Australian Government

Biosecurity Australia

DRAFT

Draft Extension of Existing Policy for Pears from The People's Republic of China

- **Ya pear *(Pyrus bretschneideri* Rehd.) and Asian pear *(Pyrus pyrifolia* (Burm.) Nakai) from Hebei, Shandong and Shaanxi Provinces**

- **Fragrant pear *(Pyrus* sp. nr. *communis)* from Xinjiang Uighur Autonomous Region**

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This *Draft Extension of Existing Policy for Pears from the People's Republic of China* is produced for consultation and stakeholder comments.

Every effort has been made to ensure that the information provided in this document is true and accurate at the time of publication. A number of factors may affect the accuracy or completeness of this information. These factors include changes in pest and disease status, in scientific information, and in material continuing to be reviewed by Biosecurity Australia or otherwise provided that is relevant to the final import risk assessment.

This draft extension of existing policy for pears from the People's Republic of China should not be relied upon for making any business decisions.

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GLOSSARY OF TERMS AND ABBREVIATIONS

ALOP	appropriate level of protection
AQIS	Australian Quarantine and Inspection Service
AQSIQ	General Administration of the People's Republic of China for Quality Supervision and Inspection and Quarantine (formerly CIQ SA)
Area	an officially defined country, part of a country or all or parts of several countries
Biosecurity Australia (BA)	an independent prescribed agency within the Agriculture, Fisheries and Forestry portfolio of the Australian Government. 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
CIQ	Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China.
CIQ SA	State Administration for Entry-Exit Inspection and Quarantine of People's Republic of China (now AQSIQ)
Control (of a pest)	suppression, containment or eradication of a pest population
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
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
Fresh	not dried, deep-frozen or otherwise conserved
ICON	AQIS Import CONditions database
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
ISPM	International Standard on Phytosanitary Measures
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
Official	established, authorised or performed by a National Plant Protection Organization (DAFF is Australia's NPPO)
Official control (of a regulated pest)	the active enforcement of mandatory phytosanitary regulations and the application of mandatory phytosanitary procedures with the objective of eradication or containment of quarantine pests or for the management of regulated non-quarantine pests
Pathway	any means that allows the entry or spread of a pest
Pest	any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products
Pest categorisation	the process for determining whether a pest has or has not the characteristics of a quarantine pest or those of a regulated non-quarantine pest
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

Pest risk analysis	the process of evaluating biological or other scientific evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it
Pest risk assessment	determination of whether a pest is a quarantine pest and evaluation of its introduction potential
Pest risk assessment (for quarantine pests)	evaluation of the probability of the introduction and spread of a pest and of the associated potential economic consequences
Pest risk management	the decision-making process of reducing the risk of introduction of a quarantine pest
Pest risk management (for quarantine pests)	evaluation and selection of options to reduce the risk of introduction and spread of a pest
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
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
Spread	expansion of the geographical distribution of a pest within an area
Spread potential	likelihood of the spread of a pest
Stakeholders	Government agencies, individuals, community or industry groups or organisations, whether in Australia or overseas, with an interest in the subject matter of an IRA/Review, including the proponent/applicant for a specific project

EXECUTIVE SUMMARY

This draft extension of existing policy proposes that additional species of fresh pear fruit from Hebei and Shaanxi Provinces and Xinjiang Uighur Autonomous Region in China be allowed entry into Australia subject to phytosanitary measures for quarantine pests. The quarantine pests, proposed risk management measures and operational procedures are similar to the existing policy for fresh Ya pear fruit imported from Hebei and Shandong Provinces and Asian pears from Shandong Province.

The specific risk management measures and operational procedures proposed are:

- Permitted pear species/varieties:
  - Ya pears (*Pyrus bretschneideri*) from Hebei, Shaanxi and Shandong Provinces.
  - Asian pears (*Pyrus pyrifolia*) from Hebei, Shaanxi and Shandong Provinces.
  - Fragrant pears (*Pyrus* sp. nr. *communis*) from Xinjiang Uighur Autonomous Region.
- Fruit must be sourced from AQSIQ registered orchards and packed in packing houses in designated areas.
- Pears for export to Australia from all AQSIQ registered orchards must be subject to pre- and post-harvest treatments and handling and management systems that manage the risk of pests of quarantine concern to Australia. These include orchard control measures (orchard registration, pest surveillance and management programs and removal of alternate hosts and bagging of fruit, where required).
- Pears for export to Australia will be subject to joint pre-harvest and pre-clearance inspection by AQSIQ/CIQ and AQIS unless otherwise agreed by DAFF and AQSIQ on a region by region basis.

These proposed measures and operational procedures aim to provide a high level of sanitary and phytosanitary protection that will reduce the risk to a level below Australia's appropriate level of protection (ALOP).

This extension of existing policy is proposed in response to applications made by the People's Republic of China in March 2001 and 2003 seeking access for additional species of fresh pear fruit:

- Asian pear (*Pyrus pyrifolia* (Burm.) Nakai) from Hebei Province;

- Asian pear and Ya pear (*P. bretschneideri* Redh.) from Shaanxi Province; and
- Fragrant pear (*P*. sp. nr. *communis*) from Xinjiang Uighur Automous Region.

This extension of policy is based on the existing policy and on risk analyses for additional pests that have quarantine status for Australia. The existing policy that was reviewed, allows the importation into Australia of fresh Ya pears from Hebei and Shandong Provinces and Asian pears from Shandong Province.

The pest risk analysis process for pests that may be associated with pear fruit from the proposed regions in China identified 157 pests (119 arthropods, one nematode and 37 pathogens) as associated with pear production in China. Of these 157 pests, 139 had been considered in the previous assessments (AQIS, 1998; AFFA, 2003). Of the18 additional pests, four (one arthropod and three pathogens) were considered to be associated with the fruit pathway. Of these four pests, three were found to have the potential for entry, establishment or spread within Australia as well as associated potential economic consequences. On this basis, three pests (*Rhynchites heros, Alternaria yaliinficiens* and *Gymnosporangium sabinae)* were categorised as quarantine pests. Closely related species of these three quarantine pests had been assessed in the previous assessment (AQIS, 1998).

