# FINAL IMPORT RISK ANALYSIS ON THE IMPORTATION OF FRESH FRUIT OF KOREAN PEAR (Pyrus ussuriensis var. viridis T. Lee) FROM THE REPUBLIC OF KOREA

**MARCH 1999** 

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It is my determination that the importation of fresh fruit of Korean pear (*Pyrus ussuriensis* var. *viridis* T. Lee) from the Republic of Korea will be permitted subject to the application of phytosanitary requirements as specified in Section 6 of this final import risk analysis paper. These requirements maintain Australia's appropriate level of protection and Australia's international rights and obligations under the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures.

Paul Hickey Executive Director

March 1999



## Acknowledgments

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# 1. AUSTRALIAN QUARANTINE AND INSPECTION SERVICE'S (AQIS'S) POSITION

Subject to the application of the appropriate phytosanitary requirements (given in full in Section 6 of this document) the Australian Quarantine and Inspection Service (AQIS) approves the importation of fresh Korean pear fruit from the Republic of Korea.

## 2. EXECUTIVE SUMMARY

AQIS received an application to import fresh Korean pear fruit from the Republic of Korea (hereinafter referred to as Korea) in February 1990 from the National Plant Quarantine Service (NPQS). The application was subjected to an import risk analysis (IRA), based on the relevant International Standards for Phytosanitary Measures (ISPM) and other standards being developed by the Secretariat of the International Plant Protection Convention (IPPC) of the Food and Agriculture Organization (FAO) of the United Nations.

## **Risk Identification**

The IRA process took into account factors such as the biology, host range, distribution, entry potential, establishment potential, spread potential and economic damage potential of the pests and diseases that may be associated with fresh Korean pear fruit. The risk analysis (AQIS, 1997a) identified 27 quarantine pests and diseases of concern to Australia that have a significant risk of being associated with trade in fresh Korean pear fruit. Three of these diseases have a questionable distribution in Korea and are discussed in more detail below. The 27 quarantine pests<sup>1</sup> and diseases are identified as either not present in Australia or present with restricted distribution and under official control. The risk analysis identified management procedures which could reliably reduce the risk of these pests and diseases being associated with fresh Korean pear fruit imported into Australia to a negligibly low level.

Three diseases, *Erwinia amylovora* (fire blight), *Monilinia fructigena* (brown rot) and *Nectria galligena* (European canker) were identified as being of concern to Australia based on published information on their presence in Korea. Fire blight has previously been recorded in Korea (The Korean Society of Plant Protection, 1986), although it is not currently considered to be present in Korea (International Mycological Institute, 1993; van der Zwet, 1996). Both brown rot and European canker have been recorded in Korea (CAB International Mycological Institute, 1990; Commonwealth Mycological Institute, 1985). NPQS has indicated that all three of these diseases are not present in Korea but has only provided incomplete technical and scientific information to demonstrate the absence of these diseases. Fire blight, brown rot and European canker are not present in Australia (fire blight was detected in the Melbourne Royal Botanic Gardens, Australia in 1997 but is now considered eradicated). Notwithstanding the uncertainty of these records, the risk analysis identified management procedures which could reduce the risk of these diseases being associated with fresh Korean pear fruit imported into Australia to a negligibly low level.

One additional disease, *Erwinia pyrifoliae* (known in Korean as black stem blight) is a fire blightlike disease, and was identified in the addendum to the draft IRA (AQIS, 1999) as a new disease

<sup>&</sup>lt;sup>1</sup> A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (FAO, 1997a)



identified from Asian pear in Korea. NPQS has indicated that black stem blight is confined to five isolated areas to the north of the Han River. This disease is not known to be present in pear trees in the production areas south of the Han River, based on surveys and laboratory investigations. An AQIS consultant plant pathologist who visited the export and adjoining non-export orchards south of the Han River reported the orchards to be free of fire blight and fire blight-like diseases. Black stem blight is not present in Australia. The addendum to the draft IRA identified management procedures which could reduce the risk of black stem blight being associated with fresh Korean pear fruit imported into Australia to a negligibly low level.

After consideration of the total 28 pests and diseases, and stakeholder consultation, AQIS has concluded that the risk posed by the pests and diseases could be managed with appropriate phytosanitary requirements. The measures proposed to address the risk posed by these pests and diseases are set out below.

## **Risk Management**

The following risk management procedures are determined to be appropriate to reduce the likelihood of the quarantine pests and diseases being associated with fruit to negligible levels.

Nineteen of the identified quarantine pests and diseases can be managed through the following procedures, or equivalent measures: orchard registration, pest surveillance and management programs, bagging of fruit, joint preclearance inspection and phytosanitary certification (see Section 6-Phytosanitary Requirements, Items 1, 2, 5, 7 and 8). These pests and diseases are: *Adoxophyes* spp. (tortrix), *Aphanostigma iakusuiense* (pear phylloxera), *Argyresthia conjugella* (apple fruit moth), *Carposina sasakii* (peach fruit moth), *Crisicoccus matsumotoi* (Matsumoto mealybug), *Dysmicoccus wistariae* (pear mealybug), *Ectomyelois pyrivorella* (pear fruit moth), *Grapholita molesta* (Oriental fruit moth), *Lepidosaphes conchiformioides* (pear oystershell scale), *Panonychus ulmi* (European red mite), *Phenacoccus aceris* (apple mealybug), *Planococcus kraunhiae* (Japanese mealybug), *Pseudaonidia duplex* (camphor scale), *Pseudococcus comstocki* (Comstock mealybug), *Rhynchites foviepennis* (Korean pear weevil), *Rhynchites heros* (peach curculio), *Spulerina astaurota* (pear barkminer), *Tetranychus viennensis* (hawthorn red spider mite), *Tetranychus kanazawai* (tea red spider mite).

Five of the quarantine diseases require additional specific management strategies and phytosanitary requirements due to their biological properties, including pathogenicity, extent of host range, potential economic impact and difficulty of visual detection. A combination of the following additional management strategies, or equivalent measures, must be used to manage the risk posed by these diseases: monitoring and detection surveys, area<sup>2</sup> freedom and disease latency tests (see Section 6-Phytosanitary Requirements, Items 2, 4 and 6). These diseases are: *Alternaria gaisen* (black spot), *Botryosphaeria berengeriana* f.sp. *piricola* (physalospora canker), *Gymnosporangium asiaticum* (Japanese pear rust), *Gymnosporangium shiraianum* (pear-juniper rust), and *Venturia nashicola* (pear scab).

Requirements for the remaining diseases of concern are as follows. *Erwinia amylovora* (fire blight): detection/monitoring surveys and area freedom, or equivalent measures; *Monilinia fructigena* (brown rot) and *Nectria galligena* (European canker): detection/monitoring surveys, area freedom and disease latency tests, or equivalent measures; and *Erwinia pyrifoliae* (black stem

<sup>&</sup>lt;sup>2</sup> An officially defined country, part of a country or all or parts of several countries (FAO,1997a)



blight) detection/delimiting/monitoring surveys, eradication program and area freedom, or equivalent measures (see Section 6-Phytosanitary Requirements, Items 2, 4 and 6).

The following table shows these additional management strategies of monitoring and detection surveys, area freedom and disease latency tests.

Pest or Disease	Detection/	Area Freedom	<b>Disease Latency</b>
	Monitoring Survey		Tests
black stem blight			
fire blight			
black spot	$\checkmark$		$\checkmark$
pear-juniper rust			
Japanese pear rust			
brown rot	$\checkmark$	$\checkmark$	$\checkmark$
European canker	$\checkmark$		
physalospora canker			
pear scab		$\sqrt{(\text{at blossoming})}$	

An AQIS consultant plant pathologist with extensive experience with these diseases visited the export areas at preharvest in September 1998. The purpose of this visit was to survey the orchards for pests and disease of quarantine concern to Australia, audit disease survey results and initiate latency tests, or equivalent measures. The consultant reported that all registered export and non-export orchards examined in the Seong Whan area were free of diseases of quarantine concern to Australia including fire blight or fire blight-like diseases. If in subsequent years fruit is to be exported from new areas, a similar visit is required. Additionally, an AQIS inspector will visit Korea each year of trade for preclearance inspection both in the field and packing house.

In the event of quarantine pests or diseases being detected in any export 'lots<sup>3</sup>' at preclearance inspection, all fruit from orchards comprising that 'lot' must be rejected. If any pests or diseases that are managed by requiring area freedom are detected, imports must cease immediately pending the outcome of an investigation.

AQIS is satisfied that importation of Korean pear under the specified conditions will present negligible risk to the environment and accordingly that the obligations arising from the Administrative Procedures made under the Environment Protection (Impact of Proposals) Act 1974 have been met.

# Implementation

AQIS will develop an arrangement with NPQS based on these requirements, and outline the phytosanitary requirements for the importation of fresh Korean pear fruit. AQIS's Animal and Plant Programs Branch (APPB) together with AQIS's Plant Quarantine Policy Branch (PQPB) will develop a checklist and document an procedure for field, packing house and preclearance inspections. APPB will ensure implementation of import conditions, audit the program and jointly with PQPB, monitor field controls of pests of quarantine concern, trapping data, test data, and

<sup>&</sup>lt;sup>3</sup> A number of units of a single commodity, identifiable by its homogeneity of composition, origin, etc., forming part of a consignment (FAO,1997a)



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inspector's visit reports. Phytosanitary requirements for the importation of fresh Korean pear fruit from Korea will be subject to ongoing monitoring of compliance with technical reporting and feedback and must be reviewed at the end of the first year of trade.

# **3. BACKGROUND**

The importation of fruit of Korean pear (*Pyrus ussuriensis* var. *viridis* T. Lee) was initially proposed by the Korean Agriculture and Fisheries Food Export Association through NPQS in February 1990. At the Australian/Korean technical discussions held in Canberra in August 1996 AQIS agreed to accept import of fresh Korean pear fruit provided mutual agreement could be reached on an arrangement to obtain quarantine security for pests of concern to Australia.

AQIS commenced an Import Risk Analysis (IRA) in 1996 in accordance with the relevant International Standards for Phytosanitary Measures (ISPM) (ie. *Reference Standard, Principles of Plant Quarantine as Related to International Trade, ISPM No. 1, FAO* 1995; *Part 1-Import Regulations, Guidelines for Pest Risk Analysis, ISPM No. 2, FAO* 1996; and other standards being developed by the Secretariat of the International Plant Protection Convention (IPPC) of the Food and Agriculture Organization (FAO) of the United Nations). Pests and diseases of quarantine concern and proposed management options were identified in the IRA document, *Pest Risk Analysis of the Importation of Fruit of Korean Pear* (*Pyrus ussuriensis var. viridis* T. Lee) *from the Republic of Korea* (1997a).

AQIS developed a draft IRA entitled *Discussion Paper and Phytosanitary Requirements on Pest Risk Analysis of the Importation of Korean Pear Fruit from the Republic of Korea* (1997b), summarising the pests identified in the IRA requiring specific management and inspection procedures. This document was circulated for stakeholder consultation on 31 July 1997. At the same time draft IRAs for the importation of ya pear from the People's Republic of China and Fuji apples from Japan were circulated. Comments were requested by 15 September 1997 and the date was later extended to 31 October 1997 at the request of several stakeholders.

Notification of the proposed importation was provided to the World Trade Organization (WTO) as required under the provisions of the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).

AQIS received advice on 13 October 1998 that a novel pathogenic bacterium (*Erwinia pyrifoliae*, black stem blight), similar to the organism that causes fire blight (*Erwinia amylovora*, fire blight), had been identified from pears in Korea (*Pyrus pyrifolia* Nakai cv. 'Shingo' and 'Mansamgil', *Pyrus ussuriensis* var. *viridis* T. Lee). As a result of this new information, the final IRA, which was prepared on the basis that fire blight or fire blight-like organisms did not exist in Korea, had to be amended. Stakeholders were advised of the delay in finalisation of the IRA on Korean pear on 4 November 1998 when it became clear that more technical information was required on the new disease. Following provision of additional information by NPQS, AQIS produced an addendum to the draft IRA which was circulated to stakeholders on 22 January 1999 for a thirty day consultation period. The consultation period was extended until 26 February 1999 at the request of several stakeholders.

In this document the term Import Risk Analysis is synonymous with the term Pest Risk Analysis defined in the *Glossary of Phytosanitary Terms* (1997).



# 4. STAKEHOLDER CONSULTATION

AQIS sent the draft IRA to 70 stakeholders and received 22 written replies (Section 10-List of Respondents). These comprised 9 from industry groups representing growers, 7 from Australian State Departments of Agriculture, 2 from Commonwealth Departments, 3 from research organisations and 1 from NPQS.

AQIS sent the addendum to the draft IRA to 202 stakeholders and received 8 written replies (Section 10-List of Respondents). These comprised 3 from industry groups representing growers, 3 from Australian State Departments of Agriculture, 1 from a Commonwealth Department and 1 from a research organisation.

## In summary:

- Sixteen respondents either supported or did not oppose the importation; however many respondents suggested modifications to the import conditions proposed in the draft IRA. Five respondents supported the conditions for importation set out in the addendum to the draft IRA and also suggested modifications. The matters raised by respondents are discussed in Section 9-Issues Raised by Stakeholders in Response to AQIS's Draft IRA.

