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4 September 2008

Plant Biosecurity Biosecurity Australia GPO Box 858 CANBERRA ACT 2601

To whom it may concern,

Tasmanian Government Comment: Issues paper for apple fruit from China.

Please find attached the Tasmanian Government's comments on the *Issues* paper for the import risk analysis of fresh apple fruit from the People's Republic of China.

If you have any questions, please contact me on (03) 6421 7634 or Andrew.Bishop@dpiw.tas.gov.au.

Yours sincerely

All

Andrew Bishop Manager BIOSECURITY POLICY BRANCH

ISSUES PAPER FOR IMPORT RISK ANALYSIS OF FRESH APPLE FRUIT FROM PEOPLE'S REPUBLIC OF CHINA

BIOSECURITY AUSTRALIA JULY 2008

TASMANIAN GOVERNMENT COMMENT

Prepared by the Apple Fruit Working Group, August 2008

1. BACKGROUND

These comments are submitted because apple fruit from China potentially pose a direct biosecurity threat to Tasmania's pome fruit industry, and to other plant industries in this State that might also be affected by pests and diseases associated with the import proposal. However, the Tasmanian Government believes the potential ramifications of new pests and diseases on apple fruit from China entering and establishing in Tasmania, go beyond this.

Our favourable biosecurity status is integral to, and at the heart of, the Tasmanian brand, and hence our ability to maintain and position ourselves as a unique source of a broad range of quality, natural produce and products for discerning national and international markets. Accordingly, a biosecurity threat to any single industry, such as pome fruit, is also a threat to how the whole Tasmanian brand is maintained, perceived and valued in the market.

Further, Tasmania's small size and reliance on primary industries means that even a modest impact on one industry can have relatively greater impacts on the State's economy and people, than is the case for other larger, more diverse mainland economies.

These characteristics of the Tasmanian situation inform the following comment on the *Issues paper for the import risk analysis of fresh apple fruit from the People's Republic of China, July 2008* (Issues paper).

2. IRA METHOD

2.1. Assignment of probability ranges to qualitative likelihood descriptors for assessment of probability of entry, establishment and spread

The broad issue is that the method for estimating the likelihood of entry, establishment and spread that has been used in previous IRAs does not have sufficient regard to the kinds of uncertainties that typically attend predictions of complex biological and ecological interactions. We believe this results in a less conservative approach to estimating biosecurity risk against ALOP.

By nature, it is challenging to describe qualitative likelihood clearly and in a way that can be interpreted consistently by all stakeholders. However, applying numerical descriptions in the form of probability ranges to qualitative likelihood categories gives the misleading impression that there is a unique mathematical solution to likelihood, and that uncertainties about how a particular pest might behave or respond in a certain environment can be dealt with by invoking numbers. This approach does not reflect the true complexity of biosecurity risk.

Assignment of probability ranges to qualitative likelihood statements is also problematic because the current probability ranges and associated written descriptions arguably, do not reflect community expectations of acceptable risk. For example, it is possible for ALOP to be met if, in the course of a single year's trade, risk is the product of a one in twenty chance of entry, establishment and spread, and the pest can be expected to have a moderate impact. It is unlikely that the community would find this a reasonable interpretation of acceptable biosecurity risk.

1. The Tasmanian Government recommends use of indicative probability ranges to supplement the description of qualitative likelihood should be discontinued for all IRA work, and greater emphasis given to modifying the descriptive definitions, so that when considered against magnitude of impact, community expectations for acceptable risk are better represented.

The problem described above is compounded by the rules used in previous IRAs to combine qualitative likelihoods for entry, establishment and spread, to yield an overall L (EES). When the same likelihoods are combined, whether for import and distribution, or entry, establishment and spread, application of the rules gives an estimate that is one class lower (ie. moderate x moderate = low), except in the case of high likelihoods. While the case for this can be made with reference to the current probability ranges, the effect of these rules is that likelihood estimates are driven down. This is a less conservative approach that is not appropriate, especially in situations of significant uncertainty.