This draft extension of existing policy report presents details of proposed risk management measures, operational procedures and draft import conditions.

Biosecurity Australia invites comments on the technical and economic feasibility of the proposed risk management measures. In particular, comments are sought on their appropriateness and on any other measures that stakeholders consider would provide equivalent risk management.

BACKGROUND

Australia currently permits the importation of the following species of fresh pear fruit from China: **Ya** pear (*P. bretschneideri* Redh.) from Hebei and Shandong Provinces and **Asian** pear (*Pyrus pyrifolia* (Burm.)) Nakai fruit from Shandong Province (formerly referred to as 'Shandong' pears). To date no pests of quarantine concern have been intercepted on pear fruit imported from China.

Ya pears from Hebei and Shandong Provinces

Australian Quarantine and Inspection Services (AQIS) received an application from China in April 1992 seeking market access for **Ya** pear fruit from **Hebei** and Shandong Provinces in China into Australia. The "Final IRA of the Importation of Fruit of Ya Pear (*Pyrus bretschneideri* Redh.) from the People's Republic of China (Hebei and Shandong Provinces)" (AQIS 1998) was released in January 1999 and trade in **Ya** pear from Hebei Province commenced in October 1999 followed by **Ya** pears from Shandong Province in October 2000.

Review of Pome fruit from north Asia

In January 2003, Biosecurity Australia completed a review on the import conditions that were in place at the time for all existing pome fruit imports from north Asia into Australia. This review concluded that the measures of petal testing for brown rot and black spot and flower cluster examination at blossoming for scab on **Ya** pear from China did not provide any additional security and should be removed from the import protocol. The amended import conditions for **Ya** pear came into effect in the 2003 season.

Asian pears from Shandong Province

At the China-Australia bilateral quarantine technical discussions held in Beijing in March 2001, AQSIQ requested access for '**Shandong**' pears from Shandong Province. Biosecurity Australia conducted a preliminary comparison of the Chinese pest lists and requested additional information from AQSIQ. Additionally, a plant pathologist from Biosecurity Australia also visited the existing and potential export orchards for pears in Shandong Province. On this basis, Biosecurity Australia assessed that the import proposal for pears from Shandong Province could be considered as an extension of the existing policy for **Ya** pear from **Hebei** and Shandong Provinces. Details of this assessment are given in "Import of Asian (Shandong) pear (*Pyrus pyrifolia* (Burm.) Nakai and *P. ussuriensis* var. *viridis* T. Lee) fruit from Shandong Province in the People's Republic of China – A

review under existing import conditions for Ya pear (*Pyrus bretschneideri* Redh.) fruit from Hebei and Shandong Provinces" (AFFA 2003). Trade in '**Shandong**' pears from Shandong commenced in October 2003.

Asian pears from Hebei, Ya and Asian pears from Shaanxi Province, and Fragrant pear from Xinjiang Uighur Autonomous Region

Biosecurity Australia received several requests from AQSIQ (in March 2001, March 2003, and April and May 2004) for an extension of market access into Australia for **Asian** pear fruit (*Pyrus pyrifolia*) from **Hebei** province, **Ya** pear fruit (*P. bretschneideri*) and **Asian** pear fruit from **Shaanxi** province, and new access for **Fragrant** pear fruit (*Pyrus* sp. nr. *communis*) from **Xinjiang** Uighur Autonomous Region in China.

The requests from AQSIQ included lists of pests and diseases occurring in pear orchards of these species in the three production regions plus information on standard production and pest management measures in place in these areas.

Pyrus sp. nr. *communis* (**Fragrant** pear) is a different species of pear to the two species already considered and permitted access to Australia from China under existing AQIS policy (AQIS 1998, AFFA 2003).

Following a preliminary assessment, Biosecurity Australia considered that the potential quarantine pests associated with the "new" pear species (**Fragrant** pear) and the currently permitted species (**Asian** and **Ya** pears) from the additional production regions potentially did not pose significantly different risks nor require significantly different management measures than those currently applied under existing import policy. Therefore, Biosecurity Australia proposed to conduct the review as an extension of existing policy. Biosecurity Australia based this draft extension of existing import policy on and incorporated the existing policy for all **Asian** and **Ya** pear imports from China to Australia (AQIS 1998, AFFA 2003).

On 27 May 2004, Biosecurity Australia notified AQSIQ that the access request for pears from China would be considered under an extension of existing policy for **Ya** pears from **Hebei** and Shandong Provinces and **Asian** pears from Shandong Province.

Biosecurity Australia requested additional information from AQSIQ in July 2004. AQSIQ provided the information in July and August 2004.

SCOPE

In this draft extension to existing import policy, Biosecurity Australia has considered the pests associated with fresh **Ya** pears, **Asian** pears and **Fragrant** pears produced in the regions shown in Table 1 in accordance with *ISPM No. 11 (2004): Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms*.

The pears are defined as fresh fruit of species within the genus *Pyrus* that have been cultivated, harvested and packed and transported to Australia under commercial conditions from specified regions in the People's Republic of China (Table 1).

Table 1. Species and varieties of pears permitted from China under existing policy, and new importation requests under consideration (shaded)

Province / Region	**Ya** pears (*Pyrus bretschneideri*)	**Asian** pear (*Pyrus pyrifolia*)	**Fragrant pear** (*Pyrus* sp. nr. *communis*)
Hebei Province	✓	✓	
Shaanxi Province	✓	✓	
Shandong Province	✓	✓	
Xinjiang Uighur Autonomous Region			✓

This draft extension to existing import policy considers the risks of quarantine pests that may be associated with the importation of fresh pear fruit for human consumption into Australia from **Hebei**, **Shandong** and **Shaanxi** Provinces and **Xinjiang** Uighur Autonomous Region. The draft import policy also considers and evaluates measures and procedures to manage these risks to an acceptably low level, which is consistent with Australia's appropriate level of protection (ALOP) (AFFA, 2001).

