Review of the Australian Requirement for Petal Testing and Flower Cluster Examination at Blossoming for Pome Fruit from Japan, The Republic of Korea and The People's Republic of China

January 2003

Foreword

Cover design photo credits (L-R):

Ya pear	http://www.chinabestfoods.com/fruits.htm
Korean pear	http://www.hartmannursery.com/AsianPr.htm
Nashi pear	http://www.agric.nsw.gov.au/reader/shinsei.htm
Fuji Apple	courtesy New York Apple Association © New York Apple Association http://nyapplecountry.com/fujiphoto.htm

TABLE OF CONTENTS

GLOSSARY OF TERMS AND ABBREVIATIONS

AFFA	Commonwealth Department of Agriculture, Fisheries and Forestry – Australia
ALOP	appropriate level of protection
AQIS	Australian Quarantine and Inspection Service
AQSIQ	State General Administration of the People's Republic of China for Quality Supervision and Inspection and Quarantine
Area	an officially defined country, part of a country or all or parts of several countries
Biosecurity Australia (BA)	an agency within the Commonwealth Department of Agriculture, Fisheries and Forestry - Australia. Biosecurity Australia protects consumers and animal and plant health, and facilitates trade, by providing sound scientifically based and cost effective quarantine policy
China	The People's Republic of China
Control (of a pest)	suppression, containment or eradication of a pest population
CIQ	China Inspection and Quarantine
Entry (of a pest)	movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled
Entry potential	likelihood of the entry of a pest
Establishment	the perpetuation, for the foreseeable future, of a pest within an area after entry
Establishment potential	likelihood of the establishment of a pest
FAO	Food and Agriculture Organization of the United Nations
FDACS	China State Department of Agriculture and Consumer Services
Fresh	not dried, deep-frozen or otherwise conserved
Introduction	entry of a pest resulting in its establishment
Introduction potential	likelihood of the introduction of a pest
IPPC	International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended
IRA	import risk analysis
ISPM	International Standard on Phytosanitary Measures
Korea	The Republic of Korea

MAFF	Ministry of Agriculture, Forestry and Fisheries, Japan
National Plant Protection Organisation	official service established by a government to discharge the functions specified by the IPPC
Non-quarantine pest	pest that is not a quarantine pest for an area
NPPO	National Plant Protection Organisation
NPQS	National Plant Quarantine Service, Korea
Official	established, authorised or performed by a National Plant Protection Organisation
Official control (of a regulated pest)	the active enforcement of mandatory phytosanitary regulations and the application of mandatory phytosanitary procedures with the objective or eradication or containment of quarantine pests or for the management of regulated non-quarantine pests
Pathway	the ordered sequence of steps leading to an outcome, or event
PBPM	Plant Biosecurity Policy Memorandum
Pest	any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products
Pest free area	an area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained
Phytosanitary measure	any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests
Phytosanitary regulation	official rule to prevent the introduction and/or spread of quarantine pests, by regulating the production, movement or existence of commodities or other articles, or the normal activity of persons, and by establishing schemes for phytosanitary certification
PQPM	Plant Quarantine Policy Memorandum
Quarantine pest	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
Regulated non-quarantine pest	a non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party

SAIQ	State Administration for Entry and Exit Inspection and Quarantine of the People's Republic of China
Spread	expansion of the geographical distribution of a pest within an area
Spread potential	likelihood of the spread of a pest
SPS	Sanitary and Phytosanitary
SPS Agreement	WTO Agreement on the Application of Sanitary and Phytosanitary Measures
WTO	World Trade Organization

Executive Summary

In reviewing the current requirement for petal testing for the diseases brown rot and black spot, and flower cluster examination for scab, Biosecurity Australia (BA) has considered the continuing high health standards of pome fruit export orchards in Japan, China and Korea resulting from consistent disease surveillance, management and surveys.

Disease surveillance data provided by the National Plant Protection Organisations (NPPOs) of the respective countries have confirmed that the diseases of concern in export orchards are either absent or the incidence is maintained at very low levels. This is ensured through regular crop inspections and orchard management practices such as fruit bagging, chemical control and hygiene, regulated by the quarantine authorities of the respective countries. The petal testing requirement is considered by exporting countries to be too stringent, time consuming and laborious, while not providing additional security against the introduction of the diseases of concern when effective orchard disease management practices are applied.

Annual petal testing and flower cluster examination undertaken by the respective countries have confirmed that export orchards have remained free from brown rot and scab throughout the history of trade, and that black spot is either absent or at very low levels. These results are achieved as a result of contemporary disease management undertaken in export orchards and are verified in exports through either pre-export or on-arrival inspections by NPPO and/or AQIS quarantine inspectors.

Australian technical experts, who have visited Japan, Korea and China, have consistently reported the excellent health status of export orchards and the high standards of pest and disease management in export orchards. The most recent visit also confirmed the ongoing controls applied to management of the export pathway by NPPOs.

Japanese nashi pear have been imported into Australia since 1989, and Korean pear and Chinese ya pear from 1999. To date there have been no interceptions of any diseases of concern to Australia on any of the imported fruit. Importers and retailers, who have not reported any disease concerns associated with imported Japanese nashi pear, Korean pear or Chinese ya pear fruit, substantiate this.

Taking these facts into consideration, BA has determined that quarantine measures such as fruit bagging, hygiene and pest management undertaken in export orchards under the regulation and supervision of NPPOs, will effectively achieve Australia's appropriate level of protection for brown rot, black spot and scab diseases. The review concludes that petal testing for brown rot and black spot and flower cluster examination for scab does not provide any additional security and should be removed from the existing import protocols.

Scope

The scope of the review is limited to existing requirements for petal and blossom cluster testing for brown rot (*Monilinia fructigena*), black spot (*Alternaria gaisen*) and scab (*Venturia nashicola*) in Asian pome fruit orchards in Korea, Japan and China that are designated by quarantine authorities for the purpose of exporting fruit to Australia.

The review evaluates the efficacy of these measures in preventing the introduction of the diseases into Australia, as a component of the entire package of phytosanitary measures that is applied to imports of pome fruit from these countries. It will not revisit the quarantine status of each disease as determined by previous import risk analyses.

The review was undertaken in accordance with relevant International Standards for Phytosanitary Measures (ISPM) developed by the FAO, including, Part 4 of the ISPM – *Pest Surveillance*: *Requirements for the establishment of pest free areas* (ISPM No 4, 1999) and *Guidelines for Surveillance* (ISPM No. 6, 1997). The full set of ISPMs can be found on the web through the International Phytosanitary Portal http://www.fao.org/WAICENT/FAOINFO/AGRICULT/ AGP/AGPP/PQ/

Background

Biosecurity Australia (BA) has undertaken this review of the requirement for petal testing for brown rot (*Monilinia fructigena*) and black spot (*Alternaria gaisen*) and flower cluster examination for scab (*Venturia nashicola*) in pear orchards in The Republic of Korea (hereafter referred to as Korea), Japan and The People's Republic of China (China) and apple orchards in Japan for the following reasons:

1. Exporting countries have repeatedly requested BA to consider the removal of the above requirement for petal testing and flower cluster examination, as they do not believe that these measures provide additional quarantine security against the three diseases. It is their view that other measures that are already specified in the import protocol adequately achieve Australia's appropriate level of protection (ALOP). The imposition of the additional disease testing is redundant and does not comply with a basic obligation of the World Trade Organisation Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) that SPS measures be applied only to the extent necessary to protect plant life or health.

2. The phytosanitary requirements listed in the import protocols for Korean pear, Japanese Fuji apple and Chinese ya pear include a requirement for the importation conditions to be reviewed after the first year on the history of interceptions of quarantine pests and diseases. The nashi pear protocol that has been in place since 1989, states that both parties have the right to review the agreed conditions if this is deemed necessary. Although no trade has taken place to date for Fuji apples from Japan since approval in 1999, BA has taken a decision to include it in the current review in order to ensure consistency in import policy.

On 15 May 2002, BA advised stakeholders in Plant Biosecurity Policy Memorandum (PBPM) 2002/22 of the commencement of a review of the Australian requirement for petal testing and flower cluster examination at blossoming for Japanese nashi pear from Japan and Korean pear from Korea. BA received two responses during the 30-day comment period; one from the Apple and Pear Growers Association of South Australia (SA) Inc., and one from the Australian Apple and Pear Growers Association. BA assured the industry representatives that their concerns would be addressed during the review and that further consultation would take place. Subsequently, petal and flower cluster testing requirements for ya pear from China and Fuji apple from Japan were also included in the review, so that testing requirements for all existing pome fruit imports from Japan, Korea and China were covered by the review.

BA developed a framework for the review to assist in collating technical information about the reassessment and to establish guidelines for the analysis. This framework identified issues and supporting data needs for consideration in the review (a copy of the framework using nashi pear as an example is provided in Attachment 1). The National Plant Protection Organisations (NPPOs) in the countries concerned were requested to provide information as outlined in the framework. Information was subsequently received from the National Plant Quarantine Service of the Republic of Korea (NPQS), Department for Supervision on Animal and Plant Quarantine in the State Administration of the People's Republic of China for Quality Supervision and Inspection and Quarantine (AQSIQ) and branch offices of China Inspection and Quarantine (CIQ), and the Ministry of Agriculture, Forestry and Fisheries in Japan (MAFF).

On 25 November 2002, prior to completing the review, BA discussed the proposed changes and issues of concern regarding the import protocol for pome fruit from Japan, Korea and China with representatives from the Australian Apple and Pear Growers Association and the Apple and Pear Growers Association of SA Incorporated. These two major associations represent the views of the Australian pome fruit industry. AFFA's Counsellor Agriculture at the Australian Embassy, Tokyo, also participated in the discussions and gave a detailed account of her recent visits to pome fruit orchards in China and Korea. She reported that good hygiene and management practices were undertaken in export orchards and expressed her opinion that the bagging of fruit was adequate to meet Australia's ALOP. She also explained that in north Asian countries, the weather conditions conducive to disease development (high rainfall) generally occur after the blossom period is over, and as a result, blossoming time may not be the ideal time for testing for diseases in orchards.

Following these discussions, the industry representatives supported the removal of the petal and flower cluster testing requirements, but suggested inclusion of a statement to address the risk of unusual weather conditions that may result in changes to the status of diseases in pome fruit orchards in Japan, Korea and China.

History of pome fruit imports from North Asia

Nashi pears have been exported to Australia from Japan since 1989, and Korean pears from Korea and ya pears from China since 1999. The import volumes are given in Table 1. There have been no quarantine pests or diseases intercepted during this period. Japanese Fuji apples although approved since 1999, have not been exported to date.

Table 1. Import volumes (tonnes)

Year	**Korean pear** Korea	**Ya pear** China	**Nashi pear** Japan	**Fuji apple** Japan
99/00	15	1,204	71	Nil
00/01	11.6	2,620	28.2	Nil
00/02	17.2	1,551.6	10.2	Nil

Diseases considered in the review

The following section outlines the biology and quarantine status of each disease as previously assessed in the respective import risk analyses. Table 2 indicates the diseases considered for each fruit.

Table 2. Diseases considered in the reassessment of the petal testing and flower cluster examination requirement

Disease	**Japanese nashi pear**	**Korean pear**	**Ya pear**	**Japanese apple**
Brown rot	*Monilinia fructigena*	*Monilinia fructigena*	*Monilinia fructigena*	*Monilinia fructigena*
Black spot	*Alternaria kikuchiana*	*Alternaria gaisen* Nagano	*Alternaria gaisen* Nagano	-
Scab	*Venturia nashicola*	*Venturia nashicola*	*Venturia nashicola*	-

Brown rot (*Monilinia fructigena*)

Monilinia fructigena affects blossoms, shoots, branches and fruit. The fungus over-winters on peduncles, mummified fruit and twigs. It usually gains entry to the fruit through wounds, causing soft decay of the flesh. The disease occurs primarily on fruit in orchards that have blossom or shoot infections, and more often on mature fruit that have some damage. The disease may continue to develop after the fruit is in storage or in the market. The fungus does not occur in Australia and has been determined to be a quarantine disease.

IRAs have concluded that area freedom from this disease meets Australia's ALOP.