However, we acknowledge that some means of considering likelihoods collectively is required.

2. The Tasmanian Government recommends a more appropriately conservative approach to estimating likelihood of entry, establishment and spread could be achieved by replacing the current matrix of rules used for this purpose with:

"When two likelihoods are different, the overall likelihood is the lowest of two likelihoods, and when two likelihoods are the same, the overall likelihood is that same likelihood".

2.2 Consequence assessment

Plant life or health impacts

Previous IRAs have identified alternative hosts for the assessed pests and diseases but in some cases have not adequately described some significant distribution patterns of these hosts which could be expected to influence impact, and likelihood of entry, establishment and spread, especially of polyphagous pests. The intensive nature of agriculture that commonly occurs in many fruit growing districts means there is elevated opportunity for significant harm to occur in these areas. In Tasmania, pome fruit orchards are often adjacent to other commercial farms, orchards, vineyards and so forth. This may become increasingly so as more development occurs around water resources, particularly the Derwent Valley, Tamar Valley and Huon Valley.

3. The Tasmanian Government recommends that alternative host distribution should be clearly characterised in the Chines apple IRA, and that BA should consider in detail how host distribution affects the likelihood and consequence estimates, and adjust these accordingly.

Trade impact estimates

In previous IRAs, the scoring for international trade has not always adequately assessed, and hence may have underestimated, the potential magnitude of impact of some pests and diseases. The statement "may impact on trade with overseas markets" is insufficient because it does not identify which markets in particular could be affected, or the potential extent of that impact. For example, in the case of Tasmania, loss of the Taiwan market could be expected to have a dramatic impact.

4. The Tasmanian Government recommends countries that list a pest or disease assessed in the Chinese apple IRA as a pest of quarantine concern, and the Australian jurisdictions that export to those countries, should be clearly identified in the IRA so that likely international trade impacts are more explicitly described.

In addition, previous IRAs have generally concluded domestic trade impacts manifest mostly at the local or district levels. However, domestic trade restrictions that could be imposed in the event of an incursion associated with a new apple fruit pest or disease, may well have regional or nationally significant impacts. This is because Australia's urban fruit markets operate on a national basis around sequences of fruit availability, from early harvests in the northern districts (eg. granite belt, QLD) to late harvests in the south (eg. Tasmania) to achieve supply continuity throughout the year. Supermarkets also operate on a national basis and continually move fruit and vegetables long distances across the country. Therefore it is difficult to see why domestic trade impacts are assessed mostly as significant at local and district levels.

Further, if the new incursion is a polyphagous pest, a potentially wide range of plant products not limited to apple fruit may have to be regulated, which may have regional or national consequences.

5. The Tasmanian Government recommends that these issues should be clearly identified in the Chinese apple IRA, and that BA should consider how the nationally-integrated character of fruit and vegetable trade affects the consequence estimates, and adjust these accordingly.

Eradication, control impacts etc

Previous IRAs have stated that some pests and diseases associated with a particular import could be controlled by chemical means if introduced to Australia. However, the relevant chemicals are not always identified. In Tasmania, strict chemical spraying programs are in place to meet the residue restrictions imposed by our major trading partners eg. Japan, USA, Taiwan and Europe. Therefore, although there may be effective chemical treatments for these pests and diseases, Tasmanian growers may not be in a position to use them if they wish to export overseas. Also, we note that some chemicals registered for use in mainland jurisdictions are not registered for use in Tasmania.

Furthermore, one of Tasmania's main product integrity market advantages is relatively restricted use of chemicals, made possible by our favourable pest status. The introduction of new pests and diseases could require increased chemical usage which could affect pest resistance mitigation strategies, and undermine current sustainability objectives, and values of the Tasmanian orchard industry. Increased chemical use could also be expected to have more far-reaching brand impacts.

6. The Tasmanian Government recommends that the chemicals concerned and current registration status should be clearly identified in the Chinese apple IRA so that it is more apparent whether and in which jurisdictions these chemicals represent feasible control options. Where there are differences, we request BA adjust the indirect impact scoring accordingly.