- Six respondents opposed the conditions for importation set out in the draft IRA. Three respondents opposed the conditions for importation set out in the addendum to the draft IRA. The respondents were concerned that the risk of exotic pests and diseases entering Australia and causing economic and environmental damage would be too great.

- No pests additional to those listed in the draft IRA were identified by the respondents. On the basis of information provided by one respondent the status of one pest was amended from nonquarantine to quarantine (Section 9-Issues Raised by Stakeholders in Response to AQIS's Draft IRA, Issue 5).

# 5. SUMMARY OF IMPORT CONDITIONS

The following conditions, or equivalent measures, are required for importation of fresh Korean pear fruit from Korea.

- registration of export orchards
- pest surveillance and management programs in the production areas
- inspection at blossoming (petal tests)
- bagging of fruit
- fruit fly monitoring
- area freedom
- audit of available disease survey data
- preharvest visit by AQIS consultant plant pathologist
- disease latency infection tests
- preharvest inspection of orchards and packing houses by AQIS inspector
- preclearance inspection
- phytosanitary certification



- verification of consignment in Australia

Fruit is not permitted into Western Australia as apples and pears from any source are currently prohibited entry under WA State legislation. However, there will be no restrictions imposed by AQIS on other ports of entry.

To address the issues raised by the lack of complete survey data and possible latent infection on fruit, AQIS has altered several conditions which were specified to in the draft IRA (AQIS, 1997b). The principal changes are:

- preharvest visit by AQIS consultant plant pathologist
- disease latency infection tests
- preclearance inspection
- removal of requirement for on-arrival inspection of fruit

To address the risk of black stem blight (*Erwinia pyrifoliae*) the following procedures have been adopted by NPQS in order to meet AQIS requirements:

- national and regional surveys for detection, delimiting and monitoring of disease outbreaks at indicative growth stages in the infected area, buffer zones and disease free areas;
- sourcing fruit from production areas south of Han River proven to be free from the disease by survey data;
- designating infected areas as quarantine areas;
- eradicating and destroying infected plants in quarantine areas;
- prohibiting the movement of all host material including pear plants for propagation;
- prohibiting the importation of propagating material from countries where fire blight occurs;
- suspending infected orchards from supplying fruit to the market;
- notifying AQIS immediately of any confirmed outbreaks of the disease;

The revised phytosanitary requirements for the importation of fresh Korean pear fruit are given in Section 6-Phytosanitary Requirements.



# 6. PHYTOSANITARY REQUIREMENTS

The following requirements are to be implemented for the first year of trade (the conditions are to be reviewed at the end of the first season of export of trade).

## Item 1. Registration and submission of information

All export orchards must be identified to enable trace back in the case of non-compliance. Fresh Korean pear fruit for export to Australia must be sourced only from NPQS registered export orchards in designated export areas<sup>4</sup>. Fruit must be packed in NPQS registered packing houses in the designated export area. Maps showing the location and registration number of each export orchard and packing house are to be provided to AQIS by NPQS when test results for brown rot, black spot and pear scab are sent before commencement of trade.

Item 2. Pest management program and general surveillance

NPQS must ensure that export orchards are subject to field sanitation and control measures against quarantine pests in List 1 (Section 8-Revised Summary of Quarantine Pests with High Risk Potential for Australia). These controls provide regulatory assurance that export orchards are free from pests of quarantine concern to Australia. Data from pest and disease field detection, sanitation and control programs are to be forwarded to AQIS by NPQS before commencement of trade. NPQS must provide a revised copy of the pest management program to the AQIS inspector at preclearance inspection if there is any change to the pest control program.

Detection/monitoring surveys for pests and diseases must be conducted by NPQS in orchards registered for export within the designated export areas. NPQS must submit the results using an agreed reporting format to AQIS. Surveys must include fruit flies (*Bactrocera* spp.), black spot (*Alternaria gaisen*), European canker (*Nectria galligena*), Japanese pear rust (*Gymnosporangium asiaticum*), pear-juniper rust (*Gymnosporangium shiraianum*), physalospora canker (*Botryosphaeria berengeriana* f.sp. *piricola*), brown rot (*Monilinia fructigena*), pear scab (*Venturia nashicola*), fire blight (*Erwinia amylovora*) and black stem blight (*Erwinia pyrifoliae*). If any other exotic pest incursion is detected then AQIS must be notified immediately for appropriate action to be taken.

NPQS must also ensure that an alternative to removal of telial hosts (*Juniperus chinensis*, *J. procumbens*) of Japanese pear rust and pear-juniper rust, such as a chemical control program, is undertaken to combat the disease in both pear orchards and junipers. If Japanese pear rust or pear-juniper rust (*Gymnosporangium asiaticum*, *G. shiraianum*) are found, fruit from the orchards within 2km of the infected site will not be accepted into Australia.

If physalospora canker (*Botryosphaeria berengeriana* f.sp. *piricola*) is found all fruit from affected registered export orchards will be rejected.

NPQS must coordinate on-going regional/national surveys (north and south of the Han River) for the purpose of detecting black stem blight (*Erwinia pyrifoliae*) and provide summarised details to AQIS before exports commence each year. NPQS must inform AQIS immediately if there is a confirmed detection of pathogenic *Erwinia* spp. anywhere in Korea, including unregistered

<sup>&</sup>lt;sup>4</sup> A designated area is a defined area that has been approved by AQIS to export fresh Korean pear fruit to Australia 12



orchards, household fruit trees, abandoned pear trees and other host plants, in which case trade will be suspended pending a joint investigation by NPQS and AQIS.

The designated export areas must be free from fire blight (*Erwinia amylovora*), black stem blight (*Erwinia pyrifoliae*) and European canker (*Nectria galligena*). If fire blight is found NPQS must immediately inform AQIS and imports will be suspended pending an investigation. In the event of black stem blight detection, NPQS must impose an appropriate quarantine zone and survey orchards within 15km radius of the outer boundary of infected sites to delimit the infected area. AQIS will consider importation of pear fruit from registered orchards outside the 15km radius buffer zone when evidence is provided that the disease outbreak is contained. If European canker is found, fruit from that designated export area will not be accepted into Australia.

## Item 3. Fruit fly monitoring

NPQS must continue the current sentinel fruit fly monitoring program for Tephritidae already being carried out in Korea, ie. monitoring airports, seaports, fruit production areas and markets of imported fruit. Information including number and location of traps, data on trap catches, and species caught must be provided to the AQIS inspector for audit at preclearance inspection. If any fruit fly species are detected, NPQS must inform AQIS Canberra office immediately. If fruit flies are detected trade will be suspended immediately pending the outcome of an investigation.

## Item 4. Disease surveillance

NPQS must inspect all export orchards and a sample of non-export orchards inside and outside the designated export area at blossoming. NPQS must conduct petal testing for black spot (*Alternaria gaisen*) and brown rot (*Monilinia fructigena*), inspect flower clusters for pear scab (*Venturia nashicola*), and must monitor the levels of pests of concern.

## Petal testing for black spot and brown rot

Testing must be conducted as follows:

1) Select 10 trees at random from each orchard just before full bloom.

2) Randomly select 10 flowers from each selected tree and incubate in air-tight containers at 23°C for 3 days and record the percentage of petal infection.

Export of fruit will be permitted from export areas comprised of orchards which have an average of not more than 0.5% infection of black spot, based on petal testing. If brown rot is detected in registered export orchards or in tested adjacent orchards in any designated export area, fruit from that export area will not be permitted entry into Australia.

## Flower cluster inspection for pear scab

Inspection must be conducted as follows: sample 50 flowers at random from each orchard just before full bloom and record the percentage of flowers infected.

Export of fruit will not be permitted from orchards with scab infection present at flower cluster inspection.

The results of petal testing and flower cluster inspection should be provided to AQIS by NPQS as soon as they are available.

## **Item 5.** Bagging of fruit and storage

Double-layered bags must be placed over fruit when the fruit is no more than 2.5cm in diameter.



Fruit is to be bagged to minimise the risk of exposure to diseases and pests. Export fruit must be clearly identifiable from domestic fruit. Only fruit with intact bags will be permitted for export to Australia. Fruit for export to Australia is not to be mixed or stored with fruit for the domestic market. No fallen fruit is to be harvested for export.

## Item 6. Preharvest inspection and testing

Joint inspection of orchards by NPQS and the AQIS inspector before harvest for presence of quarantine pests must ensure that field control measures are efficacious. The inspection must also ensure that bags are intact, and that packing houses have an appropriate level of hygiene. The AQIS inspector must check inspection and sampling facilities, results of detection surveys, petal tests, flower cluster inspection, fruit fly trap records for the current season and traps if appropriate, and will determine the need to change the intensity of inspection at preclearance as necessary.

An AQIS consultant plant pathologist will also visit in the first year of trade to conduct a survey for pests and diseases at pre-harvest, with an emphasis on fire blight and fire blight-like diseases, and to audit annual disease survey data.

## Latent disease testing

NPQS, or nominee, will initiate latency tests, or equivalent measures, to test for the presence of latent diseases. These tests must be conducted in the following manner:

1) Randomly select 10 export quality Korean pear fruit at harvest from each export orchard. Place the fruit on a raised platform in a clean container (perspex or glass) and cover with a lid. Label each container with the registered orchard number. The identity and security of each container must be maintained until the conclusion of the experiment.

2) Randomly select an appropriate number of fruit which are not bagged to be used as controls. This fruit is incubated in the same manner.

3) Add water to the container to maintain high humidity. Ensure that fruit is not in direct contact with water. Place the containers in an incubator or an air-conditioned room at  $25\pm2^{\circ}$ C for 21 days.

4) Inspect fruit during the incubation period for disease symptoms and record the number of fruit infected and the export orchard number. Isolate the pathogen(s) from fruit showing disease symptoms and confirm the identity.

Results of latency tests should be forwarded to AQIS as soon as possible.

## Item 7. Preclearance inspection or equivalent measures

All packing houses must be registered by NPQS. Only fruit that meets the conditions, set out in items 1-6, must be delivered to the packing houses and must be identified by their registered orchard number. The packing area must be well lit. Bags must be removed in the packing house away from the packing line. During the Korean pear packing period for Australia, no fruit for the domestic market is to be delivered to registered packing houses.

The fruit must be sampled in accordance with the sampling plan (600 fruit per 'lot' containing >1000 fruit; 450 for 1000 fruit or less). The AQIS preclearance inspector will ensure that only mature, unblemished fruit will be selected for export and that the inspection procedures result in fruit free from live pests and diseases of quarantine concern to Australia, leaves, twigs and soil. AQIS and/or NPQS may further examine culled fruit for pests. Culled fruit must be removed from the packing house at the end of each day. Action must be taken on all quarantine pests if



detected, all pests detected must be identified to species level by NPQS technical specialists or their nominated agents, and this information forwarded to AQIS. Duplicate specimens of detected pests must be given to the AQIS preclearance inspector at the time of preclearance. Exports must not be permitted until the identification is completed and information sent to AQIS for approval.

An inspection 'lot' is all pear fruit harvested and packed for export to Australia each day by each orchard or as otherwise agreed by AQIS and NPQS. If any pests or diseases are detected from List 1. Quarantine Pests with a High Risk Potential for Australia, Final IRA, Section 8, any other fruit from that 'lot' must be withdrawn from further inspection. If an inspection 'lot' is rejected due to quarantine pests or diseases with a low or moderate risk potential for Australia (Final IRA, Section 7. Pests Associated with Korean Pear in Korea - Table 1), fruit from that registered orchard will be removed from the 'lot', and the balance of the consignment reinspected in accordance with the sampling plan. Fruit from this rejected 'lot' may be reconditioned and reinspected. A registered orchard which has one rejection will be permitted to submit further 'lots' for the season but if a second rejection occurs that orchard must be withdrawn from the Australian program.

NPQS must use new cardboard boxes/cartons. Packing material must be synthetic or processed if of plant origin. No unprocessed packing material of plant origin such as straw is to be used. Fruit must be secured using one of the following methods: 1) packed and directly transferred into a shipping container, which must be sealed with a NPQS seal and not opened until the container reaches its destination, or 2) packed into cartons and the pallet of cartons must be shrink wrapped in plastic, or 3) packed into cartons with screened ventilation holes, the screening mesh size must not exceed 1.6mm.

All cartons must be marked "For Australia", labelled with 'lot' number, orchard registration numbers, packing house number and date. Alternatively, for palletised "integral" consignments which have been strapped and secured, the information marked on the cartons must be provided in a pallet card. AQIS-inspected and cleared fruit must be stored under security and segregated from all other fruit in a cold store maintained at 1-3°C until loaded into refrigerated containers.

NPQS must ensure that records are properly kept to facilitate auditing of fruit during or after storage and that container doors are sealed after loading.

# **Item 8.** Phytosanitary certification<sup>5</sup>

Upon completion of fruit sampling and inspection, a Master International Phytosanitary Certificate (IPC) is to be issued by NPQS for each 'lot', bearing the appropriate 'lot' numbers, orchard registration numbers, packing house number, number of cartons per 'lot' and date. This document must be jointly signed and dated by the NPQS and the AQIS preclearance inspector during preclearance. The IPC is to bear the additional declaration "Produced and inspected under the Korean pear arrangement between NPQS and AQIS".

After the AQIS inspector leaves:

- For each shipment a new IPC, specifying the 'lots' covered by it, cartons per 'lot' and the container and seal number must be issued by NPQS.

