be returned to New Zealand, treated or destroyed.

It is worthy of considering the following scenario

- The World Trade Organisation Appellate Body ruled in favour of Australia in that the alternative measures proposed by New Zealand had not been proved to meet Australia's Appropriate Level of Protection.
- Measure 14, proposed by Biosecurity Australia in 2006, and addressed in the subsequent bullet point of New Zealand's panel request, relates to "*apple leafcurling midge*" and was considered a 'measure' by both the World Trade Organisation Panel and Appellate Panel:

"The requirements of inspection and treatment for apple leafcurling midge, including:

the option of inspection of each lot on the basis of a 3000 unit sample selected at random across the whole lot for apple leafcurling midge, symptoms of quarantineable diseases, quarantineable pests, arthropods, trash and weed seeds, with detection of any live quarantineable arthropod resulting in appropriate treatment or rejection for export;

the option of inspection of each lot on the basis of a 600 unit sample selected at random across the whole lot for symptoms of quarantineable diseases, trash and weed seeds, plus mandatory appropriate treatment of all lots."

- The new science incorporated into the "Draft report for the non-regulated analysis of existing policy for apples from New Zealand" offers nothing that should result in the **overall probability of entry, establishment and spread has moved from HIGH (2006) to VERY LOW (2011).**
- If anything the new science would support the maintenance of the 2006 measures or in fact adding additional measures.

- The standard orchard practices are no new information as it was in existence back in 1998 and was certainly considered by both industry and Biosecurity Australia in the 2006 Import Risk Analysis.
- The Integrated Fruit Production Manual again is nothing new and certainly the information available to the Australian Apple industry offers nothing that would indicate the Apple Leaf Curling Midge has been eradicated from New Zealand apple growing regions.
- The documentation obtained from the visit by Biosecurity Australia representatives to New Zealand in March 2011 offers nothing new in relation to new science or standard orchard practices that would support the reduction of the unrestricted risk from LOW to NEGLIGIBLE.

In conclusion Apple and Pear Australia Limited find that there is absolutely no new information that justifies the decision by Biosecurity Australia to reduce the unrestricted risk from LOW to NEGLIGIBLE and as a result no reason to allow apples from New Zealand in without any true measures.

MINIMUM MEASURES:

As a minimum Apple and Pear Australia Limited believe the following measures should be implemented for managing Apple Leaf Curling Midge:-

- **Implementation of ‘pest free place of production’ (an accepted SPS process), *or***
- **Fumigation of apples before export, *and***
- **Inspection of 1200 pieces of fruit per 300 Tray Carton Equivalent**
- **Insepection of 600 randomly selected cartons per lot, *and***
- **A maximum pest limit of zero.**

ADDITONAL TECHNICAL ISSUES:

Antibiotics

Given that there is serious concern about the use of antibiotics within food production and given the likelihood that antibiotic use on fruit and vegetables is likely to be banned in the coming years Apple and Pear Australia Limited argues that Biosecurity Australia should

- a) Eliminate any orchards for the season that utilises an antibiotic spray within that year, or
- b) Ensure that ALL fruit that is exported from a block/orchard to which the trees/fruit have been sprayed with an antibiotic MUST be individually labelled that they have been treated in this manner.

Viable But Not Culturable (VBNC)

Apple and Pear Australia Limited contends that there is an ever increasing body of evidence that confirms that *Erwinia amylovora*

- a) can exist in a Viable But Non-Culturable state.
- b) can exist in a Viable But Non-Culturable state in the calyx of mature apples, and
- c) can be transferred in mature apples,
- d) in a Viable But Non-Culturable state can be returned to a culturable state, and
- e) in a returned culturable state be transferred to living tissue.

Apple and Pear Australia Limited argues that Biosecurity Australia must give due recognition to the existence of Viable But Non-Culturable *Erwinia amylovora*. As a result Biosecurity Australia must develop appropriate measures for apple exports from New Zealand including:-

- a) Pre harvest orchard inspection with the elimination of an orchards for the season with an outbreak of Fire Blight, and
- b) Disease latency infection test on each lot before export to prove freedom from fire blight.

Insects

Apple and Pear Australia Limited argue that Mediterranean Fruit Fly must be treated as a real vector for fire blight and that this should alter the potential indirect impact.

Sanitation

Biosecurity Australia has reported that in fact 99% of the export fruit is treated using sanitation (meeting with Apple and Pear Australia Limited, 8th April 2011) which is in variance with the information supplied above by an unidentified officer of the New Zealand Ministry of Agriculture and Forestry.