Environmental impacts

Previous IRAs for horticultural product have typically assigned low scores to potential environmental impact. In many cases, these appear to be based on absence of evidence rather than evidence. We acknowledge the difficulty in predicting environmental impacts of pests and diseases known primarily for their effects in production systems but believe nonetheless that it is insufficient to assign a low score on the basis of 'no known consequence'.

7. The Tasmanian Government recommends that the Chinese apple IRA should clearly articulate that low scores for environmental impact are based on assumption, unless potential for impact in the environment has been specifically tested and there is evidence to suggest consequences are likely to be insignificant – where that is the case.

Cumulative Impact

BA conducts Import Risk Analysis (IRAs) on a commodity by country basis. The Issues Paper indicates that existing policy on the importation of apples from Japan and New Zealand, and pears and apple products from China will be taken into account in conducting the IRA for product from China where appropriate. This is a valid approach.

However, we observe that the conduct of IRAs on a commodity by country basis, may not adequately recognise that the risk posed by a pest or disease can be expected increase as additional markets are opened for host material from countries with similar pest and disease profiles. IRAs should provide for assessment of new risk in the context of the existing level of risk. If these cumulative impacts are not taken into consideration there is potential for Australia's ALOP to be exceeded.

8. The Tasmanian Government requests clarification on how existing policy will be taken into account from the perspective of cumulative risk.

2.3 Pest Risk Management

We anticipate that the unrestricted risk estimates for Chinese apples will take into account commercial production practices in China, including double bagging of fruit on trees, and no washing unless requested.

9. The Tasmanian Government recommends the Chinese apple IRA present all evidence and a full assessment of the risk mitigation value of double-bagging of apple fruit.

2.4 Product Free of Trash

The Issues paper indicates that the IRA will assess the level of risk associated with "commercially produced fresh apple fruit, free of trash".

10. The Tasmanian Government requests risk associated with contamination, including leaf and stem trash, should be included in the risk assessment. In particular the potential for fire blight to be introduced by leaf and stem material contaminating the product should be considered.

AUSTRALIAN POME FRUIT INDUSTRY INFORMATION

It is worth describing the Australian pome fruit industry in some detail since it is the sector likely to be most adversely affected by potential pests and diseases associated with Chinese apples.

However, gross production and export figures, typically provided in IRAs, do not give a comprehensive picture of what is potentially at risk. Without this, it seems difficult to form any clear idea of the magnitude of potential impact. The IRA could better illustrate what is at risk by presenting an analysis of the industry in terms of challenges it faces, levels of investment, growth or decline, and the relative importance of that growth or decline to the areas in which it is occurring. We understand figures could be gathered without too much trouble, which could inform a more robust and meaningful industry description, and hence, impact assessment.

11. The Tasmanian Government recommends that BA include information in the IRA that describes more comprehensively the industries potentially at risk, to better inform the impact estimates.

4. PEST LIST

Verification of Pest Free Status

International Standards for Phytosanitary Measures (ISPM) should used as a minimum to verify pest free status of China from pests of concern to Australia. Specifically the following standards should be applied:

- *Requirements for the Establishment of Pest Free Areas.* (1996) ISMP No. 4, FAO, Rome.
- *Guidelines for Surveillance*. (1997) ISPM No. 6, FAO, Rome.
- Determination of Pest Status in an Area. (1998) ISPM No. 8, FAO, Rome.
- Requirements for the establishment of Pest Free Places of Production and Pest Free Production Sites. (1999) ISPM No. 10, FAO, Rome.
- Pest Reporting. (2002) ISPM No. 17, FAO, Rome.
- Establishment of Pest Free Areas for Fruit Flies (TEPHRITIDAE). (2006) ISPM No. 26, FAO, Rome.

Verification of pest free status is particularly relevant to the assessment of risk associated with fire blight in China. The Issues paper states that "*Biosecurity Australia will review the available information to confirm that China remains free of fire blight*". In this regard, it is critical that the IRA does not rely exclusively on information about fire blight from pear production areas, and survey information from three select apple and pear production areas.