- Attached to this IPC must be a copy of the Master IPC.

<sup>&</sup>lt;sup>5</sup> Use of phytosanitary procedures leading to the issue of an International Phytosanitary Certificate (FAO,1997a)

## Item 9. Verification of consignment in Australia

AQIS reserves the right to examine relevant certification and seals at the port of arrival into Australia. If the phytosanitary certification does not conform or the seals on the containers are damaged, AQIS reserves the right to have the Korean pear fruit returned to Korea, re-exported, or ordered to be destroyed. AQIS must inform NPQS of action including any intention to suspend importation.

## Item 1. Visits

An AQIS inspector must visit Korea in each year of trade for preclearance inspection, both in the field and packing house. Costs for the AQIS inspector to monitor the implementation of importation requirements, surveys and/or preclearance inspection must be paid by the Korean side.

An AQIS consultant plant pathologist will visit the export areas in the first year of trade at preharvest to conduct a survey for pests and diseases, audit annual disease survey data and initiate latency tests. AQIS reserves the right for its officer to visit Korea to conduct field surveys and undertake audits in subsequent years. Costs for these visits will be met by AQIS.

## Item 1. Review of requirements

These phytosanitary requirements will be reviewed at the end of the first season of export of fresh Korean pear fruit to Australia.



# 7. PESTS ASSOCIATED WITH KOREAN PEAR IN KOREA

## Table 1. Risk Potential from Pests Associated with Korean Pear in Korea

The species listed in the following table were identified during the risk analysis (AQIS, 1997a) as pests and diseases associated with Korean pear in Korea. The distribution, quarantine status, assessment of risk potential and management options is shown.

Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
ARTHROPODS						
Acrobasis tokiella	apple leaf casebearer	yes	no	Quarantine	no	
Acronicta intermedia (=Triaena intermedia)	apple dagger moth	yes	no	Quarantine	yes (low)	inspection
Acronicta major	large dagger moth	yes	no	Quarantine	no	
Actias artemis	large greenish silk moth, longtailed silk moth (in Japan)	yes	no	Quarantine	no	
Adoretus tenuimaculatus	brown chafer, flower beetle	yes	no	Quarantine	no	
Adoxophyes orana Adoxophyes sp.	summer fruit tortrix, smaller tea tortrix	yes	no	Quarantine	yes (high)	inspection and management <sup>8</sup>
Adris tyrannus amurensis	akebia leaf-like moth	yes	no	Quarantine	yes (low)	inspection
Agelastica coerulea	alder leaf beetle	yes	no	Quarantine	no	
Agrypnus binodulus	wireworm	yes	no	Quarantine	no	
Aleurocanthus spiniferus	spiny whitefly	yes	yes	Non Quarantine		
Amata fortunei	pear amatid	yes	no	Quarantine	no	
Amphipyra pyramidea	striped black moth	yes	no	Quarantine	yes (low)	inspection
Ancyclis selenana	tortricid	yes	no	Quarantine	yes? (low)	inspection
Anomala albopilosa	green chafer	yes	no	Quarantine	no	
Anomala cuprea	cupreous chafer	yes	no	Quarantine	no	
Anomala daimiana	cherry chafer	yes	no	Quarantine	no	
Anomala geniculata	smaller cherry chafer	yes	no	Quarantine	no	
Anoplophora malasiaca	whitespotted longicorn	yes	no	Quarantine	no	
Anthonomus pomorum	apple blossom weevil	yes	no	Quarantine	no	

<sup>&</sup>lt;sup>6</sup> Risk potential was determined from the risk analysis (AQIS, 1997a). The rating of low, medium or high was assigned on the basis of assessment of both the entry potential and the potential economic impact of entry of the organism.

<sup>&</sup>lt;sup>8</sup> The management options could include a combination of the following: registration of export orchards, pest surveillance, pest management programs, pre-harvest inspection by AQIS consultant plant pathologist, area freedom, and latent infection tests.



<sup>&</sup>lt;sup>7</sup> Pests and diseases with low and medium ratings are addressed by routine inspection procedures. Pests and diseases with a high rating cannot be addressed by inspection alone because of their biological properties (including pathogenicity, extent of host range, potential impact and difficulty of detection). These species are listed in List 1-Quarantine Pests with a High Risk Potential for Australia (see Section 8). The risk posed by these pests and diseases is reduced to negligibly low levels with a combination of inspection and management strategies which are outlined in other parts of this document.

Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Aphanostigma iakusuiense	pear phylloxera	yes	no	Quarantine	yes (high)	inspection and management
Aphis gossypii	cotton aphid	yes	yes	Non Quarantine		
Aphis spiraecola (= A. citricola)	apple aphid	yes	yes	Non Quarantine		
Aphrophora intermedia	common spittlebug	yes	no	Quarantine	no	
Apocheima juglansiaria	mulberry spinerlooper	yes	no	Quarantine	no	
Aporia crataegi	blackveined white butterfly	yes	no	Quarantine	no	
Apriona germari	mulberry longhorn beetle	yes	no	Quarantine	no	
Arboridia apicalis	grape leafhopper	yes	no	Quarantine	no	
Arboridia suzuki	Suzuki leafhopper	yes	no	Quarantine	no	
Archips asiaticus		yes	no	Quarantine	yes (low)	inspection
Archips breviplicanus	Asiatic leafroller	yes	no	Quarantine	yes (medium)	inspection
Archips crataeganus	mulberry tortrix	yes	no	Quarantine	yes? (low)	inspection
Archips fuscocupreanus	apple tortrix	yes	no	Quarantine	yes (medium)	inspection
Archips ingentanus	larger apple tortrix	yes	no	Quarantine	yes? (low)	inspection
Archips nigricaudanus		yes	no	Quarantine	yes? (low)	inspection
Archips xylosteanus	variegated golden tortrix	yes	no	Quarantine	yes? (low)	inspection
Arcuate corella	ramie caterpillar, China grass banded caterpillar	yes	no	Quarantine	yes? (low)	inspection
Arge mali	apple argid sawfly	yes	no	Quarantine	no	
Argyresthia conjugella	apple fruit moth, apple fruit miner	yes	no	Quarantine	yes (high)	inspection and management
Aulacaspis rosae	rose scale	yes	yes	Non Quarantine		
Aulacophora femoralis	cucurbit leaf beetle	yes	no	Quarantine	yes (low)	inspection
Austrapoda dentata		yes	no	Quarantine	no	
Bacchisa fortunei	pear borer	yes	no	Quarantine	no	
Bambalina sp.	mulberry bagworm?	yes	no	Quarantine	yes? (low)	inspection
Basilepta fulvipes	golden-green minute leaf beetle	yes	no	Quarantine	no	
Biston robustus	giant geometer, plum cankerworm	yes	no	Quarantine	no	
Blastodacna pyrigalla	pear fruit borer	yes	no	Quarantine	no	
Bothrogonia japonica	black-tipped leafhopper	yes	no	Quarantine	no	
Brachycaudus helichrysi	leafcurl plum aphid	yes	yes	Non Quarantine		
Bruchus pisorum	pea weevil	yes	yes (but under official control in Tasmania)	Quarantine	no	
Bryobia praetiosa	clover mite	yes	yes	Non Quarantine		
Bucculatrix pyrivorella	pear leafminer	yes	no	Quarantine	no	
Cacosylla jukyungi (= Psylla jukyungi)	psyllid	yes	no	Quarantine	yes? (low)	inspection
Cacosylla pyricola (= Psylla pyricola )	pear psylla, pear sucker	yes	no	Quarantine	yes? (low)	inspection



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Cacosylla pyrisuga (= Psylla pyrisuga)	larger pear sucker	yes	no	Quarantine	yes? (low)	inspection
Caligula japonica (= Dictyoploca japonica)	camphor silk moth, giant silk moth	yes	no	Quarantine	no	
Caliroa matsumotonis	peach slug sawfly	yes	no	Quarantine	no	
Caliroa oishii	Oishi sawfly	yes	no	Quarantine	no	
Calliteara pudibunda	yellow tussock moth, hop dog, redtail moth	yes	no	Quarantine	no	
Callosobruchus chinensis	cowpea weevil, azuki bean weevil	yes	no	Quarantine	no	
Calyptra lata	larger oraesia	yes	no	Quarantine	yes (low)	inspection
Calyptra thalictri	fruit calpe, fruit piercing moth	yes	no	Quarantine	yes (low)	inspection
Camponotus japonicus	black carpenter ant	yes	no	Quarantine	no	
Carpophilus chalybeus	black flower beetle	yes	no	Quarantine	yes (high)	inspection
Carposina sasakii	small peach fruit borer, peach fruit moth	yes	no	Quarantine	yes (high)	inspection and management
Catocala agitatrix	small yellow- hindwinged catocala	yes	no	Quarantine	yes? (low)	inspection
Catocala fulminea	ring-marked yellow- hindwinged noctuid	yes	no	Quarantine	yes? (low)	inspection
Celastrina argiolus	holly blue butterfly	yes	no	Quarantine	yes (low)	inspection
<i>Ceroplastes japonicus</i> (= <i>Cerostegia japonicus</i> )	Japanese wax scale, tortoise wax scale	yes	no	Quarantine	no	
Ceroplastes pseudoceriferus		yes	no	Quarantine	no	
Ceroplastes rubens	pink wax scale	yes	yes	Non Quarantine		
Chrysobothris succedanea	flat-headed borer, six-spotted buprestid	yes	no	Quarantine	no	
Cicadella viridis	green leafhopper	yes	no	Quarantine	no	
Cifuna locuples	bean tussock moth	yes	no	Quarantine	no	
Cixius nervosus	banded rhombic planthopper	yes	no	Quarantine	no	
Cleoporus variabilis	variable leaf beetle	yes	no	Quarantine	no	
Clostera anachoreta	reddish-tipped prominent	yes	no	Quarantine	no	
Clostera anatomosis	black-backed prominent, poplar prominent	yes	no	Quarantine	no	
Coccus hesperidum	soft brown scale	yes	yes	Non Quarantine		
Coleophora ringoniella	apple pistol casebearer	yes	no	Quarantine	no	
<b>Conobathra bifidella</b> (= Melitene bifidella)	pear leafroller pyralid	yes	no	Quarantine	yes? (low)	inspection



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
<b>Conogethes punctiferalis</b> (=Dichocrosis punctiferalis)	yellow peach moth	yes	yes	Non Quarantine		
Cosmia exigua	maple cutworm	yes	no	Quarantine	no	
Cossus vicarius	Oriental carpenter moth, goat moth	yes	no	Quarantine	no	
Crisicoccus matsumotoi	Matsumoto mealybug	yes	no	Quarantine	yes (only recorded from <i>Broussetia</i> ) in Korea, intercepted on pear from Japan)	inspection
Cryptocephalus amiculus	leaf beetle	yes	no	Quarantine	no	
Cryptotympana dubia	Korean blackish cicada	yes	no	Quarantine	no	
Cystidia couaggaria	plum cankerworm, ume cankerworm	yes	no	Quarantine	no	
Cystidia stratonice	dragonfly-shaped geometrid	yes	no	Quarantine	no	
Diplolepis mitsukuri	gall wasp	yes	no	Quarantine	no	
Drosicha corpulenta	giant mealybug	yes	no	Quarantine	no	
Dysmicoccus wistariae	pear mealybug, far eastern mealybug	yes	no	Quarantine	yes (medium)	inspection
Ectatorhinus adamsi	Japan laquer tree bud weevil	yes	no	Quarantine	no	
Ectinohoplia rufipes	scarab	yes	no	Quarantine	yes? (low)	inspection
Ectomyelois pyrivorella (=Numonia pirivorella)	pear fruit moth	yes	no	Quarantine	yes (high)	inspection and management
Empoasca vitis	small green leafhopper	yes	no	Quarantine	no	
Endoclyta excrescens	swift moth	yes	no	Quarantine	no	
Epitrimerus pyri	pear rust mite, pear leaf blister mite	yes	yes (of very limited distribution - reported from one property in Tasmania)	Non Quarantine		
Eriosoma lanigerum	woolly aphid	yes	yes	Non Quarantine		
<b>Eudocima fullonia</b> (= Othreis fullonia)	smaller akebia leaf-like moth	yes	yes	Non Quarantine		
Eulecanium kunoensis (= Lecanium kunoensis)	plum globose scale, globular peach scale	yes	no	Quarantine	no	
Eumeta minuscula	tea bagworm	yes	no	Quarantine	yes? (low)	inspection
Euproctis flava (= E. subflava)	oriental tussock moth	yes	no	Quarantine	no	
Euproctis similis	browntail moth, yellow-tail moth (in Europe)	yes	no	Quarantine	no	
Eurhodope hollandella		yes	no	Quarantine	yes? (medium)	inspection
Exosoma flaviventris	yellow-belly small leaf beetle	yes	no	Quarantine	no	
Fleutiauxia armata	mulberry leaf beetle	yes	no	Quarantine	no	