THE PEAR INDUSTRY IN AUSTRALIA

Australia produces on average 169,000 tonnes of fresh pear fruit each year (ABS 2004; APAL 2002). Around 40% of the Australian pear fruit crop is produced for the domestic market as fresh fruit, 45% is processed, and the remaining 15% is exported (FAS, 2002b). Australia's average production represents 1.4% of the world production of pears (APAL, 2002).

The main varieties of traditional European pears (*Pyrus communis*) grown commercially in Australia are Packham's Triumph, Williams Bon Chretin (WBC, also called Bartlett and Duchess) and Buerre-Bosc. These varieties represent 92% of Australian pear orchard production (APAL, 2002). WBC is the major canning variety but is also popular as a fresh eating variety early in the season. Packham's Triumph is grown for the fresh fruit market and is the main variety exported from Australia (FAS, 2002a; Mitchelmore and Morenos, 1995). Other significant varieties cultivated in Australia are Josephine de Malines, Winter Nelis and Sensation (red variety). Of lesser significance are Clapp's Favourite, Winter Cole, Lemon Bergamot and Doyenne du Comice.

Australian Nashi pears (*Pyrus pyrifolia*, *P. ussuriensis* or *P.bretschneideri*), were established as a horticultural industry during the 1980's. About 80% are consumed fresh with the remainder processed mostly for juice. The main variety is Nijisseiki (90%) with some Hosui, Kosui (Coombs 1995) and Shinsui varieties are also in commercial production in Australia. Australian pear producers continue to introduce additional new varieties which are under trial and development.

Pear production in Australia

Pear fruit is grown commercially in all states. Table 2 summarises Australian pear production per state for 2003 (excluding Nashi pear). The majority of Australia's pear production occurs in Victoria with 119,156 tonnes (87.7% of Australia's total pear production) produced in 2003 (ABS, 2004).

Table 2. Australia's pear production for 2002 - 03 (excluding Nashi pear)

State	Production (tonnes)	% of Total
Victoria	119,156	87.7
Western Australia	9,135	6.7
South Australia	5,385	3.9
New South Wales	769	0.6
Queensland	687	0.5
Tasmania	783	0.6
Total	**135,919**	**100**

Source: ABS (2004).

The main Australian pear growing areas are located in regions with mild summer temperatures and cool to cold winters. These include: the Goulburn Valley in Victoria; Orange and Batlow in New South Wales; Stanthorpe in southern Queensland; the Perth Hills, Donnybrook and Manjimup in Western Australia; the Adelaide Hills in South Australia; and Spreyton, Huon Valley and the Tamar Valley in Tasmania.

The largest number of pear growers are in the Goulburn Valley region of Victoria, with 3,000 hectares of orchards. There are around 140 pear growers in southern Victoria.

The Goulburn Valley area also produces 80% of Australia's Nashi pears with the remainder being produced in Young (New South Wales), the Adelaide Hills (South Australia) and Donnybrook (Western Australia). There are about 65 Nashi pear producers in Australia with 300,000 trees in 500 hectares of orchards (Horticulture Australia Limited, 2003a).

It is estimated that 3,500 tonnes of Nashi pears were produced in Australia in 2003 (Horticulture Australia Limited, 2003b).

Export of pears from Australia

Exports of fresh pears have varied considerably during the past decade, ranging from 18,000 – 35,000 tonnes annually.

In 2002, Australia exported 18,472 tonnes of fresh pears, a majority to south-east Asia including Singapore, Malaysia and Indonesia. Canada is another important market for Australian pears (Darby, 2003).

Import of pears into Australia

Nashi pears (*Pyrus pyrifolia*) have been imported into Australia from Japan since 1989 and Korean pears (*P. ussuriensis* var. *viridis* T. Lee) from the Republic of Korea since 1999. China has exported **Ya** pears (*P. bretschneideri* Redh.) to Australia since 1999, and **Asian** pears (*P. pyrifolia* (Burm.) Nakai) since 2003 (Table 3).

Table 3. Import volumes (tonnes) for pears from China, Japan and Korea into Australia (1999-2004)

Year	Ya and Asian pears (from China)	Nashi pear (from Japan)	Korean pear (from Korea)
1999-00	1,204	71	15
2000-01	2,620	28	12
2001-02	1,552	10	17
2002-03	1,414	31	25
2003-04	3,713	36	0.01

THE PEAR INDUSTRY IN CHINA

In 2003/04 China became the world's leading pear producing country producing over half of the world's pears. Cultivated pears in China are classified into four groups:

Pyrus bretschneideri (Ya pear, duck pear, white pear, snow pear, Chang Ba, Zao Su) (Fig. 1a) is mainly grown in northern China, **Hebei**, **Shandong** and Liaoning Provinces and in Pucheng, Liquan, Qianxian, Binxian and Gaoling Counties and makes up 60% of pear production in the country (Zai-Long, 1999). A great number of cultivars exist in this group; some of these cultivars, notably Ya-Li, Xue-hua-li, Lai-yang-ci-li and Dong-guo-li produce fruits of excellent quality with crispy, juicy and sweet flesh and relatively few stone cells.

Pyrus pyrifolia (Asian pears: apple, sand, Nashi, Golden, Dang Shan Su pear, Qin Su, Feng Shui, 20th Century, Huang Guan) (Fig. 1b) grow almost wild in the Yangtze River valley. They adapt well to wet conditions and high summer temperatures and the popular cultivars Cang-xi-li and Bao-zhu-li are important cultivars in the areas where they are produced. Huang-hai-li and Jin-shu 2 are newly developed cultivars and are extensively used in new plantings. The Japanese cultivars also belong to the sand pear category, and Japanese cultivars such as New Century, Kosui and Shin sui are also important in this area.

Pyrus sp. nr. *communis* (**Fragrant** pear) (Fig. 1c) from **Xinjiang** is a *Pyrus* species differing from *P. bretschneideri* and *P. pyrifolia* in that it has a persistent calyx, a short pedicel, and an acuminate, nearly glabrous unserrated leaf. The mature pear fruit is of a small size and yellow-green and smooth.

It has thin skin and is crisp, succulent, sweet and fragrant. Harvest occurs from late August to mid September.