References:

Jones A. L. (1990). Brown Rot Diseases. In: Jones, A. L. & Aldwinckle, H. S. (eds.). Compendium of Apple and Pear Diseases, American Phytopathological Society, 32.

Black spot (*Alternaria species*)

Black spot of pear is caused by *Alternaria* spp. In Japan, the causal organism for this disease in nashi pear is *Alternaria kikuchiana.* In Korean pear and ya pear it is caused by *A. gaisen* Nagano.

The taxonomy of Alternaria is considered by mycologists to be a complex issue. Some mycologists consider black spot to be caused by *Alternaria alternata* (Fr.) Keissler. Some consider *A. alternata* synonymous with *A. kikuchiana* Tanaka (causal organism of black spot in Japanese nashi pear). The earliest legitimate name published for the species that causes black spot is *Alternaria gaisen* Nagano. Some mycologists consider *A. alternata* and *A. gaisen* to be two distinct species. Hence the nomenclature of this fungus is considered complex.

A. alternata occurs in Australia on pome fruit. However, *A. gaisen and A. kikuchiana* do not occur in Australia on pome fruit and are considered to be quarantine diseases.

IRAs have concluded that freedom from fruit infection meets Australia's ALOP.

References:

Sakuma, T (1990). Japanese pear black spot. In: Jones, A.L. & Aldwinckle, H.S. (eds.). Compendium of Apple and Pear Diseases. American Phytopathological Society, 25.

Smith, I.M., McNamara, D.G., Scott, P.R. Holderness, M. & Burger, B. (eds.). (1977). Quarantine Pests of Europe, CAB International: UK, 639-643.

Pear scab (*Venturia nashicola*)

Venturia nashicola is considered to be synonymous with *V. pirina* and this fungus is present in Australia on pear. Some mycologists consider *V. nashicola* as distinct from *V. pirina,* while others suggest it is a variant of the same species. Due to the complexity and uncertainty of the taxonomy of this pathogen it has been determined to be a quarantine disease.

The host range of *V. nashicola* includes most Asian pear species but not European pear (*P. communis*). The pathogen affects leaves, petioles, shoots and fruit. Young fruit are most susceptible but mature fruit may also be affected. Infected fruit are scabby, misshapen and may even crack making it possible to separate any infected fruit from clean fruit during inspection prior to export. Late infection of mature fruit has been reported. In such cases, small pinpoint lesions develop on fruit in cold storage.

IRAs have concluded that orchard freedom from this disease meets Australia's ALOP.

Reference:

Shabi, E. (1990). Pear scab. In: Jones, A. L. & Aldwinckle, H. S. (eds.), Compendium of Apple and Pear Diseases. American Phytopathological Society, 22-23.

Potential pathway for disease introduction

During this review, an assessment of the potential pathway for disease introduction resulting from the import of fruit was considered. A pathway for the introduction and establishment of disease has a number of steps that must be completed before a pathogen is likely to become established. Phytosanitary measures are applied at points on the defined pathway to reduce the risks of introduction of quarantine pests to an acceptable level.

The first steps of the pathway occur in the country of origin and take into consideration the interaction between the hosts and pathogens within the production system. The later steps occur after packing and transportation and presuppose the end use of the imported commodity through to its final destination.

A potential pathway for the introduction of the three diseases to Australia by way of imported fruit is suggested below:

Offshore (Japan, Korea, China)

- Disease active in registered export areas sourcing fruit during the growing season
- Disease propagules transferred to fruit from active source
- Disease propagules present on healthy fruit for export.

Onshore (Australia)

- Significant numbers of propagules survive the repacking, transportation and distribution phases within Australia
- Significant numbers of propagules survive on the peelings/core or discarded fruit after use
- Material discarded in an area where hosts are located
- Hosts at a receptive stage for infection
- Environmental conditions suitable for multiplication and survival of the organism
- Transfer of propagules from fruit to new host
- Sufficient propagules transferred to start infection
- Environmental conditions suitable for transmission and establishment of secondary infections from the primary infection
- Disease outbreak, if any, not detected early enough to allow eradication
- Spread from infection sources
- Presence of propagules on mature fruit
- Sufficient number of propagules needed to initiate infection.

Australia's concerns regarding diseases and existing risk management measures

Existing conditions for imports of pome fruits from North Asia are attached (Attachment 2). These were developed as part of the respective IRAs and were supported by technical information provided by each country, as well as a visit by an Australian technical expert prior to commencement of trade. (Visit reports by Satish Wimalajeewa (Korea and China, 1998), Phil Kable (Japan, ca. 1988). Government has an objective of ensuring that phytosanitary risks be addressed offshore where possible. Consistent with this policy, the primary focus of risk management is the first three steps of the possible introduction pathway. As a result there are a number of measures that are common to pathways from all three countries.

Phytosanitary measures for each of the diseases in this review are summarised below, along with the risk identified in the IRAs. Conditions that will be potentially affected by this review have been underlined in Attachment 2.

Brown rot (*Monilinia fructigena*):

Risks identified in IRAs: Latent infection, wide host range

Quarantine measures implemented to address identified risk

- pest management program and general surveillance
- fruit from registered orchards in designated export area
- bagging of fruit at initial stage (approximately 25mm diameter) with double layered bags which must remain intact until removed through the packing process
- field sanitation and control measures assured by the exporting countries' quarantine agency
- fruit packed in registered packing houses
- orchards free from disease at flowering, as demonstrated by petal testing and inspection in export orchards and in adjacent non-export orchards within the designated export area by the relevant NPPO
- export fruit free from disease symptoms.

Black spot (*Alternaria gaisen*):

Risks identified in IRAs: Early and late season fruit infection

Quarantine measures implemented to address identified risk

- pest management program and general surveillance
- fruit from registered orchards in designated export areas
- bagging of fruit at initial stage (approximately 25mm diameter) with double layered bags which must remain intact until removed through the packing process
- field sanitation and control measures assured by NPQS/AQSIQ/CIQ/MAFF
- fruit packed in registered packing houses
- low incidence of disease at flowering as demonstrated by petal testing and inspection and in adjacent non-export orchards within the designated export areas by the relevant NPPO
- export fruit free from disease symptoms.

Pear scab (*Venturia nashicola*):

Risks identified in IRAs: Early and late season fruit infection

Quarantine measures implemented to address identified risk

- pest management program and general surveillance
- fruit from registered orchards in designated export area
- bagging of fruit at initial stage (approximately 25mm diameter) with double layered bags which must remain intact until removed through the packing process
- field sanitation and control measures assured by the exporting countries' quarantine agency
- fruit packed in registered packing houses
- orchards free from disease at flowering, as demonstrated by petal testing and inspection in export orchards and in adjacent non-export orchards within the designated export area by the relevant NPPO
- export fruit free from disease symptoms.

Considerations

The need for specific disease testing of petals and flower clusters for certain diseases has been an issue raised by Japan, Korea and China for some time. All countries have indicated that they believe these measures provide no additional phytosanitary security to Australia for cited diseases of quarantine concern. When initiating the review of disease testing in all pome fruit import protocols for the North Asia region, BA sought additional technical data from respective countries to more effectively assess the risk of disease occurring in export orchards.

National surveillance data provided by NPPOs has indicated that the three diseases of concern have either not been reported for a number of years, or occur sporadically and are readily controlled by contemporary orchard management practices applied in each country. Field visits to Korea and China were completed as part of the review and considered orchard control measures and operations of NPPOs in regulating exports of Asian pears to Australia. The visit confirmed that orchard disease controls were effective and that all parties involved in the export pathway were familiar with Australia's importation conditions and requirements associated with specific pests of quarantine concern.

The need for consistency in import protocols between countries in accordance with the "Specific Principles outlined in the International Standards for Phytosanitary Measures – Principles of Plant Quarantine as related to International Trade" (Publication No. 1, FAO, Rome 1995) was recognised by BA and the review was expanded to cover the same measures for nashi pear and Fuji apple protocols for Japan. The Clause 16 under Specific Principles states that "phytosanitary measures shall be applied without discrimination between countries of the same phytosanitary status, if such countries can demonstrate that they apply identical or equivalent phytosanitary measures in pest management.

In all cases, the history of trade has been taken into account. As a result of ongoing trade and dialogue with respective countries, AQIS and BA have developed a high level

of confidence in the outcomes achieved by phytosanitary measures applied through the existing importation conditions. They also have confidence in the verification and validation of measures by each of the NPPOs as evidenced through outturn and inspection and audit of the export pathway by AQIS officers and Australian technical experts. The end result is that there have been no quarantine pests or diseases detected in imported pome fruit from North Asia.

Analysis of the outcome of each phytosanitary measure included in existing importation conditions (Attachment 2) indicates areas of overlap between orchard surveillance, disease management measures and disease tests. These are summarised in Table 3, which refers to data from testing or regulatory actions that supports the efficacy of each measure. Where there is clear redundancy in overlapping measures, BA considers that it should be possible to remove or modify them without loss of phytosanitary security. It is considered that there is sufficient rigour in orchard inspection and management processes contained in the existing importation conditions that are overseen by NPPOs to allow the disease testing requirements to be removed. However, BA also recognises that this will necessitate additional focus on the efficacy of NPPO orchard inspections to ensure that diseases of concern are detected, if present.

Disease experts in all three countries indicated that the three diseases of concern could be readily identified if present in orchards, particularly during wetter summer months when high relative humidity and free moisture promote symptom expression. These conditions occur most often in production areas in North Asia during June to August, which is well after the blossoming and disease testing of flowers. Warm, wet summer conditions have significant potential to increase disease incidence in orchards, with resultant carry over into the next growing season if orchard sanitation is not effective. BA considers that orchard inspections at blossoming and during the summer will allow brown rot and scab diseases to be detected if present and orchards with these diseases to be deregistered. Threshold levels for black spot are set at 0.5% at orchard inspection, which can be readily determined through systematic orchard inspection by the NPPO.

Key phytosanitary measures retained by the review for management of risk posed by brown rot, black spot and scab are:

- Maintaining high health standards of pome fruit export orchards in Japan, China and Korea as observed by several Australian scientists and/or numerous AQIS preclearance officers.
- Ongoing disease surveillance undertaken in all export orchards with appropriate orchard management and orchard sanitation practices implemented as necessary to ensure Australia's ALOP is met.
- Bagging of fruit (with double layered bags) in accordance with Australian importation conditions, verified NPPOs and AQIS preclearance visits.
- Ongoing knowledge of the status of diseases based on national surveillance conducted by respective NPPOs, which confirms the low incidence of these diseases.
- Provision of advice to Australian authorities when quarantine pest thresholds are breached and of actions taken to ensure that fruit from these orchards are not exported to Australia.