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Gastropacha quercifolia	apple lasiocampid, lappet moth	yes	no	Quarantine	yes (medium)	inspection
Gastroserica similis	brown velvet chafer	yes	no	Quarantine	yes (low)	inspection
Geisha distinctissima	green flattid, green broad- winged planthopper	yes	no	Quarantine	no	
Geometra papilionaria	larger white- banded green geometrid	yes	no	Quarantine	no	
Grapholita molesta (= Cydia molesta)	Oriental fruit moth	yes	yes (under official control in WA)	Quarantine	yes	inspection and management
Graptopsaltria nigrofuscata	large brown cicada	yes	no	Quarantine	no	
Halyomorpha halys (= Halyomorpha mista)	yellow-brown stink bug, brown marmorated stink bug	yes	no	Quarantine	yes (medium)	inspection
Hedya dimidiana	white spotted eucosmid	yes	no	Quarantine	no	
Hemiberlesia lataniae	Latania scale	yes	yes	Non Quarantine		
Heterocordylus flavipes	apple leaf bug	yes	no	Quarantine	no	
Holochlora japonica	Japanese broadwinged katydid, fruit-tree katydid	yes	no	Quarantine	yes (medium)	inspection
Holotrichia diomphalia	black chafer	yes	no	Quarantine	yes (low)	inspection
Holotrichia morosa	larger black chafer	yes	no	Quarantine	yes (low)	inspection
Holotrichia titanis	scarab	yes	no	Quarantine	yes (low)	inspection
Homalogonia obtusa	four-spotted stink bug	yes	no	Quarantine	yes (medium)	inspection
Hoplocampa coreana	Korean pear fruit sawfly	yes	no	Quarantine	yes (high)	inspection
Hoshinoa longicellana	common apple leafroller	yes	no	Quarantine	yes (low)	inspection
Hyalopterus pruni	mealy plum aphid	yes	yes	Non Quarantine		
Hyboma strigosa	cherry dagger moth	yes	no	Quarantine	no	
Hyphantria cunea	fall webworm	yes	no	Quarantine	no	
Hypomecis roboraria	three-serrate- striped geometrid	yes	no	Quarantine	no	
Icerya purchasi	cottony cushion scale	yes	yes	Non Quarantine		
Illiberis nigra	prunus bud moth	yes	no	Quarantine	no	
Illiberis pruni	pear leaf worm, pear spotted caterpillar	yes	no	Quarantine	no	
Jankowskia fuscaria	tea geometrid	yes	no	Quarantine	no	
Janus piri	pear stem sawfly	yes	no	Quarantine	no	
Lagoptera juno	rose of sharon leaf-like moth, fruit-piercing moth	yes	no	Quarantine	yes (low)	inspection



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Ledra auditura	auricled leafhopper	yes	no	Quarantine	no	meusure
Leguminivora glycinivorella	soybean podborer	yes	no	Quarantine	yes (low)	inspection
Lepidosaphes conchiformioides	pear oystershell scale	yes	no	Quarantine	yes (high)	inspection
Lepidosaphes tubulorum	dark oystershell scale	yes	no	Quarantine	yes (medium)	inspection
Lepidosaphes ulmi	apple mussel scale	yes	yes	Non Quarantine		
Lopholeucaspis japonica	pear white scale, Japanese baton- shaped scale	yes	no	Quarantine	yes (medium)	inspection
Lymantria dispar	Asian gypsy moth	yes	no	Quarantine	no	
Lymantria mathura	pink gypsy moth, oak tussock moth	yes	no	Quarantine	no	
Lyonetia clerkella	apple leafminer, peach leafminer	yes	no	Quarantine	no	
Lyonetia prunifoliella malinella	apple lyonetid	yes	no	Quarantine	no	
Lypesthes ater	apple frosted leaf beetle	yes	no	Quarantine	no	
Mahasena aurea	nitobe bagworm	yes	no	Quarantine	yes (medium)	inspection
Malacosoma neustria	tent caterpillar, heaven tent caterpillar (in China)	yes	no	Quarantine	no	
Maladera japonica	velvety chafer	yes	no	Quarantine	no	
Maladera orientalis	smaller velvety chafer	yes	no	Quarantine	no	
Mamestra brassicae	cabbage moth	yes	no	Quarantine	no	
Marumba gaschkewitschii	peach hornworm	yes	no	Quarantine	no	
Megachile sasakiella	Sasaki leafcutting bee	yes	no	Quarantine	no	
Megachile sculpturalis	large leafcutting bee	yes	no	Quarantine	no	
Melanaphis siphonellus	smaller pear aphid	yes	no	Quarantine	no	
Melanotus legatus	pectinate-horned click beetle	yes	no	Quarantine	no	
Mesosa myops	sesame-spotted longicorn beetle	yes	no	Quarantine	no	
Microleon longipalpis	long-palpi cochlid	yes	no	Quarantine	no	
Mimela fusania	flower beetle	yes	no	Quarantine	no	
Monema flavescens	oriental moth	yes	no	Quarantine	no	
Myzus persicae	green peach aphid	yes	yes	Non   Quarantine		
Naratettix zonatus	banded leathopper	yes	no	Quarantine	no	· · · ·
Nephopteryx bicolorella	pear red-striped pyralid	yes	no	Quarantine	yes? (medium)	inspection
Nezara antennata	green stink bug	yes	no	Quarantine	yes (medium)	inspection
Nezara viridula	green vegetable bug	yes	yes	Non Quarantine		
Nippolachnus piri	pear green aphid	yes	no	Quarantine	no	
Nipponovalgus	flattened flower	yes	no	Quarantine	no	
Nunsarha marginalla	apple black	VAS	<b>n</b> 0	Quarantina	<b>n</b> 0	
(= Oberea marginella)	margined longicorn	yes	110	Quarantine	IIO	
Oberea inclusa	apple longicorn	yes	no	Quarantine	no	



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Ochropleura praecox	greenish narrow- winged noctuid	yes	no	Quarantine	no	meusure
Odonestis pruni	apple caterpillar	yes	no	Quarantine	no	
Oraesia emarginata	smaller oraesia, fruit-piercing moth	yes	no	Quarantine	yes (low)	inspection
Oraesia excavata	reddish oraesia, fruit-piercing moth	yes	no	Quarantine	yes (low)	inspection
<b>Orgyia antiqua</b> (= O. recens)	red-spotted tussock moth	yes	no	Quarantine	yes (medium)	inspection
Orgyia thyellina	Japanese tussock moth, white- spotted tussock moth	yes	no	Quarantine	yes (medium)	inspection
Orthosia carnipennis	cherry leafworm	yes	no	Quarantine	yes (low)	inspection
Oxycetonia jucunda	citrus flower chafer, smaller green flower chafer	yes	no	Quarantine	no	
Paleocimbex carinulata	pear cimbicid sawfly	yes	no	Quarantine	no	
Pandemis cerasana (= P. ribeana)	cherry brown tortrix	yes	no	Quarantine	yes (low)	inspection
Pandemis dumetana	plum leafroller	yes	no	Quarantine	yes? (low)	inspection
Pandemis heparana	fruit tree tortrix	yes	no	Quarantine	yes (medium)	inspection
Pangrapta obscurata	apple blunt-tipped moth	yes	no	Quarantine	no	
Panonychus citri	citrus red mite	yes	yes	Non Quarantine		
Panonychus ulmi	European red mite	yes	yes (except for WA)	Quarantine	yes (high)	inspection and management
Parasa consocia (= Latoia consocia)	green urticating caterpillar, green cochlid	yes	no	Quarantine	no	
Parasa sinica (= Latoia sinica)	Chinese cochlid	yes	no	Quarantine	no	
Parasaissetia nigra	nigra scale	yes	yes	Non Quarantine		
Parlatoria pergandii	black parlatoria scale	yes	yes	Non Quarantine		
Parlatoria proteus	orchid parlatoria scale	yes	yes	Non Quarantine		
Parlatoria theae	tea black scale	yes	no	Quarantine	yes (medium)	inspection
Paropsides duodecimpustulata	pear leaf beetle	yes	no	Quarantine	no	
<b>Parthenolecanium glandi</b> (= Eulecanium glandi)	grand lecanium	yes	no	Quarantine	no	
Phalera assimilis	quercus caterpillar, yellow-tipped prominent	yes	no	Quarantine	no	
Phalera flavescens	cherry caterpillar, black-marked prominent	yes	no	Quarantine	no	
Phenacoccus aceris	apple mealybug, maple mealybug	yes	no	Quarantine	yes (medium)	inspection



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Phorodon humuli	hop aphid,	yes	no	Quarantine	no	incusure
japonensis	damson-hop	-		-		
	aphid, green hop aphid					
Phthonesema tendinosaria	apple horned looper	yes	no	Quarantine	no	
Phyllodesma japonica	smaller lasiocampid	yes	no	Quarantine	yes? (low)	inspection
Phyllonorycter ringoniella	apple leafminer	yes	no	Quarantine	no	
Phyllonorycter ulmi		yes	no	Quarantine	no	
Planococcus citri	citrus mealybug	yes	yes	Non Quarantine		
Planococcus kraunhiae	Japanese mealybug	yes	no	Quarantine	yes (high)	inspection and management
Platypleura kaempferi	Kaempfer cicada	yes	no	Quarantine	no	
Plautia stali	brown-winged green bug, brown- winged stink bug, green stink bug	yes	no	Quarantine	yes (medium)	inspection
Polistes snelleni	yellow long- legged wasp	yes	no	Quarantine	no	
Popillia japonica	Japanese beetle	yes	no	Quarantine	no	
Prociphilus kuwanai	Kuwana pear aphid	yes	no	Quarantine	no	
Pseudaonidia duplex	camphor scale	yes	no	Quarantine	yes (high)	inspection
Pseudaulacaspis pentagona	peach white scale	yes	yes	Non Quarantine		
Pseudococcus comstocki	Comstock mealybug	yes	no	Quarantine	yes (high)	inspection and management
Ptycholoma lecheana	persimmon leafroller	yes	no	Quarantine	yes? (low)	inspection
<b>Ptycholomoides imitator</b> (= Ptycholoma <b>imitator</b> )	network-marked leafroller (in Japan)	yes	no	Quarantine	yes? (low)	inspection
<b>Pulvinaria horii</b> (= Lecanium horii)	Japanese maple cottony scale, cottony maple scale	yes	no	Quarantine	no	
Purpuricenus petasifer	black-spotted red longicorn	yes	no	Quarantine	no	
Purpuricenus temminckii	red longicorn beetle	yes	no	Quarantine	no	
Quadraspidiotus perniciosus (= Comstockaspis perniciosus)	San Jose scale	yes	yes	Non Quarantine		
Rhabdiopteryx nohirae	short-tailed stonefly	yes	no	Quarantine	yes (medium)	inspection
Rhagades pruni	bluish zygaenid	yes	no	Quarantine	yes? (low)	inspection
Rhopalosiphum padi	wheat aphid, bird cherry aphid	yes	yes	Non Quarantine		
Rhopobota unipunctana (= Rhopobota naevana) Rhynchites fovienennis	blackheaded fireworm, holly tortrix, holly leaf tier, ume leafroller Korean pear	yes	no	Quarantine	no ves (high)	inspection and
ingnennes joriepennis	weevil	y 03	10		yes (mgn)	management



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Rhynchites heros	peach curculio	yes	no	Quarantine	yes (high)	inspection and management
Ricania japonica	planthopper	yes	no	Quarantine	no	-
Sappaphis piri	early pear bud aphid	yes	no	Quarantine	no	
Sappaphis piricola	pear yellow aphid	yes	no	Quarantine	no	
Scepticus insularis	striped gourd- shaped weevil	yes	no	Quarantine	no	
Scintillatrix djingischeni	yellow-margined buprestid	yes	no	Quarantine	no	
Selenia tetralunaria	purplish looper moth	yes	no	Quarantine	no	
Serrodes campana	fruit piercing moth	yes	no	Quarantine	yes (low)	inspection
Sipalinus gigas	large weevil	yes	no	Quarantine	no	
Sparganothis pilleriana	grape leafroller, long-palpi tortrix	yes	no	Quarantine	yes (low)	inspection
Spheniscosomus restrictus	thick-horned click beetle	yes	no	Quarantine	no	
Spilonota lechriaspis	apple fruit licker	yes	no	Quarantine	yes? (low)	inspection
Spilonota ocellana	eyespotted bud moth	yes	no	Quarantine	yes (medium)	inspection
Spilosoma imparilis (= Spilarctia imparilis)	mulberry tiger moth	yes	no	Quarantine	no	
<b>Spilosoma lubricipeda</b> (= Spilosoma menthastri)	yellow bellowbelly black-dotted arctiid	yes	no	Quarantine	no	
Spilosoma subcarneum (= Spilarctea subcarnea)	white tiger moth	yes	no	Quarantine	no	
Spulerina astaurota	pear barkminer	yes	no	Quarantine	yes (high)	inspection and management
Stathmopoda masinissa	persimmon fruit moth	yes	no	Quarantine	yes (medium) (pear recorded as a host in literature but not supported by NPQS)	inspection
Stauropus fagi	Japanese prominent	yes	no	Quarantine	no	
Stephanitis nashi	pear lace bug	yes	no	Quarantine	no	
Stroggylocephalus agrestis	flattened rice leafhopper	yes	no	Quarantine	no	
Synanthedon hector	cherry tree borer	yes	no	Quarantine	no	
Synanthedon tenuis	smaller clearwing moth	yes	no	Quarantine	no	
Telorta divergens	peach flower worm	yes	no	Quarantine	yes (low)	inspection
Tetranychus kanzawai	tea red spider mite, Kanzawai spider mite	yes	no (records of <i>T.</i> <i>kanzawai</i> from NSW & QLD = doubtful synonymy)	Quarantine	yes (medium)	inspection and management
Tetranychus urticae	two spotted spider mite	yes	yes	Non Quarantine		
Tetranychus viennensis	hawthorn spider mite, sweet cherry spider mite	yes	no	Quarantine	yes (medium)	inspection and management
Tipula aino	rice cranefly	yes	no	Quarantine	no	



Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit (Risk potential <sup>6</sup> )	Risk management measure <sup>7</sup>
Tortrix sinapina	Japanese oak leafroller, network-marked	yes	no	Quarantine	yes? (low)	inspection
Towantang adings	leafroller			Ouerentine		
Toxopiera oainae Urochola lutoovaria	udo aprila	yes	no	Quarantine	no vas (madium)	inspection
Urostylis westwoodi	quercus stink bug, chestnut-leaved oak bug	yes	no	Quarantine	yes (medium)	inspection
Vespa crabro	giant hornet	yes	no	Quarantine	no	
Vespa mandarinia		yes	no	Quarantine	no	
Vespa xanthoptera	yellow hornet	yes	no	Quarantine	no	
Viminia rumicis	sorrel cutworm	yes	no	Quarantine	yes? (low)	inspection
Wilemanus bidentatus	black-spotted silvery prominent	yes	no	Quarantine	no	
Yponomeuta malinellus	apple ermine moth, common small ermine moth	yes	no	Quarantine	no	
Zethenia albonotaria	white-spotted truncate-tipped geometrid	yes	no	Quarantine	no	
Zethenia rufescentaria	three-lined truncate-tipped geometrid	yes	no	Quarantine	no	
Zeuzera multistrigata		yes	no	Quarantine	no	
BACTERIA				i		
Agrobacterium tumefaciens	crown gall	yes	yes	Non Quarantine		
Erwinia amylovora	fire blight	previously recorded, not currently considered to be present	detected 1997 in Melbourne Royal Botanic Gardens, considered eradicated 1998	Quarantine	yes (high)	inspection and management
Erwinia pyrifoliae	black stem blight	yes	no	Quarantine	yes (low)	inspection and management
FUNGI	-					-
Alternaria alternata	black spot, Japanese pear black spot, fruit rot	yes	yes	Non Quarantine		
<i>Alternaria gaisen</i> (syn. illegitimate <i>Alternaria</i> <i>kikuchiana</i> )	black spot, Japanese pear black spot, fruit rot	yes	no	Quarantine	yes (high)	inspection and management
Botryosphaeria berengeriana f. sp. piricola (syn. Physalospora piricola, anamorph Macrophoma malorum)	physalospora canker, wart bark, blister canker, apple ring rot	yes	no	Quarantine	yes (high)	inspection and management
Botryosphaeria dothidea	white rot	yes	no	Quarantine	no	
Botrytis cinerea (teleomorph Botryotinia fuckeliana)	gray mould	yes	yes	Non Quarantine		
Colletotrichum gloeosporioides	bitter rot, fruit rot, ripe rot	yes	yes	Non Quarantine		



Final Import Risk Analysis on the Importation of Fresh Fruit of Korean Pea	ar
(Pyrus ussuriensis var. viridis T. Lee) from the Republic of Korea	

Species	Common Name(s)	Present in Korea	Present in Australia	Quarantine pest status	Association with fruit	Risk management
Conictlumium minclum	loof anot			Quanantina	(Kisk potential)	measure
Dim anth a situi	iear spot	yes	110	Quarantine	110	
Diaporine curi	stem end rot	yes	no	Quarantine		· · · 1
Gymnosporangium	Japanese pear rust	yes	no	Quarantine	yes (nign)	inspection and
haraeanum G chinense						management
G koregense G						
spiniferum)						
Gymnosporangium	pear-juniper rust	ves	no	Ouarantine	ves (high)	inspection and
shiraianum	I ST I ST	5			J	management
Macrosporium piricolum	macrosporium leaf spot	yes	no	Quarantine	no	
Monilinia fructigena	brown rot	possibly (shown absence from 1988- 89)	no	Quarantine	yes (high)	inspection and management
Mycosphaerella sentina	leaf spot	yes	no	Quarantine	no	
Nectria galligena	European canker,	possibly	no	Quarantine	yes (high)	inspection and
(anamorph	nectria canker,	(survey data				management
Cylindrocarpon	crotch canker	provided for				
heteronemum)		1996-97)				
Pestalotia sp.	Pestalotia leaf spot	yes	no	Quarantine	no	
Phaeospora nashi	leaf spot	yes	no	Quarantine	no	
Phomopsis fukushii	phomopsis fruit rot, phomopsis canker, die-back	yes	no	Quarantine	yes (low)(rarely affects fruit in storage)	inspection
Phyllactinia pyri	powdery mildew	yes	no	Quarantine	no	
Phyllosticta pyrina	leaf spot, fruit rot	yes	yes	Non Quarantine		
Venturia nashicola	pear scab	yes	no	Quarantine	yes (high)	inspection and management
Venturia pirina	pear scab	yes	yes	Non Quarantine		



# 8. QUARANTINE PESTS WITH HIGH RISK POTENTIAL FOR AUSTRALIA

The following list contains species of concern to Australia with a high entry potential and high potential impact rating. The list has been revised on the basis of information provided by respondents.

# LIST 1. REVISED SUMMARY OF QUARANTINE PESTS WITH HIGH RISK POTENTIAL FOR AUSTRALIA

- 1. Adoxophyes spp. (including Adoxophyes orana (Fischer von Roeslerstamm), tortrix
- 2. Aphanostigma iakusuiense (Kishida), pear phylloxera
- 3. Argyresthia conjugella Zeller, apple fruit moth
- 4. Carposina sasakii Matsumura, peach fruit moth
- 5. Crisicoccus matsumotoi (Siraiwa), Matsumoto mealybug
- 6. *Dysmicoccus wistariae* (Green), pear mealybug
- 7. Ectomyelois pyrivorella (=Numonia pirivorella (Matsumura)), pear fruit moth
- 8. Grapholita molesta (Busck) (=Cydia molesta), Oriental fruit moth
- 9. Lepidosaphes conchiformioides Borchsenius, pear oystershell scale
- 10. Panonychus ulmi (Koch), European red mite
- 11. Phenacoccus aceris (Signoret), apple mealybug
- 12. Planococcus kraunhiae (Kuwana), Japanese mealybug
- 13. Pseudaonidia duplex (Cockerell), camphor scale
- 14. Pseudococcus comstocki (Kuwana), Comstock mealybug
- 15. Rhynchites foviepennis Fairmaire, Korean pear weevil
- 16. Rhynchites heros Roelofs, peach curculio
- 17. Spulerina astaurota (Meyrick), pear barkminer
- 18. Tetranychus viennensis Zacher, hawthorn spider mite
- 19. Tetranychus kanzawai Kishida, tea red spider mite
- 20. Alternaria gaisen Nagano (syn. illegitimate Alternaria kikuchiana Tanaka), black spot
- 21. *Botryosphaeria berengeriana* De Not. f.sp. *piricola* (Nose) Koganezawa & Sakuma (syn. *Physalospora piricola* Nose), physalospora canker
- 22. Erwinia amylovora (Burrill) Winslow et al., fire blight
- 23. Erwinia pyrifoliae Kim et al., black stem blight
- 24. Gymnosporangium asiaticum Miyabe ex Yamada, Japanese pear rust
- 25. Gymnosporangium shiraianum Hara, pear-juniper rust
- 26. Monilinia fructigena Honey, brown rot
- 27. Nectria galligena Bres., European canker
- 28. Venturia nashicola Tanaka & Yamamoto, pear scab



# 9. ISSUES RAISED BY STAKEHOLDERS IN RESPONSE TO AQIS'S DRAFT IRA

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# 9.1 General Issues

## 9.1.1 IRA process

Issue 1: The basis of import risk analysis: is IRA based on risk of entry or risk of establishment?

## AQIS's position:

AQIS conducts IRAs in accordance with the ISPM outlined in the introduction to this document. The *Guidelines for Pest Risk Analysis, ISPM No. 2 FAO* (1996) considers all risks (entry, establishment and spread) in assessing overall phytosanitary risk.

## Issue 2:

Effect on native flora and fauna: no examinations have been made of the impact of these exotic pests on Australian native flora and fauna.

## AQIS's position:

AQIS is satisfied that importation of Korean pear fruit under the specified conditions will present negligible risk to the environment and accordingly that the obligations arising from the Administrative Procedures made under the Environment Protection (Impact of Proposals) Act 1974 have been met. In addition, Environment Australia, Biodiversity Group was consulted in regard to this IRA. That portfolio was supportive of the proposed importation provided, that the proposed phytosanitary conditions were implemented.

# 9.1.2 Equivalence between Korea, China and Japan

## Issue 3:

As a result of the circulation of the three draft IRAs at the same time many comments were received from respondents regarding differences in the conditions imposed for the importation of pome fruit from Korea, China and Japan. These comments specifically addressed issues such as pest surveillance/management requirements, area freedom, disinfestation treatments, and the number and timing of visits by AQIS staff.

# AQIS's position:

The conditions for the importation of pome fruit from Korea, China and Japan are not exactly the same as these countries have differing phytosanitary requirements. These requirements relate to differences in disease history, disease survey results, pest management strategies, and pest occurrence. For this reason AQIS has set requirements for each country after consideration of its phytosanitary status.

# 9.1.3 Risk to Australian industry

# Issue 4:

A number of respondents noted the need for protection of Australia's status as a producer of fruit in a relatively pest and disease free environment. Concerns were raised regarding the wide host range of the listed pests and diseases and the greater risk of establishment this causes; the difficulty of detection; and eradication should pests become established. Rejecting the application for entry of



Korean pear was suggested as a solution. Korea's position on quarantine status and management conditions of Australian produce with similar pests was questioned.

## AQIS's position:

The pests and diseases of quarantine concern identified in the draft IRA require specific management procedures. AQIS believes that the proposed management procedures specified will minimise the risk of introduction of these pests of quarantine concern. The conditions for the importation of Korean pear fruit require NPQS to abide by the agreed management procedures. Similar conditions have been accepted by other countries for importation of Korean pear. Prohibition of importation of Korean pear is not justified by the risk analysis since appropriate management procedures can reduce the risk to negligibly low levels.

# 9.2 Pest Risk Assessment

# 9.2.1 Quarantine pest list

Issue 5:

The moth *Adoxophyes orana* was listed as having a high entry risk potential in Table 1 of the draft IRA but was not included in List 1. Oriental fruit moth (*Grapholita molesta*) was incorrectly classified as a non-quarantine pest. The moth *Numonia pirivorella* should be listed as *Ectomyelois pyrivorella*.

# AQIS's position:

A. orana was inadvertently excluded from the list of pests of high risk of entry into Australia. G. molesta is not present in Western Australia. Western Australia has legislation in place to prevent the introduction of G. molesta into that State on pome fruit. This legislation is recognised by AQIS as effectively addressing the risk of spread of this pest into WA as it constitutes official control. Altering the quarantine status of G. molesta from non-quarantine to quarantine is therefore justified for WA only. In the literature the taxonomic state of the names Numonia pirivorella (Matsumura, 1900) and Ectomyelois pyrivorella (Matsumura, 1899) has been confused. According to Inoue et al. (1982), N. pirivorella is a junior synonym of E. pyrivorella, AQIS has amended List 1 to this effect. The revised List 1 is included in Section 8.

# 9.2.2 Arthropod pest issues

Issue 6 :

The quarantine status of pear barkminer (*Spulerina astaurota*), pear mealybug (*Dysmicoccus wistariae*), Manchurian fruit moth (*Cydia inopinata*) and white fruit moth (*Spilonota albicana*) was queried.

# AQIS's position:

Pear barkminer and pear mealybug are included in List 1 (Section 8 of this report) of the draft IRA, which specifies the quarantine pests with a high risk of entry on pears from Korea. AQIS will require that NPQS conducts, and reports on, surveys during the growing season to detect/monitor arthropod pests of concern. These surveys are to be done concurrently with surveys for diseases.

AQIS accepts that Manchurian fruit moth and white fruit moth are not present in Korea and consequently these species have not been included as quarantine pests in List 1. The species have,



however, been recorded from China, Russia and Japan. The close proximity of Korea to these countries increases the risk of these economically important species being introduced. For this reason AQIS has included these species as targets for inspection, and importation of Korean pear fruit will be suspended if the species are found. AQIS will also require NPQS to inform AQIS if either of these species are introduced into Korea.

## <u>Issue 7 :</u>

Persimmon fruit moth (*Stathmopoda masinissa*): occurs in persimmon and not in pears, and should be removed from the list of quarantine pests with high risk of entry into Australia.

## AQIS's position:

AQIS has reclassified this pest as medium risk.

## 9.2.3 Disease issues

Fire blight (Erwinia amylovora)

## Issue 8 :

Fire blight (*Erwinia amylovora*): several respondents commented on the occurrence of *E. amylovora* in Korea and stated the necessity of implementing a general surveillance program similar to that required in Victoria and South Australia.