Pyrus ussuriensis Maxim. (Harbin, Ussurian, Qiu Zi Li pear) is the most hardy of all *Pyrus* species and is grown in the areas north of the Great Wall, especially in northeast China including Hebei, Shandong and Shaanxi Provinces. In general, fruit quality of the cultivars derived from this species is inferior to those of the other species . The fruit is usually smaller and requires a period of post-harvest ripening before it becomes edible. Representative cultivars of this group are An-li, Da-xiang-shui-li, Nan-guo-li and Jing-bei-li.

In the review of **Asian** pears from Shandong (AFFA, 2003) *P. ussuriensis* var. *viridis* was listed as one of the Asian or "Shandong" pears. The same species of pear, *P. ussuriensis* var *viridis*, is also known as "Korean pear" and has been imported into Australia from Korea since 1999. For the purpose of this draft import policy, based on further information provided by AQSIQ, Biosecurity Australia will collectively refer to various types/varieties of *P. pyrifolia* pear species under the access request by China as "**Asian** pears" hereafter in this document.

Pear production in China

In 2003, China produced 9.8 million metric tonnes of pears from plantings covering 1.06 million hectares (Branson *et al*, 2004). China's pear production has increased steadily during the last 10 years as a result of extensive planting during the 1980's and early 1990's.

Hebei is the leading pear-producing province, accounting for almost one third of total Chinese pear crop, followed by **Shandong** (Branson *et al*, 2004). The details of pear production area and volume in China for 2003 are given in Table 4.

Ya pears or duck pears are the most widely grown variety in China, followed by snow pears and account for 22% and 17% of production respectively (Branson *et al.*, 2004). Other important varieties include Su, Xuehua, and Pingguo pears.

Fragrant pear is the second highest value pear after Fuji pear in China. It was developed and is grown mainly in the Korla area of **Xinjiang** (Garland,1995) (Fig. 2) in an area of 47.7 thousand hectares. In 2003, 249,537 metric tonnes of pears were produced in **Xinjiang** (Branson *et al*., 2004).

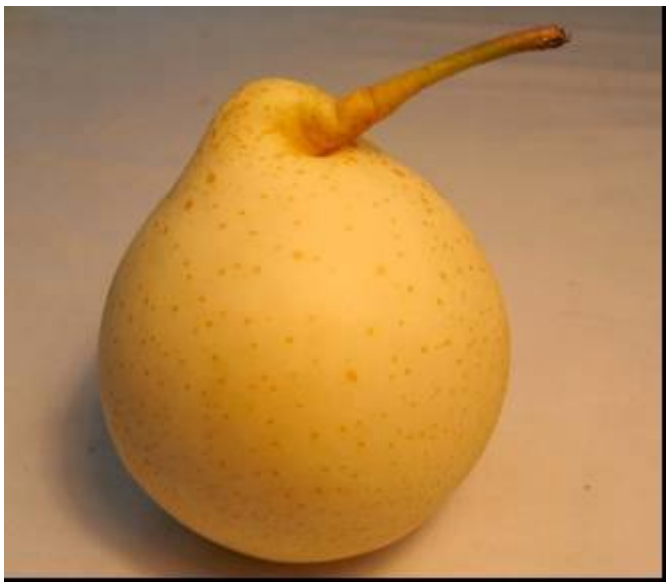

Figure 1(a). *Pyrus bretschneideri* (Duck pear, Ya pear).

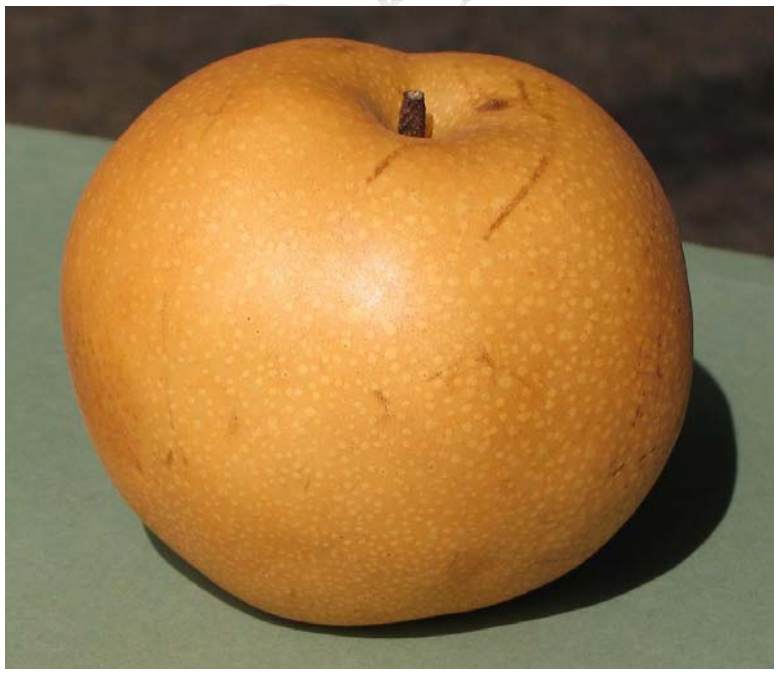

Figure 1(b). *Pyrus pyrifolia* (Asian pear: apple pear, sand pear).

Figure 1(c). *Pyrus* sp. nr. *communis* (Fragrant pear).

Table 4. Pear production area and volume in the leading five provinces and Xinjiang in China in 2003

Province	Production area ('000 ha)	Volume (metric tonnes)
Hebei	213.1	2,820,702
Shandong	74.1	982,562
Shaanxi	57.3	689,816
Anhui	36.5	583,091
Hubei	40.9	563,895
Xinjiang	47.7	249,537

Source: Branson *et al.* (2004).

Figure 2. Map of China showing the pear production regions of Hebei, Shandong and Shaanxi Provinces and Xinjiang Uighur Autonomous Region under consideration in this draft extention to existing import policy.

Export of pears from China

Pear exports from China have increased considerably in recent years and are becoming more important to Chinese pear growers. China exported about 303,169 tonnes of pears (two percent of total pear production) worth US$85M in 2002-03, compared to almost zero exports 10 years ago (Branson *et al.*, 2004).