12. The Tasmanian Government requests that any data supporting area freedom from fire blight in China meets at least, the relevant international standards, and if met, that measures are applied to ensure this pest free status is be maintained.

Comparison with Asian Pear Import Review

Of 32 insects listed in Table 7 of Asian pear import review (AFFA, 2003) as being of quarantine concern (on pathway), 23 are listed in Appendix A of the Issues paper. The nine not listed are:

1. Pear fruit moth, *Acrobasis pyrivorella* (Matsumura) - YES PM*. It does not appear in Japanese fuji apple IRA but the congeneric apple leaf casebearer, *A. tokiella* is listed but as not associated with the fruit. Perhaps, *A. pyrivorella*, even if not specific to pears, may be treated the same by BA. However the common

name suggests it does occur in fruit (pear, at least) so its specificity (non-occurrence in apples) needs to be checked.

- 2. Powdery pear phylloxera, *Aphanostigma iakusuiensis* (Kishida) YES PM. It does not appear in Japanese fuji apple IRA and is perhaps specific to pears or absent from Japan.
- 3. Pear wood psylla, *Cacopsylla pyrisuga* (Forster) YES PM. It is listed in Japanese fuji apple IRA (therefore not specific to pears) but as not in pathway.
- 4. Sloe bug, *Dolycoris baccarum* Linnaeus YES PM. It does not appear in Japanese fuji apple IRA and is perhaps specific to pears or absent from Japan. However the alternative common name of berry bug in Appendix 2 of Chinese pear import review suggests it is not specific to pears.
- 5. Tree stink bug, *Halyomorpha picus* (Fabricius) but note that tree stink bug (or brown marmorated stink bug), *H. halys* Stal** is listed YES PM for *H. picus*. Although *H. picus* does not appear in Japanese fuji apple IRA, *H. halys* is listed as having a medium risk of being in pathway and hence requiring inspection for risk management. So it is likely, given its listing in Appendix A of the Chinese apples issue paper, that it will require risk reduction through inspection. Note also that the congeneric or synonymous, *H. mista* is given Risk 1 status in New Zealand's 1999 requirement for Korean pears.
- 6. ***Large black chafer, *Holotrichia parallela* (Motschulsky) but note that scarab beetle, H. scrobiculata Kiesenwetter** is listed. Two Holotrichia species occur in the Chinese pear list but only one, a different species, in the Chinese apple list. YES PM, that is, both those in the Chinese pear list required inspection. Are these scarabid beetles so host specific as to occur on pears but not apples? A Chinese website (www.last.gov.cn:8080/main.php?page=19, see text at end of this paper, says that *H. parallela* (not in the apple list) does occur on apple trees. The genus is not mentioned in the Japanese fuji apple IRA. The NZ MAFF Import Health Standard for Korean pears (1999) lists 3 Holotrichia species, including one, H. titanis in common with the Chinese lists, in its Group 1 risk list. Six Holotrichia species are pests of white poplar in China and many Holotrichia species seem to occur in Asia. This information is not critical but should be clarified - the Chinese Ya pear import requirement is inspection for two Holotrichia species, so BA will probably propose the same as a management option for Chinese apples and this, in practice, will probably detect any Holotrichia species. Perhaps the apple IRA should consider the genus, *Holotrichia* rather than nominate particular species?
- 7. Brown chafer, *Holotrichia titanis* Reitter **but** scarab beetle, *H. scrobiculata* Kiesenwetter is listed. See preceding comments for *H. parallela*.
- 8. Pear sawfly, *Hoplocampa pyricola* Rohwer. YES PM. Not in Japanese fuji apple IRA and is perhaps specific to pears or absent from Japan.

9. Pear white scale, *Lopholeucaspis japonica* (Cockerell). YES PM. It appears in the Japanese fuji apple IRA as having a medium risk of being in pathway and hence requiring inspection for risk management.