## AQIS's position:

Australia requires NPQS to demonstrate area freedom from fire blight. NPQS has provided data from a survey conducted from 1988-89 and 1996-97 to show that production areas are free from fire blight and states that fire blight and its hosts are prohibited under the Plant Quarantine Act. Fire blight has been recorded in Korea (Commonwealth Mycological Institute, 1979; The Korean Society of Plant Protection, 1986). However, the International Mycological Institute distribution map published in 1993 has removed this record on fire blight in the Republic of Korea based on the survey data (1988-1989) published by Korea. Furthermore, van der Zwet (1996) does not include Korea in the present worldwide distribution of fire blight. AQIS requires that export orchards and a sample of non-export orchards be surveyed. AQIS sent an Australian plant pathologist to Korea in September 1998. The plant pathologist surveyed the export areas for disease, including fire blight and fire blight-like organisms, and audited Korea's annual disease survey data. The consultant plant pathologist reported that the export areas were free from diseases of quarantine concern to Australia including fire blight or fire blight-like organisms. NPQS is also required to notify AQIS immediately if fire blight is detected in Korea.

# Black stem blight (Erwinia pyrifoliae)

## Issue 9:

Compromise the AQIS position north of Han River: detection of black stem blight south of the Han River and the resumption of trade outside 15 km quarantine zone (subsequently demonstrated as 'free') might compromise the AQIS position north of Han River.

# AQIS's position:

Black stem blight, according to information provided by NPQS, is confined to five areas north of the Han River (KaPyong, PoCheon, YangPyong, WhaCheon and YangKu). These areas are located in a valley in the vicinity of lakes and rivers surrounded by mountains. Local climatic conditions of



low temperature and high humidity provide ideal conditions for disease development and spread. There are a few infected trees in an isolated area close to the original site of infection north of Han River, which have not been eradicated but are earmarked for eradication in 1999. Therefore, AQIS has specified in its phytosanitary requirements that pear orchards in the north of Han River will not be permitted to export pear fruit to Australia. Nevertheless, in order to monitor new outbreaks in this area AQIS has requested NPQS to submit the results of all surveys conducted at different growth stages.

All orchards in production areas south of Han River are free from this disease, based on surveys carried out by the Agriculture Science and Technology Institute (ASTI), National Horticultural Research Institute (NHRI) and Rural Development Authority (RDA) in Korea from 1995-98. The climatic conditions in production areas south of the river are less favourable for disease development, where flowering occurs earlier as a result of relatively warmer conditions. However, if there is an outbreak of the disease south of Han River, trade will stop immediately until such time that AQIS is satisfied that area freedom requirements in the production areas and the 15 km quarantine zone are met in accordance with relevant International Standards of Phytosanitary Measures (ISPMs).

AQIS will consider an application to source fruit from commercial orchards north of Han River after analysing survey data which supports establishment of area freedom from black stem blight in accordance with relevant international standards.

## Issue 10:

Annual visit by an AQIS inspector: an AQIS inspector must visit production areas and packing houses in Korea annually to verify activities specified by AQIS.

## AQIS's position:

Phytosanitary requirements for the importation of pear fruit specify that an AQIS inspector visits Korea each year of trade for preclearance of fruit. Prior to the visit to Korea, the AQIS inspector is properly briefed, trained in identification of pests and provided with a check list of activities to audit and report to AQIS. During the visit, the AQIS inspector will inspect export orchards before harvest to ascertain the status of quarantine diseases of concern to Australia, check that field control methods are efficacious, verify the data on pest surveys and tests specified by AQIS, check on the hygienic level of packing houses, conduct preclearance inspection of fruit and issuance of phytosanitary certificate prior to export of fruit.

## Issue 11:

Lack of scientific data: AQIS must adopt a cautious approach to the importation of pear fruit until more technical information is available on the pathogen and the disease (e.g. methods of disease detection, symptom expression, spread, pathogenicity and epidemiology, particularly the role of mature fruit as a vector of the disease).

#### AQIS's position:

The new *Erwinia* sp., affecting Asian pears was detected in June 1995 by scientists of the Rural Development Authority (RDA) and Agricultural Science Technology Institute (ASTI). The scientists at the Hallym University in Korea worked in close collaboration with a group of scientists in the Max-Planck Institute in Germany to further study this pathogen. They have characterised the new species and developed methods for its detection. The disease exhibits necrotic symptoms on leaves, petioles, tips of shoots and branches, flowers and young fruits. Korean scientists claim that



mature fruit is not affected by the disease. The spread of the disease is presumed to be through splash dispersal. The pathogen is known to overwinter in flowers and leaf buds and factors that favour disease development are high humidity and low temperature. There are no reports of insects associated with disease spread. This pathogen is reported to preferentially cause necrotic symptoms on pear seedlings and expresses weak symptoms on apple seedlings. The spread of the disease is limited to areas in close proximity to the original site of infection.

The disease is not known to occur in production areas south of the Han River and there are quarantine restrictions for the movement of plant material from the quarantine area. To establish area freedom in a manner consistent with the ISPMs on pest free status, NPQS is required to meet a number of ongoing phytosanitary requirements specified by AQIS. AQIS is confident that the risk of this pathogen being associated with the fruit sourced from export orchards is minimal. The phytosanitary conditions specified by AQIS for export of Korean pear fruit will be audited by the AQIS inspector during the preclearance visit, and provide adequate quarantine security to Australia against the accidental introduction of black stem blight disease with imported Korean pear fruit.

## Issue 12:

Information on pest status: failure by NPQS to inform AQIS of changes in the pest status in Korea, particularly diseases of quarantine concern (e.g. black stem blight).

## AQIS's position:

Australia became aware of the occurrence of the new disease in Korea when scientific information on it was presented at the 8th International Workshop on fire blight held in Turkey in October 1998. NPQS was unaware that this disease was present in Korea until AQIS brought it to their attention. Apparently NPQS was not advised of the new disease outbreak by the agencies involved in the detection and surveillance of the disease in Korea.

Any concerns regarding the implementation of phytosanitary requirements specified by AQIS will be addressed by random surveys of export orchards, auditing the results of surveys and specific tests and preclearance inspection procedures during the visit of the AQIS inspector.

## Issue 13:

Importation of vegetative material: potential introduction of black stem blight via vegetative material from Korea should be minimised.

## AQIS's position:

The risk analysis was completed for the importation of pear fruit, not vegetative material. Imports will be allowed only after NPQS has complied with the phytosanitary requirements specified by AQIS which requires that there be no vegetative material with the fruit. If Australia considers importation of vegetative material for propagation, it will be required to undergo post-entry quarantine at a government post-entry quarantine station in accordance with existing policy for pome fruit propagation material from global sources.

## Issue 14:

Detection of stem blight south of the Han River: AQIS must suspend trade immediately if black stem blight is detected in production areas south of the Han River.

## AQIS's position:

AQIS has specified in its phytosanitary requirements that NPQS must inform AQIS immediately if



there is a confirmed outbreak of *Erwinia* spp., anywhere in Korea on any host. In the event of an outbreak, trade will be suspended immediately pending the outcome of a joint investigation by AQIS and NPQS.

## Issue 15:

Orchard inspection and testing for the disease: AQIS must specify a minimum requirement of two seasons of inspection of production areas and testing for the disease and confirm its absence prior to consideration of importation of Korean pear fruit.

## AQIS's position:

ASTI, NHRI and RDA in Korea have conducted nation-wide general surveillance and specific surveys (detection and delimiting) in pear orchards from 1995-98, specifically targeting black stem blight. This program will continue in 1999. The disease was detected by visual symptoms and confirmed by testing samples of leaf, stem and young fruit showing suspected symptoms using serological and chemical methods developed by the Max-Planck Institute in Germany. These surveys have revealed that the disease is confined to five areas north of the Han River (KaPyong, PoCheon, YangPyong, WhaCheon and YangKu). The surveys will be continued annually and results submitted to AQIS so long as Korea wishes to export pear fruit to Australia. The eradication program which commenced in 1995 has continued until the present and will be intensified from 1999.

An Australian plant pathologist visited all the export orchards in Seong Whan, the area designated by NPQS to export fruit to Australia, to survey for diseases of quarantine concern and initiate latency tests. The plant pathologist did not detect any diseases of quarantine concern to Australia, including fire blight-like diseases. In the first year of export only a limited quantity of fruit, sourced from orchards in Seong Whan area inspected by the plant pathologist, and held in cold storage, would be permitted entry, subject to preclearance inspection by an AQIS inspector. Subsequent imports will occur only after evaluation of the results of surveys specified by AQIS. By the end of the 1999 production season, Korea would have completed four years of nation-wide surveys for detection of quarantine diseases including *Erwinia* spp.

## Issue 16:

Use of streptomycin: AQIS to seek banning of the use of streptomycin in orchards to control black stem blight and check fruit for residues, on arrival.

# AQIS's position:

AQIS will advise NPQS that streptomycin is not an approved chemical for use in pome fruit orchards under Australia's regulations. Further, continuous use of streptomycin can lead to the development of resistant strains of the pathogen. A copy of the final IRA will be circulated to the Australian government agency responsible for monitoring chemical residues. It will take appropriate action if pear fruit imported into Australia is contaminated with streptomycin.

## Issue 17:

Brown rot (*Monilinia fructigena*): why does AQIS require NPQS to carry out specific tests to demonstrate area freedom?

## AQIS's position:

NPQS indicated at the bilateral meeting that brown rot was not present in Korea, and provided data from a survey conducted from 1988-89 and 1996-98 to show that production areas were free from



brown rot. However, brown rot has been recorded in Korea (CAB International Mycological Institute, 1990; The Korean Society of Plant Protection, 1986) and survey data for the period 1990-95 have not been provided. AQIS therefore requires NPQS to demonstrate area freedom for the designated export areas in the first year by conducting petal tests for brown rot in all registered export orchards, and a sample of non-registered orchards if they are adjoining export orchards. Disease latency tests, or equivalent measures, will also be carried out against this disease. AQIS will review conditions for petal testing for brown rot at the end of the first season of export of Korean pear to Australia.

## Issue 18:

Black spot (*Alternaria gaisen*): exemption from petal testing for black spot because of the difficulty of differentiating *A. gaisen* from *A. alternata*.

## AQIS's position:

*A. gaisen* is not present in Australia and hence is a quarantine disease. Symptoms of *A. gaisen* and *A. alternata* are not easily differentiated, however, the species can be distinguished by spore size and by molecular techniques. The quarantine restriction on *A. gaisen* therefore cannot be removed on this basis.

## Issue 19:

Black spot (*Alternaria gaisen*): why does the petal test for black spot (*Alternaria gaisen*) require 10 flowers from 10 trees per orchard for Korean pear, but only 10 flowers from 5 trees per orchard for Chinese Ya pear? How does the sampling procedure support a 0.5% detection level? What is the size of the area freedom zone for black spot?

## AQIS's position:

Although NPQS has provided results of a general survey of black spot carried out from 1988-89 and 1996-98, no other data have been provided. In contrast, China has been providing data for black spot annually for the period 1994-97. AQIS therefore requires more intensive testing from Korea to demonstrate levels of infection. AQIS has set the tolerance for black spot at 0.5% or less, based on tests of petal infection at blossoming. Disease latency tests, or equivalent measures, will also be carried out against this disease. The infection level is calculated as an average value for production areas. Area freedom is not a requirement for black spot.

## <u>Issue 20</u>:

Pear scab (Venturia nashicola): when are orchards sampled for pear scab?

## AQIS's position:

Flower cluster inspection occurs at blossoming, which helps in the early detection of orchards with pear scab infection. Orchards which are infected with pear scab at blossoming will not be permitted to export fruit. AQIS requires orchard freedom for pear scab at blossoming, with survey results to be provided to AQIS before commencement of trade.

## <u>Issue 21</u>:

Japanese pear rust (Gymnosporangium asiaticum) and pear juniper rust (G. shiraianum): It has been suggested that the requirement to remove telial hosts within 2km of export orchards should be removed, because of the absence of viable inoculum at the time of harvest. The protocol should be much more specific about tolerance levels for pear rust.



## AQIS's position:

Fruit may be infected before bagging, therefore the absence of spores at harvest does not remove the possibility of contamination of the produce. As an alternative to removal of telial hosts (*Juniperus chinensis*, *J. procumbens*) of Japanese pear rust and pear-juniper rust, NPQS will ensure that a chemical control program is undertaken to combat the disease in both pear orchards and junipers.

Rust can cause latent infection on fruit. Disease latency tests, or equivalent measures, will also be carried out against this disease. Tolerance levels for either rust are nil. If Japanese pear rust or pear-juniper rust is detected in pear orchards during detection/monitoring surveys or latency tests, fruit from the orchards within 2km of the infected site will not be accepted into Australia.

## Issue 22:

European canker (Nectria galligena): what are the risks associated with this disease?

## AQIS's position:

European canker can cause latent fruit infection and has been recorded on pear in Korea (Commonwealth Mycological Institute, 1985). NPQS has indicated that the disease was deleted in a 1995 revision of the list of plant diseases based on technical data; however, NPQS has not provided complete data to AQIS for evaluation. AQIS therefore requires NPQS to demonstrate area freedom for the disease in the designated export areas by submitting results of recent detection/monitoring survey data and/or carry out follow-up surveys during the current growing season. This disease will also be targeted through disease latency tests, or equivalent measures, carried out from preharvest inspections.