Fruit quality in China also continues to improve, contributing to the expansion of China's exports to Indonesia 19.5%, Malaysia 14%, Russia 12%, Hong Kong 11%, Viet Nam 9.5%, Thailand 6.5% and other countries 27.5% (including Singapore, Philippines, USA, Canada, South Africa, European Union, Australia and New Zealand) (Branson *et al.*, 2004).

Ya pears constitute over half of total fresh pear exports.

The Chinese government has been engaging other countries for market access and extension of access for additional species from various regions of production.

CURRENT AUSTRALIAN IMPORT PROTOCOL FOR PEAR IMPORTS

Australia has an import protocol with China (amended January 2003) (Appendix 3) which specifies the details of the import conditions for Ya pears from Hebei and Shandong Provinces. This protocol was also applied, from August 2003, to imports of Asian pears from Shandong Province.

In summary, the import conditions as listed on the AQIS website Import Conditions (ICON) database (2004) are:

All fresh pear fruit imported from China must be pre-cleared by AQIS. The pre-clearance arrangement is contingent upon AQSIQ providing Biosecurity Australia/AQIS with satisfactory details of pest surveillance activities obtained during the growing season. No import permits will be approved until the required information has been forwarded to Biosecurity Australia and approval given for AQIS to proceed with pre-clearance each season.

Each consignment must be accompanied by a Phytosanitary Certificate endorsed "Produced and inspected under the Ya pear arrangement between AQSIQ and DAFF".

The Phytosanitary Certificate must also include the following information:

1. The pre-cleared lot numbers in the consignment.
2. The number of cartons in each pre-cleared lot.
3. The shipping container number/s.
4. The shipping container seal number/s issued by CIQ.
5. No part of the consignment will be landed in Western Australia either before or after being cleared from quarantine in Australia.
6. A copy of the relevant CIQ "Master Phytosanitary Certificate/s" must also accompany each consignment (i.e. attached to the individual consignment Phytosanitary Certificate).
7. In addition China is required to comply with the "General requirements for all fruit and vegetables".

General requirements for all fruit and vegetables

The following conditions of entry are specific to commercial imports of fresh fruit and vegetables that have been pre-cleared by AQIS under an agreed protocol arrangement with China.

1. Advice must be given to AQIS Canberra Office at least one month prior to preclearance inspection commencing.
2. A valid import permit is required. Applications may be lodged with an AQIS Regional Office.
3. A Phytosanitary Certificate must accompany each consignment.
4. A Quarantine Entry form should be lodged for produce from sea and air freight by an importer or their agent for clearance of the consignment by AQIS.
5. All costs associated with the preclearance of fresh fruits and vegetables must be borne by industry, either in the exporting country or by agreement by the importer/s. Preclearance costs include (but are not necessarily restricted to) international and domestic travel, accommodation, meal allowance, inspection costs (ie fee for service), departure taxes and miscellaneous expenses.
6. Shipment must be free of soil and other debris and packed in clean new packages.
7. Produce precleared in the country of origin is not subject to AQIS inspection on arrival in Australia, but may be subject to random monitoring by AQIS to verify container/consignment content and integrity.
8. Timber packaging, pallets or dunnage in FCL containers will be subject to inspection and treatment on arrival, unless certified as having been treated by an approved method.

AQIS undertake to provide the staff resources necessary to effectively and efficiently carry out the preclearance inspection, and in consideration of the geography and distances between production areas. Each preclearance inspection schedule will be co-ordinated by the exporting country to make best use of the AQIS officer's time, and therefore all potential importers will be required to co-ordinate their activities in this regard.

CONSIDERATIONS

This assessment and draft extension to existing import policy for access to Australia for an additional species of pear and pears from additional provinces of China has considered and incorporated both the previous import risk analysis (IRA) (AQIS 1998) and review (AFFA, 2003). This draft extension to existing import policy can be applied to all *Pyrus* species and export regions/provinces of China previously and currently considered as specified in the scope of the assessment (Table 1).

The pest lists for pears from **Hebei, Shaanxi** and **Xinjiang** compiled from those provided by AQSIQ (AQSIQ 2004) and additional literature searches were categorised and compared to the pest lists in the previous **Ya** pear IRA (AQIS 1998) and the **Asian** pear review (AFFA, 2003). A combined pest list for **Ya** and **Asian** pears from **Hebei, Shandong** and **Shaanxi** Provinces and **Fragrant** pears from **Xinjiang** Uighur Autonomous Region is presented in Appendix 1.

Of the 157 potential pests associated with pears in China, 139 species had been considered previously either in the review (AFFA, 2003) and/or in the IRA (AQIS, 1998) and did not require further consideration. The remaining 18 pests were subject to further assessment (Appendix 2) to determine their quarantine status.

Further assessment determined that of the 18 additional pests, 13 were not present in Australia. Pests present in Australia (and not under official control) but either not present in Western Australia (WA) or under official control in WA were not considered further because under current import policy, no fresh pear fruit are allowed into WA. However, this may be subject to future review.

Of the 13 additional pests not present in Australia, only four, *Rhynchites heros* (Roel.) (Japanese pear weevil), *Alternaria yaliinficiens* Roberts (Chocolate spot of Ya Li pear), *Gymnosporangium sabinae* (Dicks) G. Winter (syn. *G. fuscum*) (European pear rust) and apple scar skin viroid (ASSVd) (pear rusty skin) were assessed as likely to be present on the fresh fruit pathway.

Apple scar skin viroid was not considered to have a feasible potential for establishment and spread as there are no known vectors of the viroid and there is no transmission by seed (Hurtt and Podleckis, 1995; Koganezawa, 1989; Podleckis, 2003). Consequently, this pathogen was not considered further.

Rhynchites heros, *Alternaria yaliinficiens* and *Gymnosporangium sabinae* did not undergo detailed risk assessment, as they are closely related to species that are already on the current quarantine pest list, *R. coreanus*, *A. gaisen* and *G. asiaticum* respectively. Both pathogens, *A. gaisen* and *G. asiaticum* and the arthropod, *R. coreanus* had been assessed (AQIS, 1998) as having the potential to establish or

spread in the pest risk analysis area, given that there are suitable hosts and suitable climatic conditions in Australia.