Table 3. Technical data supporting the removal of disease testing requirements

Information provided by National Plant Protection Organisation					
Phytosanitary measure	**Risk management outcome from measure**	**Quarantine authority**			
		NPQS	**AQSIQ**	**MAFF**	
		Korean pear	**Ya pear**	**Nashi pear**	**Apple (brown rot only)**
Pest management program and general surveillance	Disease incidence in orchards meets Australia's ALOP Low pest pressure maintained throughout growing season	General export orchard surveillance three times between May and October by NPQS officers	General export orchard surveillance three times between May and October by AQSIQ officers. Results 2000 – 2002 provided. Orchards with inadequate phytosanitary controls deregistered	Orchard surveillance Surveys for brown rot in export areas in Kawahara-cho, Tottori prefecture from April to September by MAFF and Tottori staff.	Orchard surveillance
Fruit from registered orchards in designated export areas	Control of export pathway by NPPO	Orchard registration managed by NPQS	Orchard registration managed by AQSIQ	Orchard registration managed by MAFF and Prefectural authorities	Orchard registration managed by MAFF and Prefectural authorities
Bagging of fruit at initial stage (approximately 25mm diameter) with double layered bags which must remain intact until removed through the packing process	Physical barrier over fruit to prevent infection through the growing season Prevent contamination at harvest	All fruit for Australia bagged with double bags Fungicides applied before bagging Diseased fruit removed and destroyed	All fruit for Australia bagged with double bags Fungicides applied before bagging Diseased fruit removed and destroyed	All fruit for Australia bagged with double bags Fungicides applied before bagging Diseased fruit removed and destroyed	All fruit for Australia bagged with double bags Fungicides applied before bagging and after bag removal to prevent infection
Field sanitation and control measures assured by NPPOs including AQIS	Verify that measures are in place to prevent pest carry over between seasons and buildup during growing period	Programmed chemical spray program, disease forecasting Destruction of fallen leaves, removal of prunings	Specialised field technicians advised by consultant University experts Fall leaves and prunings collected and destroyed	Random export orchard inspections by AQIS as part of preclearance	Random export orchard inspections by AQIS as part of preclearance

Information provided by National Plant Protection Organisation					
Phytosanitary measure	**Risk management outcome from measure**	**Quarantine authority**			
		NPQS	**AQSIQ**	**MAFF**	
		Korean pear	**Ya pear**	**Nashi pear**	**Apple (brown rot only)**
Fruit packed in registered packing houses	Control of export pathway by NPPO	Single packing house currently registered by NPQS	Packing houses registered by AQSIQ	Packing house registered by MAFF	Packing house registered by MAFF
Export fruit free from disease symptoms	Prevent export of infected fruit	Phytosanitary inspection by NPQS. Inspection on arrival by AQIS	Verification by preclearance AQIS inspector	Verification by preclearance AQIS inspector	Verification by preclearance AQIS inspector
National surveillance	Potential incidence and severity of disease Background levels Historical occurrence	National surveys by National Institute of Agricultural Science and Technology of Rural Development Administration 1996-1998, brown rot, black spot, scab	National surveys/International experts advice	The last confirmed report of brown rot in Tottori in 1970 and outbreaks since. Low incidence of scab and black spot	Prefectural survey
Current status of diseases, as supported by survey, surveillance	Brown rot absent Black spot – low incidence Scab – low incidence, rare (or absent) in export area	Brown rot absent Black spot – low incidence Scab – low incidence, rare (or absent) in export area	Disease pressure low during spring. Increases during warm, humid summer period. Low rainfall areas limit disease incidence. Quarantine diseases rare	Brown rot absent Black spot – low incidence Scab absent	Brown rot absent

Final revised protocol

The final revised protocols are appended in Appendices 1 – 4. Only the measures associated with petal testing for brown rot (*Monilinia fructigena*) and black spot (*Alternaria gaisen*) and flower cluster examination for scab (*Venturia nashicola*) have been amended in the respective revised import protocols.

Conclusions

In undertaking this review, BA has taken into account new technical information provided by NPPOs and from field visits by Australian technical experts, as well as reviewing past information collected through the IRA process and during trade.

Following assessment of all available data listed in Attachment 3, BA believes that petal testing and flower cluster examination measures provide no additional phytosanitary security over that provided by other measures such as orchard inspections, pesticide programs and contemporary management practices that have been adopted as experience in exporting pears to Australia has grown.

For this reason it is proposed that the requirement for petal testing for brown rot (*Monilinia fructigena*) and flower cluster examination for scab (*Venturia nashicola*) be removed, to be replaced by a requirement for orchard freedom from both diseases, as verified by orchard surveillance through the growing season.

Orchards in which brown rot is identified will be deregistered by the NPPO and will not be allowed to export fruit to Australia. Due to the potential for latent infections from external infection sources, the bag covering the developing export fruit is an essential and effective barrier to infection and a significant phytosanitary measure. NPPOs will be required to notify Australia of any detection of brown rot in fruit export regions and the measures that have been taken to control outbreaks.

The orchard freedom requirement for scab remains in place. Scab lesions may be initiated on mature fruit so the requirements for retention of intact bags and their removal at a place separated from grading and packing is considered a key phytosanitary risk management measure for this disease.

Petal tests for black spot (*Alternaria gaisen*) will similarly be replaced with requirements for effective orchard control measures to ensure disease incidence remains at less than the current tolerance level of 0.5% leaf infection. Australia expects that measures including orchard disease management strategies currently employed by NPPOs will ensure that disease control in orchards is effective and black spot incidence does not rise above the tolerance level. Orchard surveillance by the NPPO is expected to confirm low disease levels.

The import protocols contain a series of controls that will ensure that only fruit free from diseases of concern to Australia are allowed for import. BA is confident that this change does not compromise the ALOP established through IRAs on pome fruit imports from Japan, Korea and China.

Given the possibility of changes to the status of the diseases in pome fruit orchards in Japan, Korea and China resulting from unusual weather conditions that give rise to conducive conditions for disease development, BA has included an additional requirement stating that the quarantine authority in the exporting country must notify BA immediately if unusual weather conditions occur which result in disease development in export orchards above the thresholds indicated.

Attachment 1

FRAMEWORK FOR REVIEW

REVIEW OF AUSTRALIA'S PETAL TESTING AND FLOWER CLUSTER EXAMINATION IN NASHI PEAR ORCHARDS DESIGNATED TO EXPORT NASHI PEAR FRUIT TO AUSTRALIA.

A framework has been developed for collating technical information for the review and to establish guidance for the analysis to be undertaken by BA. This framework does not pre-empt the analysis but identifies issues and supporting data needs for consideration in the review.

1. Scope

BA is to consider the removal of the requirement for petal testing in export orchards for brown rot (*Monilinia fructigena*) and black spot (*Alternaria gaisen*), and flower cluster examination for scab (*Venturia nashicola*) in pear orchards designated to export pear fruit to Australia. BA will undertake the review in accordance with the International Standards for Phytosanitary Measures (ISPM) developed by the FAO, in particular, Part 4 of the ISPM - Pest Surveillance: *Requirements for the establishment of pest free areas* (ISPM No. 4, 1996). The three main components in establishing and maintaining a PFA are:

1. systems to achieve area freedom

2. measures to maintain area freedom

3. procedures to verify maintenance of area freedom

BA is to consider the current satisfactory health status of Japanese nashi pear export orchards. It has been confirmed that the incidence of diseases of concern in export orchards is either absent or very low due to contemporary orchard management practices including fruit bagging, hygiene and pest management practices regulated by the Ministry of Agriculture, Forestry and Fisheries, Japan.

Each disease will be analysed separately, as each requires a slightly different approach. The analysis is to be based on the defined concerns and risks/consequences of introduction of the respective disease.

2. Background

History

Nashi fruit has been imported into Australia from Tottori Prefecture in Honshu Island, Japan since 1989. The quarantine measures for each season have been mutually agreed through an annual "Arrangement" between BA and Japan's MAFF. The last "Arrangement" signed in October 2001 permits imports of nashi pear into Australia from 2001 until a review is deemed necessary. A copy of the "Arrangement" is attached (Attachment 2, section 2.2).

Australia's concerns regarding diseases and existing risk management measures

This review refers specifically to Items 1 and 2 in the "Arrangement" relating to petal testing for brown rot, black spot and flower cluster examination for scab.

Brown rot (*Monilinia fructigena*):

Quarantine measures implemented to address identified risk

- fruit to be sourced only from registered orchards in designated export areas of Tottori Prefecture
- bagging of fruit at initial stage (approximately 25mm diameter) with double layered bags
- orchards free from disease at flowering as demonstrated by petal testing in laboratory
- field sanitation and pest control measures in export orchards – provision of details of these programs annually to AQIS inspector
- orchard inspection for brown rot by MAFF – immediate notification by MAFF to BA if there is a detection of brown rot anywhere in Tottori Prefecture, including in unregistered orchards or household fruit trees
- orchard inspection for brown rot by MAFF and provision of details to AQIS preclearance inspector
- preharvest inspection of a representative sample of export orchards for pests and diseases by AQIS preclearance inspector
- fruit packed in registered packing houses
- joint preclearance inspection by MAFF and AQIS to ensure export fruit is free from disease symptoms.

Black spot (*Alternaria gaisen*):

Quarantine measures implemented to address identified risk

- pest management program and general surveillance
- fruit to be sourced only from registered orchards in designated export areas
- bagging of fruit at initial stage (approximately 25mm diameter) with double layered bags

- orchards free from disease at flowering as demonstrated by petal testing in laboratory
- field sanitation and pest control measures in export orchards – provision of details of these programs to AQIS inspector
- orchard inspection for black spot by MAFF – provision of details to AQIS preclearance inspector
- preharvest inspection of a representative sample of export orchards for pests and diseases by AQIS preclearance inspector
- fruit packed in registered packing houses
- joint preclearance inspection by MAFF and AQIS to ensure export fruit free from disease symptoms.

Pear scab (*Venturia nashicola*):

Quarantine measures implemented to address identified risks

- fruit to be sourced from registered orchards in designated export areas
- bagging of fruit at initial stage (approximately 25mm diameter) with double layered bags
- orchards free from scab at flowering as demonstrated by flower cluster examination in laboratory
- field sanitation and pest control measures in export orchards – provision of details of these programs to AQIS inspector
- orchard inspection for scab by MAFF and provision of details to AQIS preclearance inspector
- preharvest inspection of a representative sample of export orchards for pests and diseases by AQIS preclearance inspector
- fruit packed in registered packing houses
- joint preclearance inspection by MAFF and AQIS to ensure export fruit is free from disease symptoms.

3. Considerations

Technical data required in support of consideration for the removal of disease testing requirements:

Low incidence/absence of disease in export orchards

Inspection by MAFF to ensure disease free status in registered export orchards

Records of pests and diseases of pear orchards in Tottori Prefecture provided annually by MAFF include the incidence of black spot and scab. An average for the two diseases over the year is also recorded which indicate that general surveillance is undertaken more than once. BA would like MAFF to provide details of general surveillance undertaken by MAFF in export orchards for black spot, scab and brown rot. Details to include number of inspections, timing, method of surveillance, and by whom (eg. MAFF/Tottori Horticultural Experiment Station/crop protection officers etc.), including nil/low records for brown spot.

Have there been national surveys undertaken in Japan which could detect brown rot, black spot and scab?

Details of national surveys that would be able to detect brown rot, black spot and scab. If any has been conducted in Japan by MAFF or other pest control bodies in the last five years, MAFF to provide a complete report including survey methods and results supporting the absence or low incidence of brown rot, black spot and scab in Japan.

Absence/low incidence of diseases on fruit

Petal and flower cluster test results - already held by BA Reports of preclearance inspection by AQIS from 1989-2001 - already held by BA/AQIS.

Ongoing disease management practices in export orchards

MAFF provides the "spray guide" annually to BA. A report of the cultural practices undertaken in export orchards to ensure absence/low level of diseases will be useful for the review.

Ongoing regulatory activities to ensure fruit for Australia is free from quarantine pests

Nashi pear is imported into Australia under the agreed "Arrangement" (last "Arrangement" agreed on 10 October 2001). Japanese regulations that allow for MAFF's management of phytosanitary requirements in nashi export orchards would be useful for the review eg. restrictions/regulations on movement of pome fruit planting material and/or related regulations.

Risk of exposure

Volume of trade – data already held by BA. Projected future volumes from Japanese industry would also be useful to place risks in context of exposure. BA would appreciate receiving projected future volumes of nashi pear from Japan to Australia if these were available.

4. Final revised conditions - full set including highlighted changes

5. References, tables, appendices

EXISTING PHYTOSANITARY REQUIREMENTS FOR PEAR FRUIT FROM CHINA, JAPAN AND KOREA AND FUJI APPLES FROM JAPAN

2.1 Ya pear fruit from China to Australia (approved 1998)

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 ya pear fruit to Australia).

Item 1. Registration and submission of information
Ya pear fruit for export to Australia must be sourced from SAIQ registered orchards in designated export areas and be packed in SAIQ registered packing houses in the designated export areas. SAIQ must register all export orchards and packing houses. All individual export orchards must be numbered to enable trace back in the case of non-compliance. Maps showing the location and registration number of each export orchard and packing house are to be provided to AQIS by SAIQ 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
SAIQ must ensure that export orchards are subject to field sanitation and control measures against quarantine pests and diseases in List 1 (Section 8-Revised Summary of Quarantine Pests with High Risk Potential for Australia) of the final IRA. These controls must provide regulatory assurance that export orchards are essentially free from pests of quarantine concern to Australia. Details of the pest control program must be provided to AQIS by SAIQ before commencement of trade. SAIQ must provide a revised copy of the pest management program at pre-clearance inspection to the AQIS inspector if there is any change to the pest control program.