## <u>Issue 23</u>:

Physalospora canker (*Botryosphaeria berengeriana* f.sp. *piricola*): why is there no monitoring for physalospora canker?

## AQIS's position:

Physalospora canker was listed in the draft IRA as a disease of quarantine concern to Australia, therefore NPQS is required to target this disease in their monitoring surveys and take preventive and control measures. Physalospora canker is a disease which mainly affects branches. During winter, early spring, and summer cankered branches are removed therefore inoculum available for fruit infection is considerably reduced. Importation of fruit will not be permitted from export orchards if infection is detected on fruit at preclearance inspection. This disease will also be targeted through disease latency tests, or equivalent measures, carried out from preharvest tests.

#### Issue 24:

*Latent infection on fruit:* where diseases are capable of producing a latent infection which would not be detected at preclearance inspection, entry risk must be regarded as significant. The survey of registered export orchards and surrounding orchards should be undertaken to guarantee freedom from these diseases.

#### AQIS's position:

The phytosanitary measures are designed to minimise the risk of fruit carrying latent infection. Over-mature or over-ripe fruit are not harvested. Spray programs and orchard sanitation, as well as bagging will adequately protect fruit from infection caused by diseases of concern. Any fruit infected before bagging are likely to be removed during thinning. Those that develop disease



symptoms within the bag will not be harvested, or those showing incipient infections are likely to be detected at preclearance inspection.

In accordance with Australian Government policy of managing quarantine risks offshore where possible, AQIS is proposing that NPQS conduct testing, or equivalent measures, of fruit for latent disease infections in Korea prior to the export of fruit to Australia. During the first year of trade the Australian specialist plant pathologist visiting at preharvest will initiate the tests and NPQS will conclude the assessment. The AQIS inspector visiting at preclearance will be given the results. In subsequent years AQIS will consider the latency tests to be NPQS's responsibility. A set of guidelines are included (Section 6, Item 6). This testing, together with preclearance inspection, will replace on-arrival inspection and will further reduce any associated risk of disease entering Australia by conducting these tests in Korea. This ensures that the program is truly a preclearance inspection.

## <u>Issue 25</u>:

Physiological races of diseases: pathogens present in Australia may have limited genetic heterogeneity and this may be important for economic management of the disease within Australia. The risk of introducing pathotypes, biotypes, forms etc., must therefore be part of the risk assessment.

## AQIS's position:

As far as it can be determined, none of the diseases of quarantine concern to Australia which occur in Korea have physiological races. AQIS therefore has no justification for restricting entry of fruit on the assumption that some of the diseases have physiological races. Similarly, no evidence is presented that in Australia the disease population is of limited genetic diversity or that it is static.

## 9.2.4 General pest issues

## <u>Issue 26</u>:

Climatic differences: the effect of climatic differences between Australia and Korea on life-cycles of pests has not been adequately addressed.

## AQIS's position:

Climate is not a reliable parameter to be factored into a risk management strategy as weather conditions can change between years. It is not possible to accurately predict the behaviour of a pest in another environment as this depends on a number of variables, including the climatic conditions. The tolerances of various stages of the pest, if known, also have been considered. AQIS has considered the most favourable conditions for development of the pest and the commensurate pest control activities in the field as part of the IRA. For pests of concern to AQIS the surveillance conducted by NPQS will identify variation in pest levels due to seasonal climatic variation.

## Issue 27:

Classification of pest distribution: in Table 1 of the draft IRA, column 3 appears to be unnecessary. It merely states that all pests listed are present in Korea. It would be more useful and informative if the pests were broadly stratified (+++= very common, very widespread; ++=common, widespread; += less common or common only some years; P=present, but unimportant), although many other systems would also be suitable.

## AQIS's position:

AQIS will consider requiring NPQS and the AQIS inspector and other Australian specialists to report the level of prevalence of pests during preharvest inspection. The information on presence and absence was included in the draft IRA to help non-specialists understand the logical basis for the separation of pests into quarantine and non-quarantine categories. Quarantine decisions are based on *Guidelines for Pest Risk Analysis ISPM No. 2, FAO* (1996) which incorporates entry, establishment and rates of spread in its analysis. The IRA also takes into account presence and prevalence of pests at harvest.

## 9.3 Import Risk Management

## 9.3.1 Orchard registration

#### Issue 28:

Registration of orchards and identification of export fruit: the opportunity appears to exist for NPQS and Korean pear growers to test all orchards and only submit registration for those which have acceptably low levels of fungal diseases.

#### AQIS's position:

NPQS will not be able to selectively eliminate growers because to meet AQIS's requirements for area freedom, NPQS must provide a list of designated export areas, and detection survey data for specified diseases. AQIS will request that NPQS provide the list of registered orchards, their registered numbers and maps as soon as the orchards are registered, and submit petal testing, flower cluster, fruit fly trapping data etc., as soon as the results are available. AQIS will include the requirements for registration stated in Section 6 of this document in the protocol agreement.

## 9.3.2 Field management strategies

#### <u>Issue 29</u>:

Individual pest management strategies: the proposed import conditions are very broad and do not adequately cover specific issues as they relate to individual pests. One respondent requires that individual pests have their own quarantine conditions and requirements.

#### AQIS's position:

Specific control measures are applicable to each of the pests of quarantine concern in List 1 of the draft IRA; however, individual treatment of pests is unnecessary as most management operations are applicable to a broad range of pests. Individual species control proposed in the draft IRA is based on the systems approach for pest management. No substantive data have been presented by stakeholders to indicate that the management options would not reduce populations of any pest of concern to an acceptably low level.

#### Issue 30:

Field sanitation: AQIS was asked to define the requirements for field sanitation. Specific details of pest control programs (equipment, volumes, records, chemicals, timing and weather) were requested to ensure that the Australian and New Zealand Food Authority standards for chemical residues are met.

#### AQIS's position:



NPQS will provide details of chemical control programs to AQIS at the commencement of the season to help determine pest status/management. NPQS will provide a revised copy, if applicable, to the AQIS inspector at the preclearance inspection. A copy of the final IRA will be circulated to the Australian government agency responsible for monitoring chemical residues. It will take appropriate action if pear fruit imported into Australia is contaminated with streptomycin.

## Issue 31:

Bagging: the bagging requirement could be changed from two applications of single layered bags to one application of a double layered bag.

## AQIS's position:

AQIS agrees to the use of a double layered bag to be applied once. AQIS has agreed to this on the condition that stringent pest management programs are used during fruit production, and that only fruit with intact bags are harvested.

## Issue 32:

Bagged fruit in relation to microbial pathogens: it is believed that more stringent monitoring of the orchards is necessary because the fruit may not be covered early enough to prevent spores of pathogens from landing on the fruit.

## AQIS's position:

Fruitlets are exposed to fungicide applications before they are bagged. NPQS advised AQIS that fungicide impregnated bags are used. Only uninfected and apparently healthy fruit is covered by bags. Any fruit which have received inoculum and not succumbed to infection are likely to become infected within the bags and to be rejected at harvest. An AQIS inspector will inspect fruit at the preclearance inspection. AQIS will, however, also require a sample of fruit to be picked before harvest and incubated for a specific period to detect latent infection.

## Issue 33:

Bagging in relation to arthropod pests: several respondents commented on the lack of evidence presented in the draft IRA to support the claim that bagging significantly reduces the incidence of fruit infestation by quarantine pests which have been assessed as having high risk of entry into Australia. The draft IRA document highlights that for some pests bagging will not stop infestation of the fruit. Specific examples used were mites, mealybugs, thrips, pear fruit moth (*Ectomylois pyrivorella*), summer fruit tortrix (*Adoxophyes orana*) and peach fruit moth (*Carposina sasakii*).

## AQIS's position:

Bagging of fruit is undertaken routinely in Korea, Japan and China as a pest management measure. As a result of bagging and chemical controls, certain pests have not been seen on fruit in orchards for a number of years. Bagging has been used as a disease management method for nashi pear imports from Japan into Australia for almost a decade and a very low level of pests and/or diseases have been detected on fruit during preclearance inspections.

## Issue 34:

Documentation and evaluation of pest control programs: the question of who would evaluate the Korean pest control programs was raised. It was suggested that full documentation of implemented programs be available for reference use in the future.

#### AQIS's position:



Proposed guidelines for pest control programs were presented for public consultation in the draft IRA. The final details of the pest control programs are determined during the development of the final IRA and with agreement between Australia and the exporting country, after stakeholder comments on the draft IRA are considered. AQIS Canberra office assesses the programs and must approve them before the requirements are finalised. Documentation of the implementation of the pest control program must be provided to the AQIS inspector before the preclearance orchard inspection. Any changes from the proposed requirements must be approved by AQIS Canberra before export commences.

All existing import agreements, including their required pest management procedures, are currently on file. The information in them is utilised by AQIS in developing new import agreements. The management strategy for pests of Korean pear has been based on the successful program and existing import conditions for nashi pear imports from Japan. AQIS is in the process of developing a database to allow easy access to the information contained in import risk analyses, including pest management procedures.

## 9.3.3 Pest surveillance (survey and monitoring)

#### Issue 35:

The Korean Plant Protection Act designates most fruit flies as quarantine pests. Data from periodic trap inspections conducted at points of entry and in major fruit growing areas have been provided to AQIS. On the basis of this information Korea has requested that fruit fly monitoring be removed from the conditions for export of Korean pear to Australia.

#### AQIS's position:

Fruit for export to Australia from Korea is sourced with the understanding that Korea is free from fruit flies. However, monitoring of fruit fly incursions must continue for Korea to verify its freedom from fruit flies. NPQS will be required to continue the sentinel fruit fly monitoring program already being carried out in Korea, ie. monitoring airports, seaports and markets for imported fruit. Information including number and location of traps, data on trap catches, and species caught must be provided to the AQIS inspector for audit at preclearance. If any fruit fly species of economic concern to Australia are detected, NPQS must inform AQIS Canberra office immediately. If fruit flies are detected trade will stop immediately pending the outcome of an investigation.

#### <u>Issue 36</u>:

Responsibility for testing for diseases: testing blossom for brown rot (*Monilinia fructigena*), pear scab (*Venturia nashicola*), and black spot (*Alternaria gaisen*) needs to be done by an experienced plant pathologist.

#### AQIS's position:

All disease management programs and testing including brown rot, pear scab, and black spot which require special tests are conducted by NPQS staff or other scientists under NPQS supervision. The results from these surveys will be submitted to AQIS for evaluation.

#### Issue 37:

Preharvest inspection procedures: there is very little information provided about inspections and their statistical validity. What is the statistical basis for their selection?



## AQIS's position:

A random sample of trees at different points in the orchards will be inspected jointly by AQIS and NPQS inspectors for pests at preharvest. Preharvest inspections assess the efficacy of control measures adopted in the export orchards. The inspection results will also be used to evaluate whether there is any need to change the intensity of inspection at preclearance. This inspection protocol is based on the protocol for nashi pear from Japan, which has resulted in a very low level of interceptions of pests.

## 9.3.4 Area freedom

## Issue 38:

Area freedom: respondents queried the area freedom status of regions in Korea. Specific questions were asked on the following issues: the definition of area freedom; the distance from the nearest occurrence of a disease of major concern (eg. fire blight, brown rot); the level of surveillance required to define the occurrence and distribution of disease in the exporting country; the definition of an orchard; whether a registered and an unregistered orchard can adjoin each other; the requirements for buffer zones and whether there were movement restrictions on quarantine risk materials into the export areas.

## AQIS's position:

The area referred to in area freedom may be an official country or part thereof. Area freedom is defined at levels from orchard to country depending on the pest or disease concerned. The definition of area freedom for each pest of concern is included in this document (Section 6 - Phytosanitary Requirements). An orchard is an area of production which operates as a single unit, with the same pest management practices and monitoring systems. Orchards registered for export may adjoin unregistered orchards, however buffer zones are required.

Specific buffer zones are required for individual diseases. For example Japanese pear rust and pearjuniper rust freedom is ensured by use of fungicides to combat the disease both in junipers and pear and non-acceptance of fruit from orchards within 2km of infection sites.

The surveillance and fruit inspection requirements are designed to detect any the presence of export produce with quarantine pests. In Korea, orchards exporting fruit to Australia are in designated export areas registered by NPQS. All export orchards and a sample of non export orchards, if they adjoin export orchards, are surveyed by NPQS for quarantine diseases and a random sample is selected for detailed investigation to provide data to AQIS. NPQS will ensure that internal quarantine regulations are enacted to restrict the movement of material infected with quarantine diseases into the designated export areas.

## Issue 39:

Fruit fly trapping procedures and consistency of monitoring for fruit flies with Australian Codes of Practice: the requirements for fruit fly trapping need to be listed more fully. They are presumably equivalent to Australian requirements, but this should be stated.

## AQIS's position:

AQIS has based the required fruit fly trapping procedures for export of Korean pear from Korea on the Australian Code of Practice for trapping papaya fruit fly (Interstate Plant Health Regulation Working Group, 1997). This code of practice is being used because of the similarities between papaya fruit fly and the species which may become of quarantine concern in Korea. These details



are provided in Section 6, Item 3, but will be reviewed at the end of the first season's trade.



# 9.4 Post-harvest Management

## 9.4.1 Packing house

## <u>Issue 40</u>:

Packing house hygiene: what standards have been proposed by NPQS for orchard and packing house hygiene?