Both *R. heros* and *G. sabinae* also had a significant potential for economic consequences as they are recognised as economic pest species in pear-growing areas in other parts of the world.

Biosecurity Australia considers that at this stage there is no evidence to categorise *Alternaria yaliinficiens* (on **Ya** pears from Hebei Province) as a pathogen of economic significance that warrants specific risk management measures. A plant pathologist from Biosecurity Australia visited the export orchards for **Ya** pears and **Asian** pears in Hebei and Shandong Provinces in 2003 and did not find any *Alternaria* spp. present on any parts of the trees. Notwithstanding the absence of any evidence of risk, management measures that are in operation in the existing policy to manage the risk of *A. gaisen* would also manage any possible risk of *A. yaliinficiens.* These measures include surveillance and monitoring for the pathogen. Given the recent attention focused on *A. yaliinficiens*, Biosecurity Australia will continue to closely monitor the quarantine status of this pathogen and take appropriate action should this quarantine status change.

The absence of *Erwinia amylovora* (fire blight) in China was also taken into account in reassessing whether it should continue to be included as a quarantine pest for pear fruit from the regions considered in this draft extension to existing import policy. Given that there are no confirmed records of *E. amylovora* in China (CABI, 2004; van der Zwet, 1996) and the pest free status has been confirmed by surveys in China, fire blight has been removed as a quarantine pest for pears from China. However, it remains a condition of entry that AQSIQ immediately advise Biosecurity Australia and/or AQIS of any outbreak or change of status of any other potential quarantine pest such as fire blight in the pear production regions of **Hebei**, **Shandong**, **Shaanxi** Provinces and/or **Xinjiang** Uighur Autonomous Region.

Panonychus ulmi (European red spider mite) was removed from the quarantine pest list as it is present in Australia and not under official control, and therefore does not meet the criteria of a quarantine pest (AICN, 2004).

QUARANTINE PESTS OF CONCERN FOR PEARS FROM CHINA

The quarantine risk of pests of fresh pear fruit (**Ya** pear, **Asian** pear and **Fragrant** pear) from China (**Hebei, Shandong, Shaanxi** and **Xinjiang)** were similar to those identified in earlier assessments with the addition of *Rhynchites heros, Alternaria yaliinficiens* and *Gymnosporangium sabinae*. Table 5 lists the 40 pests of quarantine concern on all pears from China.

Table 5. Pests of quarantine concern on fresh pears in China by region (Hebei, Shandong, Shaanxi, Xinjiang) and species (Ya pears (*Pyrus bretschneideri*), Asian pears (*P. pyrifolia*) or Fragrant pears (*P. sp. nr. communis*)).

Text in bold indicates new pests (that is, not assessed previously).

Scientific name	Common name	Region (pear species)
Arthropods		
Acleris fimbriana (Thunberg & Becklin)	Fruit tree tortrix	Shandong (Ya pears); Hebei (Ya & Asian pears)
Acrobasis pirivorella (Matsumura) [syn. *Myelois pyrivorella* Matsumura; *Ectomyelois pyrivorella*; *Numonia pirivorella*]	Pear fruit moth	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears);
Adoxophyes orana (Fischer von Röslerstamm)	Summer fruit tortrix	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Aphanostigma iakusuiensis (Kishida)	Powdery pear aphid	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Bactrocera dorsalis (Hendel)	Oriental fruit fly	Shandong (Ya pears); Hebei (Ya pears); Xinjiang Uighur (Fragrant pears)
Cacopsylla pyrisuga (Forster)	Pear wood psylla	Shandong (Ya pears); Hebei (Ya pears)
Carposina sasakii Matsumura [syn. *Carposina niponensis*]	Peach fruit borer	Shandong (Ya & Asian pears); Hebei (Ya pears); Shaanxi (Ya & Asian pears)
Cydia inopinata (Heinrich) [syn. *Grapholitha inopinata*]	Manchurian fruit moth	Shandong (Ya pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Dolycoris baccarum Linnaeus	Sloe bug	Shandong (Ya pears); Hebei (Ya & Asian pears)
Euzophera pyriella Yang	Moth	Shandong (Ya pears); Hebei (Ya pears)
Grapholita molesta	Oriental fruit moth	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Halyomorpha picus (Fabricius)	Yellow-brown stink bug	Shandong (Ya pears); Hebei (Ya & Asian pears)
Holotrichia parallela (Motschulsky)	Large black chafer	Shandong (Ya pears); Hebei (Ya & Asian pears)
Holotrichia titanis Reitter	Brown chafer	Shandong (Ya pears); Hebei (Ya pears)
Hoplocampa pyricola Rohwer	Pear sawfly	Shandong (Asian pears); Hebei (Asian pears); Shaanxi (Ya & Asian pears)
Choristoneura longicellana (Walsingham) [syn. *Hoshinoa longicellana* (Walsingham)]	Common apple leafroller	Shandong (Ya pears); Hebei (Ya & Asian pears)
Leucoptera malifoliella (Costa) [syn. *Leucoptera scitella* Zeller]	Pear leaf miner	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears)
Lopholeucaspis japonica (Cockerell)	Pear white scale	Shandong (Ya pears); Hebei (Ya pears)
Lymantria dispar (Linnaeus)	Gypsy moth	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)