Detection/monitoring surveys for pests and diseases must be conducted by SAIQ in orchards registered for export within the designated areas. SAIQ will submit the results using a standard reporting format to AQIS. These pests and diseases must include fruit flies (*Bactrocera* spp.), *Euzophera pyriella*, brown rot (*Monilinia fructigena*), black spot (*Alternaria gaisen*), pear scab (*Venturia nashicola*), Japanese pear rust (*Gymnosporangium asiaticum*), physalospora canker (*Botryosphaeria berengeriana* f.sp. *piricola* (syn. *Physalospora piricola*)), and fire blight (*Erwinia amylovora*) or related species. If any other exotic pest or disease of quarantine concern to Australia is detected then AQIS Canberra office must be notified immediately for appropriate action to be taken.

SAIQ must ensure that telial hosts (*Juniperus chinensis, J. procumbens*) of Japanese pear rust (*Gymnosporangium asiaticum*) within 2 km of registered orchards are removed. If Japanese pear rust is found, fruit from the export orchards within 2km of the infected site will not be accepted into Australia.

The designated export areas must be free from fire blight (*Erwinia amylovora*) or related species. If fire blight is found SAIQ must immediately inform AQIS and imports will be suspended pending an investigation. If physalospora canker is found all fruit from orchards whose fruit comprised that 'lot' will be rejected.

Item 3. Fruit fly monitoring

The designated areas from which ya pear fruit is sourced for export to Australia (i.e. export orchards, packing houses and the surrounding area) must have a pest monitoring system in place for fruit flies (Tephritidae). The traps must consist of cuelure, trimedlure and methyl eugenol.

SAIQ must continue the current fruit fly monitoring program for Tephritidae already being carried out in Hebei Province with the addition of at least one methyl eugenol trap being placed in each export orchard and any villages present.

Summary data including number and location of traps, data on trap catches, and species caught for all fruit fly traps (methyl eugenol, cuelure, and trimedlure) is to be provided to the AQIS pre-clearance inspector.

SAIQ will notify AQIS of the detection of any species of economically important fruit flies within 48 hours of detection. AQIS will assess the species and number of individual flies detected and the circumstances of the detection. AQIS will advise SAIQ of action to be taken. If fruit flies are detected at pre-clearance inspection trade will stop immediately pending the outcome of an investigation.

Item 4. Inspection at blossoming

SAIQ must inspect all export orchards and a sample of non-export orchards in and outside of the export area at blossoming. SAIQ must conduct petal testing for black spot (*Alternaria gaisen* (syn. illegitimate = *A. kikuchiana*)) and brown rot (*Monilinia fructigena*), inspect flower clusters for pear scab (*Venturia nashicola*), and will monitor the levels of pests of concern.

Petal testing for black spot (*Alternaria gaisen*) and brown rot (*Monilinia fructigena*) must be conducted as follows:

1. Select 5 trees at random from each orchard just before full bloom.

2. Randomly select 10 flowers from each tree and incubate in air-tight containers at 23oC for 3 days.

3. Record the percentage of petals infected; orchards with an average of more than 0.5% petal infection of black spot at the time of blossoming will not be permitted to export fruit.

If brown rot is detected in any export orchards in any designated export area, fruit from that export area will not be permitted entry into Australia. Brown rot monitoring must include general inspection of export orchards and specific monitoring of designated trees (1 tree per 100 trees in export orchards). The flowers of designated trees must be inspected thoroughly for brown rot based on existing procedures.

The flower cluster samples picked for black spot assessment should also be inspected for pear scab (*Venturia nashicola*) before they are incubated. Orchards infected with pear scab at the time of blossoming will not be permitted to export fruit.

The results of petal testing and flower cluster inspection must be provided to AQIS Canberra office by SAIQ as soon as they are available.

Item 5. Bagging of fruit and storage

Bags must be placed over fruit when the fruit is no more than 2.5 cm in diameter. Fruit must be protected by bags 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 and this fruit is not to be mixed or stored with non-export fruit. No fallen fruit is to be collected for export.

Item 6. Pre-harvest inspection

Joint inspection by SAIQ and the AQIS inspector before harvest must ensure that field control programs are efficacious. The inspection must ensure that bags are intact, only bagged fruit are harvested, 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 pre-clearance if necessary.

An Australian plant pathologist will also visit before trade commences to conduct a survey for pests and diseases, with an emphasis on fire blight, initiate latency tests and to audit annual disease survey data.

At pre-harvest, the Australian plant pathologist, or nominee, will initiate latency tests or equivalent measures, to test for the presence of latent disease. These tests must be conducted in the following manner:

1. Randomly select 10 export quality ya 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±2°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 pathogens from fruit showing disease symptoms and confirm the identity, taking care not to contaminate the remaining fruit.

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

Item 7. Pre-clearance inspection or equivalent measures

All packing houses must be registered by SAIQ. Packing houses must be situated within the area trapped for fruit flies. If movement of fruit is required from orchard to packing house through an untrapped area the fruit must remain within intact bags and be covered by a tarpaulin. Only fruit that meets export conditions, set out in items 1-6, with bags intact will be delivered to the packing house and must be identified by 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 ya pear fruit packing period to Australia, no fruit for the domestic market is to be packed at this time.

The fruit must be sampled in accordance with the agreed sampling plan (600 fruit per 'lot' containing > 1000 fruit; 450 for 1000 fruit or less), for visual joint inspection by SAIQ and AQIS inspectors with the AQIS inspector determining the acceptance or rejection of fruit. Only mature, unblemished fruit may be selected for export and the inspection procedures must ensure that the ya pear fruit is free from pests or diseases of concern to Australia and any live insects, mites, leaves, twigs and soil. Culled fruit will be removed from the packing house at the end of each day. AQIS and/or SAIQ may further examine culled fruit for pests. Action must be taken on all quarantine pests if detected and all pests detected will be identified to species level by SAIQ technical specialists, or their nominated agents, and this information forwarded to AQIS. Duplicate specimens of detected pests, if available, must be given to the AQIS inspector at the time of pre-clearance. Exports will 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 ("grower") or as otherwise agreed by AQIS and SAIQ. If an inspection 'lot' is rejected due to pests or diseases in List 1. Quarantine Pests with a High Risk Potential for Australia, Final IRA, Section 8, any more 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 ya pear in China - Table 1), the offending grower's fruit will be removed from the 'lot', and the balance of the consignment reinspected in accordance with the sampling plan. Fruit from the failed grower 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.

SAIQ must use new cardboard boxes and cartons. No packing material of plant origin is to be used (eg. straw), only processed or synthetic packing material can be used. When packed fruit is to be transported it must be secured using one of the following methods:

1. fruit must be packed and directly transferred into a shipping container, which must be sealed with a SAIQ seal and not opened until the container reaches its destination;

2. fruit must be packed into cartons with screened ventilation holes; the screening mesh size must not exceed 1.6mm; or

3. fruit must be packed into cartons and the pallet of cartons must be shrink wrapped in plastic.

All cartons must be marked "For Australia", labelled with 'lot' number, orchard registration numbers, packing house number, number of cartons per 'lot' 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 for export to Australia must be stored under security and segregated from all other fruit in a cold store maintained at 1-3^{0}C until loaded into containers.

SAIQ 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
Upon completion of fruit sampling and inspection, a master phytosanitary certificate is to be issued by SAIQ 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 counter-signed and dated by the AQIS pre-clearance inspector. The phytosanitary certificate is to bear the additional declaration "Produced and inspected under the ya pear arrangement between SAIQ and AQIS".

After the AQIS inspector leaves:

- For each shipment a new phytosanitary certificate, specifying the 'lots' covered by it, cartons per 'lot' and the container and seal number must be issued by SAIQ.
- Attached to this phytosanitary certificate must be a copy of the master phytosanitary certificate jointly signed by SAIQ and the AQIS pre-clearance inspector during pre-clearance.

Item 9. Verification of consignment in Australia
AQIS reserves the right to examine relevant certification and seals at the port of arrival in Australia. If the certification does not conform or the seals on the containers are damaged, AQIS reserves the right to have the ya pear fruit returned to China, re-exported, or ordered to be destroyed. AQIS will inform SAIQ of action including any intention to suspend importation.

Item 10. Visits
An AQIS inspector must visit China in each year of trade for pre-clearance inspection, both in the field and packing house. Fees for the AQIS officer to monitor the implementation of importation requirements, surveys and/or pre-clearance inspection will be paid by the Chinese side.

An Australian plant pathologist will visit the export areas in China in the first year of trade at pre-harvest 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 China to conduct field surveys and undertake audits in subsequent years. Expenses for these visits will be met by AQIS.

Item 11. Review of requirements

The requirements must be reviewed at the end of the first season of export of ya pear fruit to Australia.

2.2 Nashi pear fruit from Japan to Australia (approved 1989)

Arrangement for the shipment of nashi fruit from Japan to Australia (2001)

Biosecurity Australia (BA) in conjunction with the Australian Quarantine and Inspection Service (AQIS), will permit the import of shipments of nashi fruit from Japan to take place under this arrangement.

The import conditions will be brought into effect by the AQIS approval of an application from an Australian importer to import nashi fruit from Japan into Australia.

These conditions are:

1. Certification by Ministry of Agriculture, Forestry and Fisheries (MAFF) that Tottori Prefecture is free from brown rot (*Monilinia fructigena*) based on an orchard petal survey.

   MAFF to inform BA immediately if there is a detection of *M. fructigena* anywhere in Tottori Prefecture, including in unregistered orchards or household fruit trees.

2. Petal sampling of areas proposing to export for freedom from black spot (*Alternaria kikuchiana*) and scab (*Venturia nashicola*). Details of results are to be provided to BA by MAFF.

3. Registration of orchards in export areas

   Each orchard registered for export as a result of meeting conditions in 2 is to be numbered and the location identified by MAFF. This information is to be given to the AQIS inspector by MAFF.

4. Details of orchard spray programs and orchard inspections by MAFF are to be given to the AQIS inspector.

5. An immediate preharvest inspection of a representative sample of export orchards is to be undertaken by the AQIS pre-clearance inspector to confirm registration arrangements, hygiene and pest control in orchards, bagging of fruit and absence of pests and diseases of quarantine concern.

6. Inspection of packing house/s prior to harvest by the AQIS inspector for acceptability of hygiene, inspection and sampling facilities and presence of fruit from uncertified orchards.

7. Inspection of fruit in packing house by AQIS jointly with MAFF inspectors.

   Passing of each lot or rejection of fruit for export is to be determined by the AQIS inspector. The sampling inspection will be undertaken on packed fruit or

adjacent to the packing house line, immediately before fruit is packed in the cartons, in accordance with the following sampling plan which is designated to provide 95% to 99% confidence that the presence of visible symptoms of black spot infection or live insects or mites on more than 0.5% of the fruit will be detected

- the sample will comprise 600 fruits (with additional fruit up to a total not exceeding 920 fruits at the discretion of the AQIS inspector where black spot symptoms are present) from each inspection lot of fruit submitted for export inspection

- an equal number of fruit is to be randomly selected from each of the grower contributing fruit to the lot. The number of fruit from each grower shall be determined by dividing 600 (or 920, if applicable) by the number of growers contributing to the lot.

8. If an inspection lot is rejected by the AQIS inspector, fruit from the offending grower's orchard is to be withdrawn from the inspection lot and the remainder of the lot may be re-submitted once for inspection. The re-submitted inspection lot will be sampled from the packed cartons in accordance with procedures specified in item 7. If it is not possible to separate the offending grower's fruit, the entire lot will be rejected.

   Growers whose fruit is rejected will not be allowed to submit any more fruit for export under this arrangement for that season, but will be allowed to export in the following season provided all export conditions are met.

9. Marking and sealing of packages to ensure integrity of the system within Japan (post packing-house)

   Each box of fruit is to be stamped or marked "For Australia", with the orchard number, packing house number, lot identification letter, and be sealed/identified by a single MAFF seal between the lid and the base of the carton.

10. Cartons are to be stored under security in a separate cold room and separated from all other nashi fruit before loading into shipping containers.

    The person in charge of the storage facilities is to maintain sufficient records to enable the status and condition of inspected fruit to be audited at any time during or after the storage period.