Three of the above nine species (2, 4 & 8) didn't appear in the Japanese apple IRA perhaps because they do not occur on apples or merely do not occur in Japan. One species (1) had a congener in the Japanese apple IRA. This needs to be clarified.

*YES PM indicates that inspection and/or management was nominated for this species in the Chinese pear import review (see its Appendix 2).

** Do the two species asterisked above (*Ha. halys* and *Ho. scrobiculata*) are synonymous with any in the Asian pear import review. For *H. halys* this information is not critical but should be clarified - the Japanese fuji apple IRA required inspection for risk management of *Halymorpha halys* (= *H. mista*) while Chinese Asian pear review also required management for the *H. picus*.

*** **Holotrichia parallela** Motschulsky is distributed in Northeast, North, East, Southwest, Northwest and Henan Province of China. It is also distributed in Japan, Korea Peninsula and Russia. One generation occurs per year in the northern part of China. The larvae of the third instar pass winter. The occurrence stage of adult is in June and July. They cause damage in May and from August to October. The adults feed on leaves of elm, willow, pear, apple, etc. The larvae damage the underground parts of various crops and stocks. Source - www.last.gov.cn:8080/main.php?page=19:

Comparison with Chinese Asian Pear Import Review

Of the 65 species in Appendix A of *Chinese apple issues paper* that are asterisked as also occurring on pears, 19 appear in Table 7, *Pests of quarantine concern* of the *Chinese Asian pear import review* (IAPC) while 46 do not appear, suggesting that they are regarded by BA as not occurring on the pathway or are already present in Australia.

Perusal of Appendices 1 and 2 in IAPC reveals that those in bold type below occur in Australia. This includes <u>San Jose scale</u> for which Tasmania has an Import Requirement directed not at fruit but at other plant parts. The 46 species are listed below with comments on their likelihood to be on fruit. The comments were gleaned from IAPC, Appendix 1 (which gives microhabitat data) or Appendix 2 (which merely gives in/out pathway assessment).

Those not found in IAPC appendices need further explanation or consideration. Ideally, those mentioned in IAPC Appendix 2 as simply not being in pathway need further exposition of 'microhabitat and source' as in Appendix 1. For species 26, 30 and 39 there may be inconsistency between their assessment in Chinese pear review versus Japanese fuji apple IRA***.

1. Brown apple mite, Bryobia rubrioculus (Scheuten, 1857) IN AUSTRALIA

2. Spider mite, *Eotetranychus pruni* (Oudemans, 1931) – Not found in IAPC Appendices.

3. Two-spotted spider mite, Tetranychus urticae Koch, 1836 IN AUSTRALIA

- 4. Apple wood borer, *Agrilus mali* Matsumra, 1924. IAPC, Appendix 2, not in pathway.
- 5. Scarab beetle, Anomala corpulenta Motschulsky, 1853 LEAF & ROOT
- 6. Asian long-horned beetle, *Anoplophora glabripennis* (Motschulsky, 1853) *Not found in IAPC Appendices.*
- 7. Long-horned stem borer, *Apriona germari* (Hope, 1831) TRUNK, BRANCH, STEM, LEAF
- 8. Blue pear twig borer, Bacchisa fortunei (Thomson, 1857) LEAF & STEM
- 9. Golden jewel beetle, Lamprodila limbata (Gebler, 1832) STEM
- 10. White-spotted flower chafer, *Protaetia brevitarsis* Lewis, 1879 IAPC, Appendix 2, not in pathway (as *Potosia brevitarsus*)
- 11. Citrus flower chafer, *Gametis jucunda* (Faldermann, 1835) *Not found in IAPC Appendices*.
- 12. Apple fairy chafer, *Proagopertha lucidula*, (Faldermann, 1835) FLOWER, LEAF & ROOT.
- 13. Smaller velvety chafer, Maladera orientalis (Motschulsky, 1857) LEAF & ROOT