The unidentified officer also indicates that sanitation is not required by some 65 markets to which New Zealand export so is there circumstances when sanitation is not used for those markets and then utilised only for those markets requiring such treatments?

The unidentified officer also indicates that sanitation is not required *“under the industry best practice guidelines or MAF Food Safety requirements”*.

The unidentified officer also indicates that *“there is no absolute data available but the 80% of packing houses mentioned will process approximately 90% by volume of the exported fruit processed”*.

Given these discrepancies in information Apple and Pear Australia Limited believes that there is uncertainty that all export fruit to would be sanitised. Biosecurity Australia must

- a) Revisit the aspect of sanitation to obtain a clear understanding of what is implement by ALL New Zealand packing facilities, and**
- b) implement a measure which at minimum ensures all fruit destined for Australia is sanitised and that the sanitation**

Apple and Pear Australia Limited seeks clarification from Biosecurity Australia as to whether they have investigated the “*unidentified mycelia sterilia*” referred to by the scientists undertaking this work.

Apple and Pear Australia Limited also seeks clarification from Biosecurity Australia as to

- a) how they will ensure that ALL wash water ALL of the time will be free of fungal pathogens, and
- b) what tests will be undertaken on wash water, and
- c) how regularly will they be taken, and
- d) how the results will be recorded, and
- e) who will audit those results, and
- f) how will non conformance be dealt with?

If punctured fruit is found on inspection what action will be taken by AQIS and Biosecurity Australia?

Pollination

Can Biosecurity Australia confirm that “each continuous planting of a single variety of apple” is the case within each orchard block or variety block?

Can Biosecurity Australia confirm if within “each continuous planting of a single variety of apple” there are pollinators? If so are those pollinator’s different varieties of apples? Is it possible these pollinators could be more susceptible to diseases like Fire Blight and that they could harbour these diseases?

Western Australia Codling Moth / Mealybug / Leafrollers

Apple and Pear Australia Limited agrees that the measures are acceptable for Mealybug and Leafrollers and for Codling moth (WA Only).

BUT Apple and Pear Australia Limited finds it totally unacceptable that the same or similar measures proposed for Coddling Moth into WA are not used for more destructive pests like Fire Blight, European Canker and Apple Leaf Curling Midge.

Economic Impact At National, Regional And Local

Apple and Pear Australia Limited argues that the economic impact at National, Regional and Local levels need to be adjusted to a high classification based on the known costs of eradication of the alleged Fire Blight outbreak (1997), Citrus Canker and Myrtle Rust.

Equivalence

Apple and Pear Australia Limited has detailed a number of examples of protocols/measures that have been implemented by New Zealand and/or Australia which represent appropriate 'equivalence' measures.

Apple and Pear Australia Limited contends that Biosecurity Australia has failed in its 'duty of care' in not considering and/or utilising some of the appropriate 'equivalent' measures.

PROCEDURAL FAIRNESS

In a recent response from Senator Ludwig, Minister for Agriculture, Fisheries and Forestry it has been reported that

“A full copy of the integrated fruit manual has not been provided to Biosecurity Australia by the New Zealand authorities. The relevant extracts of the Integrated Fruit Production manual as cited in the ‘Draft report for the non-regulated analysis of existing policy for apples from New Zealand’ (draft report) of 4 May 2011 are enclosed.”

As Apple and Pear Australia Limited has no reason to doubt the accuracy of this statement it concludes that Biosecurity Australia has not in fact been supplied and/or cited a FULL copy of the New Zealand Pipfruit Integrated Fruit Production Manual and has only been given access to three pest/disease fact sheets.

If this in fact the case Biosecurity Australia has

- a) given misleading information to stakeholders, and
- b) failed in their ‘duty of care’ in preparing the Draft Report.

SCIENTIFIC PAPERS NOT CONSIDERED BY BIOSECURITY AUSTRALIA

Apple and Pear Australia Limited contends that there is a body of evidence in both a general sense and also related to Viable But Non-Culturable that Biosecurity Australia has failed to consider (as detailed within the relevant parts of this submission).

Biosecurity Australia has justified the decisions of the “Draft report for the non-regulated analysis of existing policy for apples from New Zealand” on the citing of ‘new science’ but it is obvious that not all new and available science has been considered.

Apple and Pear Australia Limited assumes that this material has been not cited because Biosecurity Australia has not been aware of the scientific papers and not because Biosecurity Australia has pre-determined the result.