11. MAFF is to ensure that only those cartons inspected during the presence of the AQIS inspector in the packing house are to be loaded into shipping containers for transport to Australia.

12. MAFF is to apply door seals to the shipping containers in Tottori and again after Customs' verification inspection in Kobe port and ensure that the container numbers are correctly recorded on the phytosanitary certificates.

13. Issuing of phytosanitary certificates for each consignment by MAFF

Upon completion of fruit sampling and inspection for the season, a single master phytosanitary certificate is to be issued by MAFF, and also signed and dated by the AQIS inspector. The words "MASTER PHYTOSANITARY CERTIFICATE" are to be typed across the top, and the lot letters and number of cartons per lot included in an attachment.

For each shipment thereafter, MAFF is to issue a new phytosanitary certificate, bearing the appropriate lot letters and numbers of cartons per lot, and attach a copy of the above master phytosanitary certificate.

Both the master phytosanitary certificate and each subsequent new phytosanitary certificate are to bear the endorsement "Produced and inspected under the arrangement between MAFF and AQIS".

14. MAFF is to notify BA of any further detections of bacterial shoot blight (BSB) in Hokkaido or elsewhere in Japan as soon as confirmed.

15. BA/AQIS reserves the right to review the agreement if this is deemed necessary.

The foregoing conditions reflect the arrangement mutually consented by the directors of the Australian and Japanese plant quarantine services.

2.3 Korean Pear fruit from Korea to Australia (approved 1999)

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. 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 galli*gena), 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 P*hysalospora* 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 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(2(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
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.

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 10. 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 11. 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.

Item 12. On-arrival inspection

If on-arrival inspection in Australia replaces preclearance inspection (Item 7 of these requirements) the following conditions must be met by NPQS:

1. Pest and disease management records, detection survey results, and fruit fly trap records must be kept and audited by NPQS. NPQS must ensure that these records are available for auditing by AQIS if required.

2. NPQS must ensure that field control measures are efficacious against pests and diseases of quarantine concern to Australia, that packing houses have an appropriate level of hygiene, that only fruit meeting the conditions set out in items 1-6 are delivered to packing houses, and that the origin of fruit is traceable and auditable in the event of rejection.

3. NPQS inspectors must ensure that only mature, unblemished fruit will be selected for export and that the selection procedures result in fruit free from live pests and diseases of quarantine concern to Australia, leaves, twigs and soil.

4. NPQS will ensure that all cartons are marked “For Australia”, labelled with orchard registration numbers, packing house number and date.

5. For each shipment NPQS will issue an IPC, specifying the container and seal number. The IPC is to bear the additional declaration “Produced and inspected under the Korean pear arrangement between NPQS and AQIS”.

All other requirements listed in this document remain in place, regardless of whether preclearance or on-arrival inspection occurs.

2.4 Fuji apple from Japan to Australia (approved 1998)

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 Fuji apple fruit to Australia.

An Australian plant pathologist with extensive experience will visit the export areas prior to harvest in the first year of trade to conduct a technical study of the apple orchards, audit disease surveys and initiate disease latency tests. An AQIS officer will also visit the export orchards in Japan prior to harvest in the first year to inspect MAFF's procedures for control of pests and diseases. Additionally, an AQIS inspector will visit Japan each year of trade for pre-clearance inspection.

Item 1. Registration and submission of information
Fuji apple fruit for export to Australia must be sourced from MAFF registered export orchards and be packed in MAFF registered export packing houses in the designated export area. MAFF must register all export orchards and export packing houses within Aomori Prefecture. All individual export orchards within the designated export areas must be identifiable by the registered orchard number to enable traceback in the case of non-compliance. Maps showing the location and registration number of each export orchard and packing house are to be provided to AQIS by MAFF when petal testing results for brown rot are sent before commencement of trade.

Item 2. Pest management program and general surveillance
MAFF must ensure that export orchards are subject to adequate field sanitation and control measures against quarantine pests given in List 1 of Section 8- Revised Summary of Quarantine Pests with High Risk Potential for Australia. These controls must provide regulatory assurance that export orchards are essentially free of or have low levels of pests of quarantine concern to Australia. Details of the pest control program must be provided to AQIS before commencement of trade. MAFF must provide a revised copy at pre-clearance inspection to the AQIS inspector if there is any change to the pest control program.

Detection/monitoring surveys for pests and diseases must be conducted by MAFF in orchards registered for export within the designated areas. MAFF must submit the results using a standardised reporting format to AQIS. The standardised reporting format is to be determined by MAFF. These diseases must include brown rot (*Monilinia fructigena*), bacterial shoot blight of pear (*Erwinia amylovora*) or related species, European canker (*Nectria galligena*) and Japanese apple rust (*Gymnosporangium yamadae*) and the designated export areas must be free of these diseases. If any specified pest or disease or other exotic pest or disease of quarantine concern to Australia is detected at detection/monitoring surveys or joint inspection of orchards then AQIS must be notified immediately for appropriate action to be taken.

Item 3. Bacterial shoot blight of pear caused by *Erwinia amylovora*, a disease similar to fire blight, is restricted to Chinese pear in Hokkaido, according to information

provided by MAFF. Adequate internal quarantines must be maintained to prevent the movement of host material from Hokkaido into designated export areas to preserve the area freedom status for bacterial shoot blight of pear. Details of any changes to these control measures should be provided to AQIS. If this disease, or related species, is detected outside of Hokkaido then AQIS must be notified immediately and trade will cease, pending the outcome of an investigation.

Item 4. Fruit fly pest free area status

Pest free area status for fruit flies (*Bactrocera* spp.) has been verified for Aomori Prefecture. MAFF must continue the current sentinel fruit fly (Tephritidae) monitoring program already being carried out in Japan ie. monitoring airports, seaports, fruit production areas and markets for imported fruits. Information including data on trap catches and species caught must be provided to the AQIS pre-clearance inspector for audit at pre-clearance. If any fruit fly species of economic concern to Australia are detected, MAFF must inform AQIS immediately. If fruit flies are detected trade will cease immediately pending the outcome of an investigation.

Item 5. Inspection at blossoming

MAFF must inspect all registered export orchards and the closest non-export orchard at blossom time for bacterial shoot blight of pear (*Erwinia amylovora*) or related species, conduct petal tests for brown rot (*Monilinia fructigena*) and monitor the levels of pests of concern. MAFF must also ensure that all export orchards and the closest non-export orchard are inspected for symptoms of Japanese apple rust (*Gymnosporangium yamadae*).

The designated export area must be certified free from brown rot (*Monilinia fructigena*) and such certification will be required annually soon after tests are completed. If brown rot is found in any registered export orchard in a designated export area, fruit from orchards in that export area will not be permitted.

Petal testing will be conducted as follows: sample 10 flowers at random from each orchard as specified above just before full bloom, incubate in air-tight containers at 23°C for 3 days and record the percentage of petal infection. If brown rot is detected by petal testing in any registered export orchard in a designated export area, export of fruit from orchards in that export area will not be permitted. The results of petal testing must be provided to AQIS by MAFF as soon as they are available.

MAFF has indicated that designated export areas are free from bacterial shoot blight of pear (*Erwinia amylovora*). MAFF will monitor for this exotic disease of quarantine concern and notify AQIS immediately if it is detected in the designated export areas. If bacterial shoot blight of pear (*Erwinia amylovora*) or related species is found, imports will be suspended pending an investigation.

Item 6. Bagging of fruit and storage

Fruit must be bagged to minimise the risk of exposure to disease and arthropods. Double bags must be placed over fruit when the fruit is small and there is a low occurrence of quarantine pests. The bagging process also culls lower quality fruitlets. This procedure is adopted by other countries trading with Australia. Export fruit must be clearly identifiable from domestic fruit. Only fruit that has been bagged until about a month before harvest is to be harvested for export to Australia. Fruit for export to

Australia must not be mixed or stored with fruit for the domestic market. No fallen fruit is to be collected for export.

Item 7. Pre-harvest inspection and latent disease infection testing
Joint inspection by MAFF and AQIS officers before harvest will ensure that field control measures have been effective. A random sample of fruit from designated trees will be inspected thoroughly for signs of pests and diseases. The AQIS officer will also ensure that packing houses have an appropriate level of cleanliness and check that inspection and sampling facilities are satisfactory.

An Australian plant pathologist will also visit in the first year to conduct a technical study of the prevalence of diseases in the apple orchards prior to harvest and initiate latency testing as discussed below.

Initially, during the first year of exports, MAFF will carry out testing for latent disease infections on fruit to validate the effectiveness of the arrangement. The Australian plant pathologist present at pre-harvest will initiate the testing, to test for the presence of latent diseases. The tests will be conducted in the following manner:

1. Randomly select 10 Fuji apple fruit of export quality to be used as controls. This fruit is to be placed in cold storage.

2. Randomly select 10 export quality Fuji apple 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.

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 in an air-conditioned room maintained at 25±2°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 pathogens from fruit showing disease symptoms and confirm the identity. Compare the isolations from the control fruit and the incubated fruit.

AQIS must be advised immediately if any disease of quarantine concern is found. If no diseases of quarantine concern are found, survey results will be retained by MAFF for presentation to the AQIS inspector at pre-clearance. This requirement of testing for latent infection will be reviewed after the first year.

Item 8. Disinfestation
A combined cold treatment and methyl bromide fumigation must be used for the control of *Carposina sasakii*, *Adoxophyes orana fasciata*, *Tetranychus kanzawai* and *T. viennensis*. Cold treatment will precede fumigation. Fruit which meets the export conditions, set out in Items 1-7, will be transported to the cold treatment facility. During the Fuji apple export season to Australia, fruit for the domestic market and fruit which does not meet the export conditions will not be transported to the cold treatment facility. Fruit will be cold treated at 1°C or below for at least 40 days. On completion of the

required cold treatment fruit will then be transported under security to prevent pest reinfestation to the adjoining packing facility and sorted and packed into cartons. The packing area must be well lit. Each carton will be numbered with the registered export orchard number and can be identified by this.

The AQIS inspector will ensure that only mature, unblemished fruit will be selected for export. Culled fruit will be removed from the packing house at the end of each day. A sample of culled fruit will be visually examined by an AQIS inspector, if necessary, as a part of general verification of the efficacy of field control measures. A random selection of culled fruit will be inspected by the AQIS inspector for internal feeders. Any fruit suspected of being infested by pests will be cut for inspection. AQIS or MAFF may wish, if necessary, to further examine culled fruit for pests. MAFF must use new cardboard cartons and no packing material of unprocessed plant origin is to be used.

All packed and sealed cartons must be marked “For Australia”, labelled with orchard registration number, packing dates, and packing house number. Alternatively, for palletised “integral” consignments which have been strapped and secured the information marked on the cartons must be provided in a pallet card. Export fruit may be transferred to a separate facility for fumigation treatment. In order to prevent infestation by other pests, the fruit must be securely covered during transportation.

Fruit will be fumigated with methyl bromide for two hours at a rate of 48 g/m^3 at or above 10°C and less than 15°C (or 38g/m^3 at 15°C or more) in cartons for export with a loading ratio of 40% or less. The fruit will be sampled after fumigation in accordance with the agreed sampling plan, for visual joint inspection by MAFF and AQIS inspectors with the AQIS inspector determining the acceptance or rejection of fruit. The AQIS inspector will ensure that the inspection and disinfestation treatment procedures result in fruit free from live arthropods and diseases of quarantine concern to Australia, leaves, twigs and soil.

A joint inspection of cold treatment and fumigation procedures will be made. The AQIS inspector will be present at the completion of the cold disinfestation treatment and will verify that the cold disinfestation treatment as determined by temperature recording charts has been satisfactorily completed and with MAFF will undertake calibration of all probes before verifying that the treatment meets Australian requirements. The AQIS inspector on opening the cold storage rooms will verify that the loading of the chamber is correct with the loading plans given and that the coldroom is in a clean and sanitary condition. AQIS and MAFF will jointly supervise all fumigation treatments. Supervision will include monitoring the entry of fumigant, temperature of product and percentage of fumigant retained at the completion of each treatment.