14. Apple aphid, Aphis spiraecola Patch, 1914 IN AUSTRALIA

- 15. Japanese wax scale, *Ceroplastes japonicus* Green, 1921 IAPC, Appendix 2, not in pathway.
- 16. Green leafhopper, Cicadella viridis (Linnaeus, 1758) LEAF & STEM.
- 17. Blackish cicada, *Cryptotympana pustulata* (Fabvricius, 1787) STEM if synonymous with *C. atrata* (Fabricius, 1775) and IAPC, Appendix 2, merely says not in pathway for *C. pustlata* (?atra)

<u>18. San Jose Scale, Diaspidiotus perniciosus (Comstock, 1881)</u> IN AUSTRALIA (NOT in Tasmania)

- 19. Giant mealybug, Drosicha corpulenta (Kuwana, 1902) BARK.
- 20. Small green leafhopper, *Empoasca flavescens* (Fabricius, 1794) IAPC, Appendix 2, not in pathway.

- 21. Globular peach scale, *Eulecanium kunoense* (Kuwana, 1907) BRANCH, LEAF & STEM.
- 22. Grape leafhopper, Erythroneura apicalis (Nawa, 1913) Not found in IAPC Appendices
- 23. Tree stink bug, *Halyomorpha halys* Stal, 1855 (*H. picus* (Fabricius) is in Table 7 as **in** pathway)
- 24. Coccid scale, *Rhodococcus sariuoni* Borchsenius, 1955 Not found in IAPC Appendices.
- 25. Blackthorn scale, *Sphaerolecanium prunastri* (Boyer de Fonscolombe, 1834) *Not found in IAPC Appendices.*
- 26. Apple dagger moth, *Acronicta increta* Morrison, 1974 LEAF but Japanese fuji IRA says '?yes' on pathway and recommends inspection.
- 27. Knotgrass moth, *Acronicta rumicis* (Linnaeus, 1758) LEAF ONLY but note policy in Japanese fuji IRA for previous congeneric species.
- 28. Green actias moth, Actias selene ningpoana Felder & Felder, 1862 LEAF ONLY
- 29. Blackveined white butterfly, *Aporia crataegi* (Linnaeus, 1758)) IAPC, Appendix 2, not in pathway.
- 30. Apple leafroller, *Archips xylosteanus* (Linnaeus, 1758)) IAPC, Appendix 2, not in pathway **but this and 5 congeneric species require inspection for Japan fuji apples).**
- 31. Codling moth, Cydia pomonella Linnaeus, 1758 IN AUSTRALIA
- 32. Yellow peach moth, *Dichocrocis punctiferalis* Guenee, 1854 IN AUSTRALIA.
- 33. Browntail moth, Euproctis similis (Fuessly, 1775) BARK, BUD & LEAF.

34. Cotton bollworm, Helicoverpa armigera (Hubner, 1805) IN AUSTRALIA

- 35. Pear leaf worm, Illiberis pruni Dyar, 1905 BUD & LEAF.
- 36. Tent caterpillar, *Malacosoma neustria testacea* Motschulsky, 1861 BUD & LEAF.
- 37. Oriental fruit moth, Monema flavescens (Walker, 1855) BUD & LEAF.
- 38. Apple caterpillar, *Odonestis pruni* (Linnaeus, 1758) IAPC, Appendix 2, not in pathway.

- 39. Fruit-piercing moth, *Oraesia excavata* (Butler, 1878) 1854 *Not found in IAPC Appendices* **but for Japanese fuji apples inspection is required.**
- 40. Green urticating caterpillar, Parasa consocia Walker, 1863 LEAF.
- 41. Stinging caterpillar, *Parasa hilarata* (Staudinger, 1887) IAPC, Appendix 2, not in pathway.
- 42. Cherry caterpillar, *Phalera flavescens* (Bremer & Grey, 1852) IAPC, Appendix 2, not in pathway.
- 43. Apple leafminer, Phyllonorycter ringoniella (Matsumura, 1931) BUD & LEAF.
- 44. Cherry tree borer, *Synanthedon hector* (Butler, 1878) TRUNK, BRANCH, STEM & TWIG.
- 45. Black star leaf roller, *Telphusa chloroderces* Meyrick, 1929 IAPC, Appendix 2, not in pathway.
- 46. Coconut cup moth, Thosea sinensis (Walker, 1855) BUD & LEAF.