Scientific name	Common name	Region (pear species)
Pandemis heparana (Denis & Schiffermüller)	Apple brown tortrix	Shandong (Ya & Asian pears); Hebei (Ya pears)
Pseudococcus comstocki (Kuwana)	Comstock mealybug	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Rhynchites coreanus Kono	Japanese apple weevil/curculio	Shandong (Ya pears); Hebei (Ya & Asian pears)
Rhynchites foveipennis Fairmaire	Korean pear weevil/curculio	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Xinjiang Uighur (Fragrant pears)
***Rhynchites heros* Roel.**	**Japanese pear weevil**	**Hebei (Asian pears)**
Spilonota albicana Motschulsky	Eye spotted bud moth	Shandong (Ya pears); Hebei (Ya & Asian pears)
Spilonota lechriaspis Meyrick	Tip shoot tortrix	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Spilonota ocellana (Denis & Schiffermüller)	Moth	Shandong (Ya pears); Hebei (Ya pears)
Spulerina astaurota (Meyrick)	Pear barkminer	Shandong (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Stephanitis nashi Esaki & Takeya	Pear lace bug	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Tetranychus viennensis Zacher	Hawthorn (spider) mite	Shandong (Ya pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Urochela luteovaria Distant	Pear stink bug	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Fungi		
Alternaria gaisen Nagano	Black spot of Japanese pear	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
***Alternaria yaliinficiens* Roberts**	**Chocolate spot of Ya Li pear**	**Hebei (Ya pear)**
Gymnosporangium asiaticum Miyabe ex G. Yamada [syn. *G. haraeanum* Syd]	Japanese pear rust	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
***Gymnosporangium sabinae* (Dicks) G. Winter [syn. *G. fuscum* DC]**	**European pear rust**	**Shaanxi (Ya & Asian pears)**
Monilinia fructigena Honey	Brown rot	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Phomopsis fukushii Tanaka et Eudo	Japanese pear canker	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Physalospora piricola Nose [syn. *Botryosphaeria berengeriana* f. sp. *piricola*]	Physalospora canker	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Valsa ambiens (Pers. : Fr.) Fr.	Valsa canker	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears)
Venturia nashicola Tanaka & Yamamoto	Japanese pear scab	Shandong (Ya pears); Hebei (Ya pears); Shaanxi (Ya & Asian pears)

PEST RISK MANAGEMENT FOR THE IMPORTATION OF PEARS FROM CHINA

Pest risk management evaluates and selects options for measures to reduce the risk of entry, establishment or spread of quarantine pests assessed to have an unrestricted risk estimate above Australia's ALOP via the importation of commercially produced pear from China, i.e. fruit from commercial production sites and subjected to standard cultivation, harvesting and packing activities.

All of the arthropod pests of quarantine concern on **Asian** pears from **Hebei** Province, **Ya** and **Asian** pears from **Shaanxi** Province and **Fragrant** pears from **Xinjiang** can be managed using the risk management measures detailed in the **Ya** pear IRA (AQIS 1998) and the **Ya** pear protocol (amended January 2003). These include orchard control measures (orchard registration, pest surveillance and management programs, removal of alternate hosts and bagging of fruit) and joint pre-harvest and pre-clearance inspections.

Risk management for new quarantine pests

Issues relating to risk management and proposed conditions for the three new pests, Japanese pear weevil, chocolate spot of Ya Li pear and European pear rust, and the practice of bagging fruit in the orchard are discussed in further detail.

Japanese pear weevil (*Rhynchites heros*)

No additional measures are considered necessary for the Japanese pear weevil (*Rhynchites heros*). This pest can be managed using existing risk mitigation measures for the closely related weevil species, pear leaf weevil (*R. coreanus)* previously assessed for **Ya** pear (AQIS, 1998). These measures include orchard management and pre-clearance inspection.

Chocolate spot of Ya Li pear (*Alternaria yaliinficiens*)

Specific risk management measures are not warranted for chocolate spot of Ya Li pear (*Alternaria yaliinficiens*). Notwithstanding the absence of any evidence of risk, management measures that are in operation in the existing policy to manage the risk of *A. gaisen* would also manage any possible risk of *A. yaliinficiens*. These measures include surveillance and monitoring for the pathogen.

European pear rust *(Gymnosporium sabinae)*

No additional measures are considered necessary for managing European pear rust (*Gymnosporium sabinae* (syn. *G. fuscum*)). This disease can be managed using existing risk mitigation measures for the closely related disease, Japanese pear rust (*Gymnosporium asiaticum* (syn. *G. haraeanum))* previously assessed for **Ya** pear (AQIS, 1998). These measures include surveillance and monitoring for the pathogen and removal of alternate host *Juniperus* species from areas within 2 km of export orchards.

Bagging of fruit

Bagging of fruit for Australia has been practised since 1999 by export orchards under existing import conditions to ensure that **Ya** and **Asian** pear fruit are protected from a range of quarantine arthropod pests and pathogens in Hebei and Shandong including pear fruit moth (*Acrobasis pirivorella* (syn. *Myelois pyrivorella, Ectomyelois pyrivorella, Numonia pirivorella*)), brown rot (*Monilinia fructigena*), black spot (*Alternaria gaisen*), pear scab (*Venturia nashicola*), Japanese pear rust (*Gymnosporium asiaticum* (syn. *G. haraeanum)),* and physalospora canker (*Botryosphaeria berengeriana* f.sp. *piricola* (syn. *Physalospora piricola*)).

Biosecurity Australia recommends that this practice is maintained and extended to include Ya and Asian pears from Shaanxi where the quarantine pests listed above and European pear rust (*Gymnosporangium sabinae* (syn. *G. fuscum*)) are also present.

AQSIQ has indicated that it is not common agricultural practice to bag **Fragrant** pears in **Xinjiang** (AQSIQ, 2004) due to the smaller size, the physiology of ripening in this pear species and sun exposure during the ripening process to produce a blush of colour characteristic to Fragrant pears. Furthermore, bagging is purportedly not possible, as each bag acts as a sail in heavy winds, causing the fruit to drop (Podleckis, 2003). **Fragrant** pears, grown only in **Xinjiang** Uighur Autonomous Region in western China, are considered to have a lesser inherent pest risk because the pest complex and extreme climatic conditions there differ markedly to those in **Hebei**, **Shandong** and **Shaanxi** Provinces. Furthermore, **Xinjiang** is geographically isolated from the other pear production regions of China. The pear fruit moth and the diseases of brown rot, black spot, pear scab and physalospora canker for which bagging is an additional measure to minimise the risk from these pests in the other regions have not been reported on **Fragrant** pears in **Xinjiang**. Therefore, Biosecurity Australia considers that the requirement for individual fruit to remain bagged until processing at the packhouse is not necessary for **Fragrant** pears sourced from **Xinjiang** Uighur Autonomous Region.