# AQIS's position:

Packing house facilities' hygiene will be inspected and approved by an AQIS inspector before preclearance.

## Issue 41:

Packing requirements and elimination of trash: respondents have asked for an explanation of the statement "packing material must be new and not of plant origin" and requested information about the elimination of trash from packed fruit.

## AQIS's position:

Material of plant origin refers to unprocessed material of plant origin such as straw and not to material processed out of plant material such as cardboard. This requirement is intended to remove the possibility of hitch-hiking pests. AQIS will require that only plant material processed to such an extent as to remove the quarantine risk or synthetic material be used as packaging material. There is no provision for repacking. The packages must be free of quarantine pests, plant trash and soil and AQIS will take action if packages contain these contaminants.

## Issue 42:

Security of packed fruit against reinfestation: inspected and cleared fruit will be stored separately in cold store at 1-3°C. Are any safeguards planned to prevent pest infestation after packing? How will packages be sealed to prevent further attack?

## AQIS's position:

NPQS will ensure that packing houses meet AQIS's requirements at the time of packing fruit to Australia. All fruit packages for export to Australia will be sealed using one of the methods outlined in Section 6, Item 7 and moved to a cool store for storage.

# 9.4.2 Disinfestation treatments

## <u>Issue 43</u>:

Disinfestation treatment for pests: why have disinfestation treatments such as cold disinfestation, fumigation or vapour heat treatment not been considered as part of the proposed Korean requirements?

## AQIS's position:

Disinfestation treatments are not recommended because pears do not tolerate methyl bromide fumigation and deteriorate quickly when warmed through vapour heat treatment. AQIS's proposed management strategy is based on the premise that there are no fruit flies in pear-growing areas of Korea, and requires that this be verified by monitoring and inspection of fruit. Other pests can be



adequately controlled by the proposed management strategies.

## Issue 44:

Postharvest treatment of fruit for pathogens: there is no information provided on post-harvest treatments to control fungi or bacteria.

## AQIS's position:

The likelihood of pathogenic propagules/contaminants reaching fruit will be minimal as fruit is bagged when it is less than 2.5cm in diameter. Fruit is thinned to select a desirable shape and quality free from pests. Dipping fruit in a fungicide or disinfecting agent should not be necessary as fruit is covered by bags during most of the growing season. Fruit is visually inspected during preclearance and any fruit that are infected will be rejected. A sample of fruit will also be incubated to check for any latent infection before export of fruit commences.

# 9.4.3 Preclearance inspection

## <u>Issue 45</u>:

Training requirements for pest detection/recognition: the AQIS inspector that will undertake inspection in the exporting country will require specific training in order to recognise all the pests and diseases of concern as they will not have the backup of Australian specialists. It was suggested that the exporting country play a role in providing this training.

## AQIS's position:

AQIS provides training to its inspectors who are likely to visit Korea for preclearance inspection of Korean pear. They will receive training on all aspects of pest and disease identification as well as the survey methodologies and management strategies required in the arrangement document. Many of these inspectors have considerable experience in preclearance work, especially nashi pear fruit clearance in Japan where the pests affecting pear are similar to those affecting Korean pear in Korea.

AQIS sees merit in incorporating the assistance of NPQS in training programs but does not have the financial resources to allow overseas training of its inspectors. AQIS will request that NPQS provide preserved duplicate specimens of pests intercepted by the inspector, and a collection of photographs of pests, to be used to assist in training AQIS inspectors.

## Issue 46:

Definition of a 'lot': the definition of an inspection 'lot' is inconsistent from one IRA to another and it is unclear how a 'lot' will be defined.

## AQIS's position:

Since only registered export orchards are being considered, all fruit harvested and processed from a registered orchard on a particular day is an inspection 'lot'. Whilst it is desirable to have one grower as a 'lot' for traceback purposes, the quantities of fruit to be exported are unknown (but likely to be small). It is believed that combining registered growers into one 'lot' will give sufficient fruit to make any statistical sampling scheme valid.

## Issue 47:

Confirmation of growers: it has been suggested that it is unnecessary to add packing dates and 'lot' identification letters to cartons as confirmation of growers is only possible by using orchard



registration numbers and packing house numbers. In addition it may be unnecessary to specify 'lots' and cartons per 'lot' in a new phytosanitary certificate issued after the AQIS inspector leaves.

## AQIS's position:

The recording of packing dates and 'lot' numbers is required because the inspection process is based on individual 'lots' (fruit examined on a given day). The 'lot' numbers and packing dates are therefore necessary to ensure that examined and approved export fruit are not mixed with others. Similarly produce inspected after the AQIS inspector leaves can only be certified if it is demonstrable that it all belongs to 'lots' which have been inspected and approved. Therefore any phytosanitary certificate issued for this produce must specify the packing dates and 'lot' numbers. Issue 48:

Microscopic examination of pests at preclearance inspection: a number of respondents commented on the need for microscopic examination of all sampled fruit as the minute size of pests such as tetranychid mites will make their detection extremely difficult. The issue of internal feeding pests being overlooked during visual inspection was also raised.

#### AQIS's position:

Pests which have a high entry risk are targeted in the IRA if they are difficult to detect by visual inspection. All quarantine pests are managed by a systems approach to pest management (sanitation, chemical control, bagging, surveillance etc.).

AQIS does not intend to inspect each fruit under a microscope as it is not feasible to examine a sample of 600 fruit microscopically. However the AQIS inspector will be equipped with a handlens (10x magnification) during preclearance, and any suspect fruit will be examined under a stereoscopic microscope. The risk of internal feeding insects will be addressed by random surveillance of culled fruit during the export packing operation and by cutting any fruit which are suspected of being infested by pests.

## Issue 49:

Inspection sampling rate: several respondents asked what the agreed sample rate or proportion of fruit for inspection is, and suggested that a sample of reject fruit from each day's packing be examined for pests and diseases.

## AQIS's position:

The sample rate has not been stated in the draft IRA because the quantity of fruit available for import is unknown. AQIS will set up a sampling plan based on the projected volume of fruit to be exported but the AQIS standard will be used where possible. The AQIS standard is based on Cannon and Roe (1982), where a 600 fruit sample per 'lot' gives a 95% confidence of detecting a 0.5% infection/infestation in a homogeneous 'lot'. However, the sampling rate can be intensified if the AQIS inspector considers that interception of quarantine pests is high.

Culling of fruit on the packing line will be done by packing house staff supervised by NPQS. A random sample of culled fruit will be inspected for internal feeders by the AQIS preclearance inspector. If internal feeders are suspected, fruit will be cut for inspection. If surveillance detects critical pests or symptoms of diseases not specified, samples will be taken and forwarded to NPQS for laboratory investigation and identification.



## Issue 50:

Percentage of culled fruit cut: it has been suggested that the percentage of culled fruit to be cut for each 'lot' be reduced from 5% to 2%.

#### AQIS's position:

As stated earlier, the AQIS preclearance inspection may cut suspect fruit, but there will be no requirement to cut a certain percentage.

#### <u>Issue 51</u>:

Quality management system: a traceback system will be required for culled fruit so that if pests of concern are found, fruit from the particular registered orchard can be rejected.

#### AQIS's position:

If a 'lot' is determined to have failed then all fruit in that 'lot' fail. The orchard and packing house registration numbers will be used to traceback to grower lines in order to review pest control programs of offending growers.

## 9.4.4 On-arrival inspection

#### Issue 52:

The requirement for on-arrival inspection should be removed if the results from the first season's exports are satisfactory.

#### AQIS's position:

After stakeholder consultation, AQIS has removed the requirement for on-arrival inspection and replaced this with a preharvest visit by an Australian plant pathologist and preclearance program. The preharvest visit is for the purpose of a general disease survey, to audit NPQS annual disease survey data, and to initiate latent disease tests. This requirement will be reviewed after the first year of trade.

#### Issue 53:

On-arrival inspection: what is the purpose and who bears the cost of on-arrival inspections?

## AQIS's position:

AQIS reserves the right to examine relevant certification and seals at the port of arrival into Australia. If the certification does not conform or the seals on the containers are damaged, AQIS reserves the right to have the Korean pear fruit returned to Korea, re-exported, or ordered to be destroyed. AQIS will inform NPQS of action including any intention to suspend importation.

#### <u>Issue 54</u>:

Refinement of import conditions once trade commences: it was submitted that the conditions for the proposed requirements will need to be refined before export commences.

#### AQIS's position:

Korean pear imports will commence when NPQS and AQIS have agreed to phytosanitary requirements. In effect, the first shipment will be a trial shipment as import conditions will be reviewed at the end of the first year. Non-compliance provisions are incorporated into the import conditions.



## <u>Issue 55</u>:

Ability of Korea to conform to AQIS requirements: Korea's general level of expertise together with the efficiency of their recording and monitoring systems must be suitable for the task.

## AQIS's position:

AQIS proposes to review the requirements after the first year of export. This will reveal whether the expertise, recording and monitoring in Korea are sufficient. The results of the first season's trade will be critically reviewed by AQIS.

## Issue 56:

Importation of fruit via air freight: Is air freight permitted and if so under what conditions?

## AQIS's position:

There is no change to the import conditions for fruit imported via air freight.

## 9.4.5 Non-compliance action

## Issue 57:

It has been suggested that before importation is suspended on the detection of specified pests that certain conditions must be met, eg. pests must be found at least twice before suspension is invoked.

## AQIS's position:

To effectively minimise the risk of allowing exotic pests or diseases into Australia it is necessary to exclude produce which is shown to be contaminated. AQIS will review the management options available for any detected pest and may permit importation to continue where additional management strategies can be applied to ensure the pest does not enter on the fruit.

## Issue 58:

Action to be taken on detection of exotic pests.

# AQIS's position:

AQIS's action will depend on the pest or disease detected. Depending on the arthropod pest found, pesticide applications may be re-evaluated, preclearance inspection may be intensified or trade may be suspended.

- If fruit flies are found at preclearance inspection, trade will be suspended immediately pending the outcome of an investigation.
- If fire blight (*Erwinia amylovora*) is confirmed anywhere in Korea, fruit will not be imported and trade will cease, pending the outcome of an investigation.
- If black stem blight (*Erwinia pyrifoliae*) is confirmed anywhere in regions of Korea designated area free from this disease, trade will stop immediately until such time that AQIS is satisfied that area freedom requirements in the production areas and the 15km quarantine zone are met in accordance with the relevant ISPMs.
- If brown rot is detected in any registered orchard in a designated export area, fruit from that area will not be permitted.
- If European canker is detected in any registered orchard in a designated export area, fruit from that area will not be permitted.
- If black spot is detected at more than an average infection rate of 0.5% at blossoming, that orchard will be excluded from export of fruit.



- If Japanese pear rust or pear-juniper rust is detected on pears, fruit from the orchards within 2km of the infected site will not be accepted into Australia.
- If pear scab is detected at flower cluster inspection, orchard freedom will be suspended and fruit from orchards infected with scab will not be accepted into Australia.
- If black spot, pear scab or physalospora canker is detected at preclearance inspection, all fruit from orchards comprising that 'lot' will be rejected.
- Continued interception or unacceptable levels of quarantine pests will result in suspension of trade pending the outcome of an investigation.
- Detection of latent infections of black spot and physalospora canker on fruit will disqualify those orchards from exporting fruit.
- Detection of latent infections of brown rot, Japanese pear rust or pear juniper rust on fruit will disqualify the designated export area and areas from within 2km of the infected site from exporting fruit.

Investigations by AQIS in cooperation with NPQS will determine the ultimate position that AQIS will take.

# 9.4.6 Domestic quarantine

## Issue 59:

Internal restrictions of movement of fruit into Western Australia: both apples and pears from any source are currently prohibited entry to Western Australia under Agriculture WA legislation. AQIS should inform Korea that there are legitimate restrictions on the movement of fruit within Australia that may have implications for the proposed trade.

# AQIS's position:

Movement of fruit from ports of entry to other Australian States is under the control of State Legislation, not AQIS. Fruit must not be permitted into Western Australia as apples and pears from any source are currently prohibited entry under WA State legislation. However, there will be no restrictions imposed by AQIS on other ports of entry.

# **10. LIST OF RESPONDENTS**

Agriculture, Forestry and Fisheries Australia, Crops Division Agriculture Victoria, Institute for Horticultural Development Agriculture Western Australia Australian Apple & Pear Growers Association Inc. Apple & Pear Growers Association of South Australia Inc. Australian United Fresh Fruit and Vegetable Association Ltd Cherry Growers of Australia Inc. Cherry Growers of South Australia Commonwealth Scientific and Industrial Research Organisation, Plant Industry Division Commonwealth Scientific and Industrial Research Organisation, Entomology Division Country Women's Association of New South Wales Environment Australia, Biodiversity Group National Plant Quarantine Service, Korea Natural Resources and Environment



New South Wales Agriculture, Division of Plant Industries Northern Territory Department of Primary Industry and Fisheries Northern Victorian Fruitgrowers' Association Ltd Primary Industries and Resources South Australia Queensland Department of Primary Industries Queensland Fruit and Vegetable Growers South Australian Research and Development Institute Tasmanian Department of Primary Industry and Fisheries The Australian Dried Fruits Association Inc. Victorian Fruit Exporters Committee Victorian Growers Liaison Committee

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