*** The following species occur in Appendix A of Chinese apples issues paper (asterisked to indicate occurrence on pears as well as apples) and in Japanese fuji apple IRA as requiring inspection and/or management but do not appear in Table 7 (pests of quarantine concern) of Chinese Asian pears review. Is there an inconsistency in policy for Chinese pears and Japanese apples?:

- > apple dagger moth (*Acronicta intermedia* = *A. increta*). LEAF ONLY
- > apple leafroller, *Archips xylosteanus* (and five congeneric species require inspection for Japanese fuji apples).
- fruit-piercing moth, Oraesia excavata

The following species occur in Appendix A of Chinese apple issue paper, in Table 7 of Chinese Asian pears import review (IAPC) and in Japan fuji IRA as requiring inspection and/or management. Upper case annotations are from Appendix 1 of IAPC. Hence we anticipate that the draft IRA for Chinese apples will do the same:

- Summer fruit tortrix, *Adoxophyes orana* FRUIT, LEAF & SHOOT
- Peach fruit borer, Carposina sasakii FRUIT & SEED (Highest risk status in NZ requirement for Korean pears)
- Manchurian fruit moth, Grapholita inopinata (Cydia inopinata previously) Appendix 2 says high association with fruit.
- > Oriental fruit moth, *Grapholita molesta* FRUIT, LEAF, STEM & TWIG.
- Apple brown tortrix, Pandemis heparana FRUIT, LEAF, SHOOT, FLOWER & BUD.
- European red mite, Panonychus ulmi. Appendix 2 says high association with fruit - FOR WA ONLY.

- Comstock's mealybug, *Pseudococcus comstocki* FRUIT, BUD, LEAF & ROOT.
- Japanese pear weevil, Rhynchites heros (in table 7as R. coreanus and R. foveipennis) FRUIT.
- ▶ White fruit moth, *Spilonota albicana* Appendix 2 says associated with fruit.
- Eye-spotted bud moth, Spilonota ocellana Appendix 2 says associated with fruit.
- Hawthorn spider mite, Tetranychus viennensis (in Appendix A as Amphitetranychus viennenesis.) – Appendix 2 says high association with fruit.
- > Pear stink bug, *Urochela luteovaria* FRUIT & LEAF.

In addition, fruit tree tortrix, *Acleris fimbriana* is in Appendix A of Chinese apples issues paper (asterisked to indicate occurrence on pears as well as apples), in Table 7 (pests of quarantine concern) of Chinese Asian pears review and its Appendix 2 as associated with fruit and requiring inspection. Two congeneric species occur in the Japanese fuji apple IRA, one of which required risk management by inspection (For Japanese fuji apples, *A. boscana ulmicola* required inspection but *A. cristana* was not in pathway).

The greometrid moth, *Apocheima cinerarium* occurs in Appendix A of issues paper for Chinese apples but is not asterisked as also occurring on pears although it is listed in Appendix 1 of Chinese pear import review but as not being in pathway (BUD & LEAF). However, the Japanese fuji apple IRA lists the congeneric looper caterpillar, *Apocheima juglansiaria* but also as not being in pathway. Need to check for possible synonymy and reliability of host specificity data.

General comments on Pest List

Appendix A of China apple issues paper seems short. It lists no thrips, no ladybird beetles, only two weevils, no earwigs, only five aphids, no lacewings, no psocoptera, no nitidulid beetles and no *Calyptra* fruit-piercing moth species (unlike the Japanese fuji assessment). Contrast this with draft list of arthropods associated with apple production in Australia recently prepared for China. The following exercise also helps to gauge possible omissions in the Chinese apple list.

NZ MAFF assessment for Korean pears.