Item 9. Pre-clearance

The fumigation treatment from each designated orchard will become an inspection ‘lot’. Six hundred units per inspection ‘lot’ will be jointly inspected by AQIS and MAFF. Action will be taken on all live quarantine pests that are detected and all live pests detected will be identified to species level by MAFF technical specialists and this information formally provided to the AQIS inspector for inclusion in the inspection report. Exports will not be permitted until the identification is completed. Fruit found to be infested or infected with pests of quarantine concern will be rejected, isolated and not accepted for export. If a ‘lot’ is determined to have failed then all fruits in that ‘lot’ fail.

If quarantine pests other than those that require area freedom are detected, fruit from that 'lot' will be rejected at pre-clearance inspection. A registered orchard from which fruit is rejected will be permitted to resubmit further 'lots' for the current export season, however will be suspended for the remainder of the season if a second 'lot' is rejected. If quarantine pests requiring area freedom are detected, area freedom will be suspended and trade will cease pending the outcome of an investigation.

Cleared fruit for export to Australia must be stored under security and segregated from all other fruit in a cold store maintained at 1-3°C until loaded into shipping containers which will be sealed. MAFF must ensure that records are properly kept to facilitate auditing of fruit during or after storage and that container doors are sealed after loading.

The AQIS inspector will also check fruit fly trapping records for the current season and traps if appropriate. If at pre-clearance inspection, *Erwinia amylovora*, *Gymnosporangium yamadae*, C*arposina sasakii*, C*ydia inopinata*, *Grapholita molesta*, *Spulerina astaurota*, *Argyresthia conjugella*, *Adoxophyes* spp., *Spilonota albicana*, *Homona magnanima*, *Rhynchites heros* or fruit flies are found, AQIS will inform MAFF of suspension of the total importation of apple fruit from Japan pending the outcome of an investigation.

If *Panonychus ulmi*, *Pseudococcus comstocki*, *Phenacoccus pergandei*, *Coccura suwakoensis*, *Alternaria mali*, *Botryosphaeria berengeriana* f.sp. *piricola*, *Diplocarpon mali*, *Monilinia mali*, *Phyllosticta solitaria* or dapple apple viroid and apple scar skin viroid are found AQIS will require details of the relevant non complying growers and will inform MAFF of the suspension of importation of apple from the relevant orchards until causes of detections can be ascertained and appropriate remedial measures taken.

If brown rot (*Monilinia fructigena*) is found in any registered export orchard in a designated export area, fruit from orchards in that export area will not be permitted. If European canker (*Nectria galligena*) is detected in the designated export area, fruit will not be imported from orchards in that area and trade will cease immediately, pending the outcome of an investigation.

If any live quarantine pests, leaves, twigs or soil are found appropriate action will be taken. AQIS will inform MAFF of action including any intention to suspend importation.

Item 10. Phytosanitary certification

Upon completion of fruit sampling and inspection, AQIS/MAFF will prepare a Master Phytosanitary Certificate. If shipment is not to be undertaken immediately, the AQIS inspector will supervise the loading of fruit into cold storage facilities and will seal the chambers so used. The AQIS inspector will return to Australia and MAFF will be responsible for ensuring security of the passed product whilst awaiting shipment.

If only one shipment is made in a season then the Master Phytosanitary Certificate will be the only phytosanitary certificate issued. The words "MASTER PHYTOSANITARY CERTIFICATE" are to be typed across the top. The Master Phytosanitary Certificate will bear the appropriate "lot" numbers, registered orchard numbers, packing dates, number of cartons per "lot", container and seal number and details of the fumigation inserted in the treatment section of the Master Phytosanitary Certificate. Details of the

cold treatment must also be attached as an Additional Declaration. This document must be counter-signed and dated by the AQIS inspector.

If more than one shipment is made, MAFF will issue a separate phytosanitary certificate, with reference to the Master Phytosanitary Certificate, for each consignment forwarded to Australia. Each phytosanitary certificate will specify the 'lots' covered by it, cartons per 'lot' and the container and seal number, with, attached to it, a copy of the Master Phytosanitary Certificate which was signed by MAFF and counter-signed by the AQIS inspector during pre-clearance.

The Master Phytosanitary Certificate and any additional phytosanitary certificates are to bear the endorsement "Produced and inspected under the Fuji apple arrangement between MAFF and AQIS".

Item 11. Verification of consignment in Australia
At the port of arrival in Australia, AQIS will examine relevant certification and seals. If certification does not conform or the seals on the containers are damaged in any way, AQIS reserves the right to inspect apple fruit for pests of quarantine concern. Depending on the outcome of this inspection, AQIS may order the Fuji apple fruit be either returned to Japan, re-exported or destroyed. AQIS will inform MAFF of any such action, including any intention to suspend importation.

Item 12. Visit expenses
Expenses for the AQIS inspector's visit to Japan for pre-clearance inspection will be paid by the Japanese side. The expenses incurred for the visit of an Australian specialist plant pathologist and an AQIS officer prior to harvest to conduct a technical study of apple orchards and initiate latency tests prior to harvest will be borne by AQIS.

Item 13. Review of arrangement
The arrangement will be reviewed at the end of the first season of export of Fuji apple fruit to Australia.

Attachment 3

A SUMMARISED VERSION OF TECHNICAL DATA AVAILABLE IN BIOSECURITY AUSTRALIA FOR THE POME FRUIT REVIEW

Korea

- NPQS spray schedule
- Korean Plant Protection Act, Article 11.1. Persons wishing to export plants or plant materials must comply with importing country requirements and no plants or plant material can be exporter unless they have passed inspection by NPQS
- AQIS inspection results – no diseases of quarantine concern intercepted on Korean pears 1999 – 2002
- Inspection visit 11 October 2002, by Counsellor (Agriculture), Tokyo
- Inspection visit, Satish Wimalajeewa, ca 1998
- Petal testing/flower cluster examination results
- Latency testing results

China

- Disease management measures
- Indicative spray program
- AQIS inspector preclearance reports
- Inspection visit, 24 – 30 September 2002, Counsellor (Agriculture), Tokyo
- Inspection visit, Satish Wimalajeewa, ca 1998
- Petal testing/flower cluster examination results
- Latency testing results

Japan

- National surveys
- Prefecture surveys
- Orchard management programs
- AQIS inspector preclearance reports
- Petal testing/flower cluster examination results
- Latency testing results

Appendices 1-4

Amended Import Protocols

Ya pear fruit from China to Australia

Item 1. Registration and submission of information

Ya pear fruit for export to Australia must be sourced from AQSIQ registered orchards in designated export areas and be packed in AQSIQ registered packing houses in the designated export areas. AQSIQ must register all export orchards and packing houses. All individual export orchards must be numbered to enable trace back in the case of non-compliance. Maps showing the location and registration number of each export orchard and packing house are to be provided to BA by AQSIQ before commencement of trade each year.

Item 2. Pest management program and general surveillance

AQSIQ must ensure that export orchards are subject to field sanitation and control measures against quarantine pests and diseases in List 1 (Section 8-Revised Summary of Quarantine Pests with High Risk Potential for Australia) of the final IRA. These controls must provide regulatory assurance that export orchards are essentially free from pests of quarantine concern to Australia. Details of the pest control program must be provided to BA by AQSIQ before commencement of trade. AQSIQ must provide a revised copy of the pest management program at pre-clearance inspection to the AQIS inspector if there is any change to the pest control program.

Detection/monitoring surveys for pests and diseases must be conducted by AQSIQ in orchards registered for export within the designated areas. AQSIQ will submit the results using a standard reporting format to BA. These pests and diseases must include fruit flies (*Bactrocera* spp.), *Euzophera pyriella*, brown rot (*Monilinia fructigena*), black spot (*Alternaria gaisen*), pear scab (*Venturia nashicola*), Japanese pear rust (*Gymnosporangium asiaticum*), physalospora canker (*Botryosphaeria berengeriana* f.sp. *piricola* (syn. *Physalospora piricola*), and fire blight (*Erwinia amylovora*) or related species. If any other exotic pest or disease of quarantine concern to Australia is detected then BA must be notified immediately for appropriate action to be taken.

AQSIQ must ensure that telial hosts (*Juniperus chinensis, J. procumbens*) of Japanese pear rust (*Gymnosporangium asiaticum*) within 2 km of registered orchards are removed. If Japanese pear rust is found, fruit from the export orchards within 2km of the infected site will not be accepted into Australia.

The designated export areas must be free from fire blight (*Erwinia amylovora*) or related species. If fire blight is found AQSIQ must immediately inform BA and imports will be suspended pending an investigation. If physalospora canker is found all fruit from orchards whose fruit comprised that 'lot' will be rejected.

Item 3. Fruit fly monitoring

The designated areas from which ya pear fruit is sourced for export to Australia (i.e. export orchards, packing houses and the surrounding area) must have a pest monitoring system in place for fruit flies (Tephritidae). The traps must consist of cuelure, trimedlure and methyl eugenol.

AQSIQ must continue the current fruit fly monitoring program for Tephritidae already being carried out in Hebei Province with the addition of at least one methyl eugenol trap being placed in each export orchard and any villages present.

Summary data including number and location of traps, data on trap catches, and species caught for all fruit fly traps (methyl eugenol, cuelure, and trimedlure) is to be provided to the AQIS pre-clearance inspector.

AQSIQ will notify BA of the detection of any species of economically important fruit flies within 48 hours of detection. AQIS will assess the species and number of individual flies detected and the circumstances of the detection. AQIS will advise AQSIQ of action to be taken. If fruit flies are detected at pre-clearance inspection trade will stop immediately pending the outcome of an investigation.

Item 4. Inspection of orchards
AQSIQ must inspect all export orchards and a sample of non-export orchards in and outside of the export area and must monitor the levels of pests of concern.

1. If brown rot is detected in any designated export area, fruit from that export area will not be permitted entry into Australia.

2. Orchards infected with pear scab will not be permitted to export fruit.

3. If the level of black spot exceeds a threshold of 0.5% after orchard inspection, those orchards will be excluded from the export program.

Item 5. AQSIQ to notify BA immediately if unusual weather conditions occur resulting in brown rot, black spot or scab diseases.

Item 6. Bagging of fruit and storage
Bags must be placed over fruit when the fruit is no more than 2.5 cm in diameter. Fruit must be protected by bags 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 and this fruit is not to be mixed or stored with non-export fruit. No fallen fruit is to be collected for export.

Item 7. Pre-harvest inspection
Joint inspection by AQSIQ and the AQIS inspector before harvest must ensure that field control programs are efficacious. The inspection must ensure that bags are intact, only bagged fruit are harvested, and that packing houses have an appropriate level of hygiene. The AQIS inspector must check inspection and sampling facilities, results of detection surveys, fruit fly trap records for the current season and traps if appropriate, and will determine the need to change the intensity of inspection at pre-clearance if necessary.

Item 8. Pre-clearance inspection or equivalent measures
All packing houses must be registered by AQSIQ. Packing houses must be situated within the area trapped for fruit flies. If movement of fruit is required from orchard to packing house through an untrapped area the fruit must remain within intact bags and be covered by a tarpaulin. Only fruit that meets export conditions, set out in items 1-7, with bags intact will be delivered to the packing house and must be identified by

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 ya pear fruit packing period for export to Australia, no fruit for the domestic market is to be packed.

The fruit must be sampled in accordance with the agreed sampling plan (600 fruit per 'lot' containing > 1000 fruit; 450 for 1000 fruit or less), for visual joint inspection by AQSIQ and AQIS inspectors with the AQIS inspector determining the acceptance or rejection of fruit. Only mature, unblemished fruit may be selected for export and the inspection procedures must ensure that the ya pear fruit is free from pests or diseases of concern to Australia and any live insects, mites, leaves, twigs and soil. Culled fruit will be removed from the packing house at the end of each day. AQIS and/or AQSIQ may further examine culled fruit for pests. Action must be taken on all quarantine pests if detected and AQSIQ technical specialists, or their nominated agents will identify all pests detected to species level, and this information forwarded to AQIS. Duplicate specimens of detected pests, if available, must be given to the AQIS inspector at the time of pre-clearance. Exports will 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 ("grower") or as otherwise agreed by AQIS and AQSIQ. If an inspection 'lot' is rejected due to pests or diseases in List 1. Quarantine Pests with a High Risk Potential for Australia, Final IRA, Section 8, any more 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 ya pear in China - Table 1), the offending grower's fruit will be removed from the 'lot', and the balance of the consignment reinspected in accordance with the sampling plan. Fruit from the failed grower 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.