The following species are risk 1 items in New Zealand's import requirement for Korean pears but do not appear in the China apples issue paper, Appendix A. Are they already present in Australia? Do they occur in China? Are they not associated with apples? Note that some occur in Japan and Korea and some attract risk mitigation measures for apples from Japan:

Cucurbit leaf beetle, Aulacophora femoralis. Black flower beetle, Carpophilus chalybeus Scarab beetle, Ectinohoplia rufipes Brown velvet chafer, Gastroserica similis Four-spotted stink bug, Homalogonia obtusa (Inspection for Japanese apples to Australia) Green stink bug, *Nezara antennata* (Inspection for Japanese apples to Australia) Oriental stink bug, *Plautia stali* (Inspection for Japanese apples to Australia)

Chestnut-leaved oak bug, Urostylis westwoodi

Orange spiny whitefly, Aleurocanthus spiniferus

Mealy plum aphid, *Halyopterus pruni*

Red wax scale, *Ceroplastes rubens* (*C. japonicus* in Appendix A; *C. floriferus* and *C. floridensis* in Japanese fuji IRA although not in pathway)

Pear oystershell scale, *Lepidosaphes conchiformioides* (Inspection and management for Japanese apples to Australia)

Dark oystershell scale, *Lepidosaphes tubulorum* (also present in Japan but not in pathway for fuji apples)

3 *Parlatoria* scales including tea black scale, *P. theae* which is present in Japan, not in pathway for fuji apples.

White peach scale, *Pseudaulacaspis pentagona*

Matsumoto mealybug, Crisicoccus matsumotoi

Pear mealybug, *Dysmicoccus wistariae* (Inspection for Japanese apples to Australia)

Apple mealybug, *Phenacoccus aceris* ((the congeneric or perhaps synonymous *P. pergandei* requires inspection for Japanese apples to Australia)

Japanese wisteria mealybug, Planococcus kraunhiae

3 *Cacopsylla* psyllids including *C. pyrisuga* which is also present in Japan but not in pathway for fuji apples

Pear bark miner, *Spulerina astaurota* (Inspection and management for Japanese apples to Australia)

Lappet, Gastropacha quercifolia

Smaller lasiocampid, *Phyllodesma japonica*

Holly blue butterfly, Celastrina argiolus

Tussock moths, 2 *Orgyia* species, *O. antiqua* and *O. thyellina*. *O. thyellina* and 3 other congeneric species are in Japanese fuji IRA. One of these, *O. excavata* requires inspection.

Moth, no common name, *Adris tyrannus* (Inspection and management for Japanese apples to Australia)

Copper underwing moth, Amphipyra pyramidea

Fruit-piercing moth, *Calyptra lata* (Inspection and management for Japanese apples to Australia)

Fruit-piercing moth, *Calyptra thalictri* (Inspection and management for Japanese apples to Australia). Note *C. gruesa* also occurs in Japanese apple IRA as requiring inspection.

Small yellow-hindwinged catocala, Catocala agitatrix

Ring-marked yellow-hindwinged noctuid, *Catocala fulminea* which is also present in Japan but not in pathway for fuji apples

Fruit-piercing moth, Eudocima fullonia

Fruit-piercing moth, *Lagoptera juno* (Inspection and management for Japanese apples to Australia)

Fruit-piercing moth, *Oraesia emarinata* (Inspection and management for Japanese apples to Australia). Note, the congeneric *O. excavata* is in listed Appendix A as well as Japanese apple IRA.

References

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AFFA, 2003. 'Import of Asian ('Shandong') pear (*Pyrus pyrifolia* (Burm.) Nakai and *P. ussuriensis var. viridis* T. Lee) fruit from Shandong Province in the People's Republic of China. (IAPC acronym used above).

MAFF NZ, 1999. Import Health Standard. Commodity Sub-class: Fresh Fruit/Vegetables. Korean pear, *Pyrus pyrifolia* from the Republic of Korea. 18 pp.

13. The Tasmanian Government recommends BA take into account the observations made above regarding pest assessments for previous IRAs and conduct similar comparative exercises for other previous IRA work, as relevant, and potential omissions from Appendix A of the Issues paper, in the course of preparing the Chinese apple IRA.