AQSIQ must use new cardboard boxes and cartons. No packing material of plant origin is to be used (eg. straw); only processed or synthetic packing material can be used. When packed fruit is to be transported it must be secured using one of the following methods:

1. fruit must be packed and directly transferred into a shipping container, which must be sealed with a AQSIQ seal and not opened until the container reaches its destination;

2. fruit must be packed into cartons with screened ventilation holes; the screening mesh size must not exceed 1.6mm; or

3. fruit must be packed into cartons and the pallet of cartons must be shrink wrapped in plastic.

All cartons must be marked "For Australia", labelled with 'lot' number, orchard registration numbers, packing house number, number of cartons per 'lot' 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 for export to Australia must be stored under security and segregated from all other fruit in a cold store maintained at 1-3°C until loaded into containers.

AQSIQ 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 9. Phytosanitary certification

Upon completion of fruit sampling and inspection, a master phytosanitary certificate is to be issued AQSIQ 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 counter-signed and dated by the AQIS pre-clearance inspector. The phytosanitary certificate is to bear the additional declaration "Produced and inspected under the ya pear arrangement between AQSIQ and BA".

After the AQIS inspector leaves:

- For each shipment a new phytosanitary certificate, specifying the 'lots' covered by it, cartons per 'lot' and the container and seal number must be issued by AQSIQ.
- Attached to this phytosanitary certificate must be a copy of the master phytosanitary certificate jointly signed by AQSIQ and the AQIS pre-clearance inspector during pre-clearance.

Item 10. Verification of consignment in Australia

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

Item 11. Visits

An AQIS inspector must visit China in each year of trade for pre-clearance inspection, both in the field and packing house. The Chinese side will pay fees for the AQIS officer to monitor the implementation of importation requirements, surveys and/or pre-clearance inspection.

Item 12. Review of requirements
BA/AQIS reserves the right to review the agreement if this is deemed necessary.

If brown rot, black spot or scab is intercepted on imported fruit, BA reserves the right to implement remedial measures as deemed necessary before trade commences next season. The remedial measures could be petal testing for brown rot and black spot and flower cluster examination for scab, latent tests or other measures as deemed necessary.

Appendix 2

Nashi pear fruit from Japan to Australia

Arrangement for the shipment of nashi fruit from Japan to Australia

Biosecurity Australia (BA) in conjunction with the Australian Quarantine and Inspection Service (AQIS) will permit the import of shipments of nashi fruit from Japan to take place under this arrangement.

The import conditions will be brought into effect by the AQIS approval of an application from an Australian importer to import nashi fruit from Japan into Australia.

These conditions are:

1. Certification by Ministry of Agriculture, Forestry and Fisheries (MAFF) that Tottori Prefecture is free from brown rot (*Monilinia fructigena*) and scab based on Prefectural surveys**.** If the level of black spot exceeds a threshold of 0.5% after orchard inspection, those orchards will be excluded from the export program.

2. MAFF to inform BA immediately if there is a detection of *M. fructigena* anywhere in Tottori Prefecture, including in unregistered orchards or household fruit trees.

3. Registration of orchards in export areas

   Each orchard registered for export as a result of meeting conditions in (1) is to be numbered and the location identified by MAFF. This information is to be given to the AQIS inspector by MAFF.

4. MAFF to notify BA immediately if unusual weather conditions occur resulting in brown rot, black spot or scab in export orchards.

5. Details of orchard spray programs and orchard inspections by MAFF are to be given to the AQIS inspector.

6. An immediate preharvest inspection of a representative sample of export orchards is to be undertaken by the AQIS pre-clearance inspector to confirm registration arrangements, hygiene and pest control in orchards, bagging of fruit and absence of pests and diseases of quarantine concern.

7. Inspection of packing house/s prior to harvest by the AQIS inspector for acceptability of hygiene, inspection and sampling facilities and presence of fruit from uncertified orchards.

8. Inspection of fruit in packing house by AQIS jointly with MAFF inspectors.

Passing of each lot or rejection of fruit for export is to be determined by the AQIS inspector. The sampling inspection will be undertaken on packed fruit or adjacent to the packing house line, immediately before fruit is packed in the cartons, in accordance with the following sampling plan which is designated to provide 95% to 99% confidence that the presence of visible symptoms of black spot infection or live insects or mites on more than 0.5% of the fruit will be detected.

- the sample will comprise 600 fruits (with additional fruit up to a total not exceeding 920 fruits at the discretion of the AQIS inspector where black spot symptoms are present) from each inspection lot of fruit submitted for export inspection.

- an equal number of fruit is to be randomly selected from each of the grower contributing fruit to the lot. The number of fruit from each grower shall be determined by dividing 600 (or 920, if applicable) by the number of growers contributing to the lot.

9. If the AQIS inspector rejects an inspection lot, fruit from the offending grower's orchard is to be withdrawn from the inspection lot and the remainder of the lot may be re-submitted once for inspection. The re-submitted inspection lot will be sampled from the packed cartons in accordance with procedures specified in item 7. If it is not possible to separate the offending grower’s fruit, the entire lot will be rejected.

   Growers whose fruit is rejected will not be allowed to submit any more fruit for export under this arrangement for that season, but will be allowed to export in the following season provided all export conditions are met.

10. Marking and sealing of packages to ensure integrity of the system within Japan (post packing-house).

    Each box of fruit is to be stamped or marked "For Australia", with the orchard number, packing house number, lot identification letter, and be sealed/identified by a single MAFF seal between the lid and the base of the carton.

11. Cartons are to be stored under security in a separate cold room and separated from all other nashi fruit before loading into shipping containers.

    The person in charge of the storage facilities is to maintain sufficient records to enable the status and condition of inspected fruit to be audited at any time during or after the storage period.

12. MAFF is to ensure that only those cartons inspected during the presence of the AQIS inspector in the packing house are to be loaded into shipping containers for transport to Australia.

13. MAFF is to apply door seals to the shipping containers in Tottori and again after Customs' verification inspection in Kobe port and ensure that the container numbers are correctly recorded on the phytosanitary certificates.

14. Issuing of phytosanitary certificates for each consignment by MAFF.

    Upon completion of fruit sampling and inspection for the season, a single master phytosanitary certificate is to be issued by MAFF, and also signed and dated by the AQIS inspector. The words "MASTER PHYTOSANITARY CERTIFICATE" are to be typed across the top, and the lot letters and number of cartons per lot included in an attachment.

    For each shipment thereafter, MAFF is to issue a new phytosanitary certificate, bearing the appropriate lot letters and numbers of cartons per lot, and attach a copy of the above master phytosanitary certificate.

    Both the master phytosanitary certificate and each subsequent new phytosanitary certificate are to bear the endorsement "Produced and inspected under the arrangement between MAFF and BA".

15. MAFF is to notify BA of any further detections of bacterial shoot blight (BSB) in Hokkaido or elsewhere in Japan as soon as confirmed.

16. BA/AQIS reserves the right to review the agreement if this is deemed necessary.

    If brown rot, black spot or scab is intercepted on imported fruit, BA reserves the right to implement remedial measures as deemed necessary before trade commences next season. The remedial measures could be petal testing for brown rot and black spot and flower cluster examination for scab, latent tests or other measures as deemed necessary.

Appendix 3

Korean Pear Fruit from Korea to Australia

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. 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 BA by NPQS 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 BA 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 BA. 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 BA 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 P*hysalospora* 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 BA before exports commence each year. NPQS must inform BA immediately if there is a confirmed detection of pathogenic *Erwinia* spp. anywhere in Korea, including unregistered 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 BA.

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 BA 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. BA 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 BA 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 during orchard inspection and must monitor the levels of pests of concern.

1. If brown rot is detected in any designated export area, fruit from that export area will not be permitted entry into Australia.

2. Orchards infected with pear scab will not be permitted to export fruit.

3. If the level of black spot exceeds a threshold of 0.5% after orchard inspection, those orchards will be excluded from the export program.

Item 5. NPQS to notify BA immediately if unusual weather conditions occur resulting in brown rot, black spot or scab in export orchards.

Item 6. 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 7. 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.

Item 8. Preclearance inspection or equivalent measures
All packing houses must be registered by NPQS. Only fruit that meets the conditions, set out in items 1-7, 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 export to 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 BA. 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 BA 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 9. Phytosanitary certification
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 BA".

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.

Item 10. 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 11. Visits
An AQIS inspector must visit Korea in each year of trade for preclearance inspection, both in the field and packing house. The Korean side must pay costs for the AQIS inspector to monitor the implementation of importation requirements, surveys and/or preclearance inspection.

Item 12. On-arrival inspection
If on-arrival inspection in Australia replaces preclearance inspection (Item 8 of these requirements) the following conditions must be met by NPQS:

1. Pest and disease management records, detection survey results, and fruit fly trap records must be kept and audited by NPQS. NPQS must ensure that these records are available for auditing by AQIS if required.

2. NPQS must ensure that field control measures are efficacious against pests and diseases of quarantine concern to Australia, that packing houses have an appropriate level of hygiene, that only fruit meeting the conditions set out in items 1-6 are delivered to packing houses, and that the origin of fruit is traceable and auditable in the event of rejection.

3. NPQS inspectors must ensure that only mature, unblemished fruit will be selected for export and that the selection procedures result in fruit free from live pests and diseases of quarantine concern to Australia, leaves, twigs and soil.

4. NPQS will ensure that all cartons are marked “For Australia”, labelled with orchard registration numbers, packing house number and date.

5. For each shipment NPQS will issue an IPC, specifying the container and seal number. The IPC is to bear the additional declaration “Produced and inspected under the Korean pear arrangement between NPQS and BA”.

All other requirements listed in this document remain in place, regardless of whether preclearance or on-arrival inspection occurs.

Item 13. Review of requirements
BA/AQIS reserves the right to review the agreement if this is deemed necessary.

If brown rot, black spot or scab is intercepted on imported fruit, BA reserves the right to implement remedial measures as deemed necessary before trade commences next season. The remedial measures could be petal testing for brown rot and black spot and flower cluster examination for scab, latent tests or other measures as deemed necessary.

Fuji apple fruit from Japan to Australia

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 Fuji apple fruit to Australia.

An Australian plant pathologist with extensive experience will visit the export areas prior to harvest in the first year of trade to conduct a technical study of the apple orchards, audit disease surveys and initiate disease latency tests. A BA officer will also visit the export orchards in Japan prior to harvest in the first year to inspect MAFF's procedures for control of pests and diseases. Additionally, an AQIS inspector will visit Japan each year of trade for pre-clearance inspection.

Item 1. Registration and submission of information
Fuji apple fruit for export to Australia must be sourced from MAFF registered export orchards and be packed in MAFF registered export packing houses in the designated export area. MAFF must register all export orchards and export packing houses within Aomori Prefecture. All individual export orchards within the designated export areas must be identifiable by the registered orchard number to enable traceback in the case of non-compliance. Maps showing the location and registration number of each export orchard and packing house are to be provided to BA by MAFF before commencement of trade.

Item 2. Pest management program and general surveillance
MAFF must ensure that export orchards are subject to adequate field sanitation and control measures against quarantine pests given in List 1 of Section 8- Revised Summary of Quarantine Pests with High Risk Potential for Australia. These controls must provide regulatory assurance that export orchards are essentially free of or have low levels of pests of quarantine concern to Australia. Details of the pest control program must be provided to BA before commencement of trade. MAFF must provide a revised copy at pre-clearance inspection to the AQIS inspector if there is any change to the pest control program.

Detection/monitoring surveys for pests and diseases must be conducted by MAFF in orchards registered for export within the designated areas. MAFF must submit the results using a standardised reporting format to BA. The standardised reporting format is to be determined by MAFF. These surveys must include brown rot (*Monilinia fructigena*), bacterial shoot blight of pear (*Erwinia amylovora*) or related species; European canker (*Nectria galligena*) and Japanese apple rust (*Gymnosporangium yamadae*). The designated export areas must be free of these diseases. If any specified pest or disease or other exotic pest or disease of quarantine concern to Australia is detected through detection/monitoring surveys or joint inspection of orchards, then BA must be notified immediately for appropriate action to be taken.

Item 3. MAFF must notify BA immediately if unusual weather conditions occur resulting in brown rot in export orchards.

Item 4. Bacterial shoot blight of pear caused by *Erwinia amylovora*, a disease similar to fire blight, is restricted to Chinese pear in Hokkaido, according to information provided by MAFF. Adequate internal quarantines must be maintained to prevent the movement of host material from Hokkaido into designated export areas to preserve the area freedom status for bacterial shoot blight of pear. Details of any changes to these control measures should be provided to BA. If this disease, or related species, is detected outside of Hokkaido then AQIS must be notified immediately and trade will cease, pending the outcome of an investigation.

Item 5. Fruit fly pest free area status
Pest free area status for fruit flies (*Bactrocera* spp.) has been verified for Aomori Prefecture. MAFF must continue the current sentinel fruit fly (Tephritidae) monitoring program already being carried out in Japan ie. monitoring airports, seaports, fruit production areas and markets for imported fruits. Information including data on trap catches and species caught must be provided to the AQIS pre-clearance inspector for audit at pre-clearance. If any fruit fly species of economic concern to Australia are detected, MAFF must inform BA immediately. If fruit flies are detected trade will cease immediately pending the outcome of an investigation.

Item 6. Orchard Inspection
MAFF must inspect all registered export orchards and the closest non-export orchard at blossom time for bacterial shoot blight of pear (*Erwinia amylovora*) or related species, and monitor the levels of pests of concern. MAFF must also ensure that all export orchards and the closest non-export orchards are inspected for symptoms of Japanese apple rust (*Gymnosporangium yamadae*).

The designated export area must be inspected regularly and certified free from brown rot (*Monilinia fructigena*) and such certification will be required annually. If brown rot is found in any registered export orchard in a designated export area, fruit from orchards in that export area will not be permitted.

MAFF has indicated that designated export areas are free from bacterial shoot blight of pear (*Erwinia amylovora*). MAFF will monitor for this exotic disease of quarantine concern and notify BA immediately if it is detected in the designated export areas. If bacterial shoot blight of pear (*Erwinia amylovora*) or related species is found, imports will be suspended pending an investigation.

Item 7. Bagging of fruit and storage
Fruit must be bagged to minimise the risk of exposure to disease and arthropods. Double bags must be placed over fruit when the fruit is small and there is a low occurrence of quarantine pests. The bagging process also culls lower quality fruitlets. Other countries trading with Australia adopt this procedure. Export fruit must be clearly identifiable from domestic fruit. Only fruit that has been bagged until about a month before harvest is to be harvested for export to Australia. Fruit for export to Australia must not be mixed or stored with fruit for the domestic market. No fallen fruit is to be collected for export.

Item 8. Pre-harvest inspection and latent disease infection testing
Joint inspection by MAFF and AQIS officers before harvest will ensure that field control measures have been effective. A random sample of fruit from designated trees

will be inspected thoroughly for signs of pests and diseases. The AQIS officer will also ensure that packing houses have an appropriate level of cleanliness and check that inspection and sampling facilities are satisfactory.

An Australian plant pathologist will also visit in the first year to conduct a technical study of the prevalence of diseases in the apple orchards prior to harvest and initiate latency testing as discussed below.

Initially, during the first year of exports, MAFF will carry out testing for latent disease infections on fruit to validate the effectiveness of the arrangement. The Australian plant pathologist present at pre-harvest will initiate the testing, to test for the presence of latent diseases. The tests will be conducted in the following manner:

1. Randomly select 10 Fuji apple fruit of export quality to be used as controls. This fruit is to be placed in cold storage.

2. Randomly select 10 export quality Fuji apple 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.

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 in an air-conditioned room maintained at 25±2°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 pathogens from fruit showing disease symptoms and confirm the identity. Compare the isolations from the control fruit and the incubated fruit.

BA must be advised immediately if any disease of quarantine concern is found. If no diseases of quarantine concern are found, survey results will be retained by MAFF for presentation to the AQIS inspector at pre-clearance. This requirement of testing for latent infection will be reviewed after the first year of trade.

Item 9. Disinfestation

A combined cold treatment and methyl bromide fumigation must be used for the control of *Carposina sasakii*, *Adoxophyes orana fasciata*, *Tetranychus kanzawai* and *T. viennensis*. Cold treatment will precede fumigation. Fruit, which meets the export conditions, set out in Items 1-8, will be transported to the cold treatment facility. During the Fuji apple export season to Australia, fruit for the domestic market and fruit which does not meet the export conditions will not be transported to the cold treatment facility. Fruit will be cold treated at 1°C or below for at least 40 days. On completion of the required cold treatment fruit will then be transported under security to prevent pest reinfestation to the adjoining packing facility and sorted and packed into cartons. The packing area must be well lit. Each carton will be numbered with the registered export orchard number and can be identified by this.

The AQIS inspector will ensure that only mature, unblemished fruit will be selected for export. Culled fruit will be removed from the packing house at the end of each day. A sample of culled fruit will be visually examined by an AQIS inspector, if necessary, as a part of general verification of the efficacy of field control measures. The AQIS inspector will inspect a random selection of culled fruit for internal feeders. Any fruit suspected of being infested by pests will be cut for inspection. AQIS or MAFF may wish, if necessary, to further examine culled fruit for pests. MAFF must use new cardboard cartons and no packing material of unprocessed plant origin is to be used.

All packed and sealed cartons must be marked "For Australia", labelled with orchard registration number, packing dates, and packing house number. Alternatively, for palletised "integral" consignments, which have been strapped and secured the information marked on the cartons must be provided in a pallet card. Export fruit may be transferred to a separate facility for fumigation treatment. In order to prevent infestation by other pests, the fruit must be securely covered during transportation.

Fruit will be fumigated with methyl bromide for two hours at a rate of 48 g/m^3 at or above 10°C and less than 15°C (or 38g/m^3 at 15°C or more) in cartons for export with a loading ratio of 40% or less. The fruit will be sampled after fumigation in accordance with the agreed sampling plan, for visual joint inspection by MAFF and AQIS inspectors with the AQIS inspector determining the acceptance or rejection of fruit. The AQIS inspector will ensure that the inspection and disinfestation treatment procedures result in fruit free from live arthropods and diseases of quarantine concern to Australia, leaves, twigs and soil.

A joint inspection of cold treatment and fumigation procedures will be made. The AQIS inspector will be present at the completion of the cold disinfestation treatment and will verify that the cold disinfestation treatment as determined by temperature recording charts has been satisfactorily completed and with MAFF will undertake calibration of all probes before verifying that the treatment meets Australian requirements. The AQIS inspector on opening the cold storage rooms will verify that the loading of the chamber is correct with the loading plans given and that the coldroom is in a clean and sanitary condition. AQIS and MAFF will jointly supervise all fumigation treatments. Supervision will include monitoring the entry of fumigant, temperature of product and percentage of fumigant retained at the completion of each treatment.

Item 10. Pre-clearance

The fumigation treatment from each designated orchard will become an inspection 'lot'. Six hundred units per inspection 'lot' will be jointly inspected by AQIS and MAFF. Action will be taken on all live quarantine pests that are detected and MAFF technical specialists will identify all live pests detected to species level and this information formally provided to the AQIS inspector for inclusion in the inspection report. Exports will not be permitted until the identification is completed. Fruit found to be infested or infected with pests of quarantine concern would be rejected, isolated and not accepted for export. If a 'lot' is determined to have failed then all fruits in that 'lot' fail. If quarantine pests other than those that require area freedom are detected, fruit from that 'lot' will be rejected at pre-clearance inspection. A registered orchard from which fruit is rejected will be permitted to resubmit further 'lots' for the current export season, however will be suspended for the remainder of the season if a second 'lot' is rejected.

If quarantine pests requiring area freedom are detected, area freedom will be suspended and trade will cease pending the outcome of an investigation.

Cleared fruit for export to Australia must be stored under security and segregated from all other fruit in a cold store maintained at 1-3°C until loaded into shipping containers which will be sealed. MAFF must ensure that records are properly kept to facilitate auditing of fruit during or after storage and that container doors are sealed after loading.

The AQIS inspector will also check fruit fly trapping records for the current season and traps if appropriate. If at pre-clearance inspection, *Erwinia amylovora*, *Gymnosporangium yamadae*, *Carposina sasakii*, *Cydia inopinata*, *Grapholita molesta*, *Spulerina astaurota*, *Argyresthia conjugella*, *Adoxophyes* spp., *Spilonota albicana*, *Homona magnanima*, *Rhynchites heros* or fruit flies are found, AQIS will inform MAFF of suspension of the total importation of apple fruit from Japan pending the outcome of an investigation.

If *Panonychus ulmi*, *Pseudococcus comstocki*, *Phenacoccus pergandei*, *Coccura suwakoensis*, *Alternaria mali*, *Botryosphaeria berengeriana* f.sp. *piricola*, *Diplocarpon mali*, *Monilinia mali*, *Phyllosticta solitaria* or dapple apple viroid and apple scar skin viroid are found AQIS will require details of the relevant non complying growers and will inform MAFF of the suspension of importation of apple from the relevant orchards until causes of detections can be ascertained and appropriate remedial measures taken.

If brown rot (*Monilinia fructigena*) is found in any registered export orchard in a designated export area, fruit from orchards in that export area will not be permitted. If European canker (*Nectria galligena*) is detected in the designated export area, fruit will not be imported from orchards in that area and trade will cease immediately, pending the outcome of an investigation.

If any live quarantine pests, leaves, twigs or soil are found appropriate action will be taken. AQIS will inform MAFF of action including any intention to suspend importation.

Item 11. Phytosanitary certification

Upon completion of fruit sampling and inspection, AQIS/MAFF will prepare a Master Phytosanitary Certificate. If shipment is not to be undertaken immediately, the AQIS inspector will supervise the loading of fruit into cold storage facilities and will seal the chambers so used. The AQIS inspector will return to Australia and MAFF will be responsible for ensuring security of the passed product whilst awaiting shipment.

If only one shipment is made in a season then the Master Phytosanitary Certificate will be the only phytosanitary certificate issued. The words “MASTER PHYTOSANITARY CERTIFICATE” are to be typed across the top. The Master Phytosanitary Certificate will bear the appropriate “lot” numbers, registered orchard numbers, packing dates, number of cartons per “lot”, container and seal number and details of the fumigation inserted in the treatment section of the Master Phytosanitary Certificate. Details of the cold treatment must also be attached as an Additional Declaration. This document must be counter-signed and dated by the AQIS inspector.

If more than one shipment is made, MAFF will issue a separate phytosanitary certificate, with reference to the Master Phytosanitary Certificate, for each consignment forwarded to Australia. Each phytosanitary certificate will specify the 'lots' covered by it, cartons per 'lot' and the container and seal number, with, attached to it, a copy of the Master Phytosanitary Certificate which was signed by MAFF and counter-signed by the AQIS inspector during pre-clearance.

The Master Phytosanitary Certificate and any additional phytosanitary certificates are to bear the endorsement "Produced and inspected under the Fuji apple arrangement between MAFF and BA".

Item 12. Verification of consignment in Australia
At the port of arrival in Australia, AQIS will examine relevant certification and seals. If certification does not conform or the seals on the containers are damaged in any way, AQIS reserves the right to inspect apple fruit for pests of quarantine concern. Depending on the outcome of this inspection, AQIS may order the Fuji apple fruit to be returned to Japan, re-exported or destroyed. AQIS will inform MAFF of any such action, including any intention to suspend importation.

Item 13. Visit expenses
The Japanese side will pay expenses for the AQIS inspector's visit to Japan for pre-clearance inspection. The expenses incurred for the visit of an Australian specialist plant pathologist and an AQIS officer prior to harvest to conduct a technical study of apple orchards and initiate latency tests prior to harvest will be borne by AQIS.

Item 14. Review of arrangement
The arrangement will be reviewed at the end of the first season of export of Fuji apple fruit to Australia.

If brown rot is intercepted on imported fruit, BA reserves the right to implement remedial measures as deemed necessary before trade commences next season. The remedial measures could be petal testing for brown rot, latent tests or other measures as deemed necessary.