DRAFT IMPORT CONDITIONS

Biosecurity Australia proposes revised phytosanitary conditions to address the risks posed by the quarantine pests identified on pears from China. These conditions are detailed in the draft revised import protocol for pear fruit from China to Australia on the following pages. The protocol is based on the import conditions for **Ya** pear fruit from China to Australia (AQIS 1998) as amended in January 2003 (Appendix 3), with additional changes as noted.

Draft Revised Import Protocol – Pear Fruit From China to Australia (April 2005)

Item 1. Permitted pear species and regions

This import protocol covers the following pear species grown in the specified regions of China:

1. **Ya** pears (*Pyrus bretschneideri*) from **Hebei, Shaanxi** and **Shandong** Provinces.
2. **Asian** pears (*Pyrus pyrifolia*) from **Hebei, Shaanxi** and **Shandong** Provinces.
3. **Fragrant** pears (*Pyrus* sp. nr. *communis*) from **Xinjiang** Uighur Autonomous Region.

Item 2. Registration and submission of information

Fruit of **Ya** pear, **Asian** pear and **Fragrant** pear 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 in each region are to be provided to DAFF by AQSIQ before commencement of trade each year.

Item 3. 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 of this protocol. These controls must provide regulatory assurance that export orchards are free from pests of quarantine concern to Australia. Details of the pest control program must be provided to DAFF by AQSIQ before commencement of trade. AQSIQ must provide a revised copy of the pest management program to the AQIS pre-clearance 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 to DAFF using a

standard reporting format. The pests and diseases monitored for must include fruit flies (*Bactrocera* spp.), brown rot (*Monilinia fructigena*), black spot of Japanese pear (*Alternaria gaisen*), Japanese pear scab (*Venturia nashicola*), Japanese pear rust (*Gymnosporangium asiaticum* (syn. *G. haraeanum*)), European pear rust (*Gymnosporangium sabinae* (syn. *G. fuscum*)) and physalospora canker (*Physalospora piricola* (syn. *Botryosphaeria berengeriana* f. sp. *piricola*)). Other pests and diseases not previously advised by AQSIQ to Biosecurity Australia and assessed by Biosecurity Australia must be notified immediately for appropriate action. If any other exotic pest or disease of quarantine concern to Australia is detected then Biosecurity Australia 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* (syn. *G. haraeanum*)) and European pear rust (*Gymnosporangium sabinae* (syn. *G. fuscum*)) within 2 km of registered orchards are removed. If either Japanese pear rust or European pear rust is found, fruit from the export orchards within 2km of the infected site will not be accepted into Australia.

Item 4. Fruit fly monitoring

The designated areas from which 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 cue lure, trimedlure and methyl eugenol.

AQSIQ must implement a fruit fly monitoring program for Tephritidae for the additional regions of Shaanxi and Xinjiang as well as continuing the fruit fly monitoring program already being undertaken in Hebei and Shandong Provinces. Additionally, a minimum of one methyl eugenol trap should be 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 (cue lure, trimedlure and methyl eugenol) is to be made available to the AQIS pre-clearance inspector.

AQSIQ will notify Biosecurity Australia 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 5. 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 (*Monilinia fructigena*) is detected in any designated export area, fruit from that export area will not be permitted entry into Australia.
2. Orchards infected with Japanese pear scab (*Venturia nashicola*) will not be permitted to export fruit.
3. If the level of black spot (*Alternaria gaisen*) exceeds a threshold of 0.5% after orchard inspection, those orchards will be excluded from the export program.

Item 6. Notification of unusual weather conditions

AQSIQ is to notify Biosecurity Australia immediately if unusual weather conditions occur resulting in brown rot, black spot or scab diseases.

Item 7. Bagging of fruit and storage

Bags must be placed over **Ya** and **Asian** pear fruit grown in **Shandong**, **Shaanxi** and **Hebei** 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 specific diseases and pests. 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.

Bagging is not required for **Fragrant** pears grown in **Xinjiang** Uighur Autonomous Region.

No fallen fruit is to be collected for export.

Export fruit must be clearly identifiable from domestic fruit.

Item 8. Pre-harvest inspection

Joint inspection by AQSIQ and the AQIS pre-clearance inspector before harvest must ensure that field control programs are efficacious. The inspection must ensure that bags (where required) 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 9. Pre-clearance inspection or equivalent measures

All packing houses must be registered by AQSIQ. Packing houses must be situated within the area subject to a fruit fly monitoring (trapping) program. 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 1-8, with bags intact (where required) 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 pear fruit packing period for export to Australia, no fruit for the domestic market is to be packed at the same time.

An inspection 'lot' is defined as a number of units of a single commodity, identifiable by homogeneity of composition, for example, forming part of a consignment. A 'consignment' is a number of boxes of fresh pears from China covered by one phytosanitary certificate shipped via one port in China to a designated port in Australia for one consignee on the same vessel on the same day.

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 pear fruit is free from pests or diseases of concern to Australia, leaves, twigs and soil. Culled fruit must 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 to species level, and forward this information 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, to species level, is completed and information sent to AQIS for approval.

If live pests are found, confirmation of the identity of the pest to species level is required. If the pest is identified and is listed on Attachment 1 of this protocol, as a pest of quarantine concern, then it will be actionable as follows:

- If the pest is also included on List 1 of this protocol, requiring risk mitigation measures, then the entire lot will be rejected; or

- If the pest is on Attachment 1 but not on List 1, then the exporter/grower will be given the option of re-conditioning the affected fruit in the entire lot and the lot will be subsequently re-inspected; or

- If the pest cannot be identified, then the entire lot will be rejected.

A registered orchard which has one rejection will be permitted to submit further 'lots' for the remainder of the season. However, if a second rejection occurs during the same season, then that orchard must be withdrawn from the Australian program.

If physalospora canker is found, then all fruit from orchards whose fruit comprised that 'lot' will be rejected.

Only clean, new cardboard boxes and cartons may be used for packing fruit. 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; or

2. fruit must be packed into cartons with screened ventilation holes; the screening mesh size must not exceed 1.6mm and not less than 0.16mm strand thickness; or

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

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 on 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 maintained to facilitate auditing of fruit during or after storage and that container doors are sealed after loading.

Item 10. Phytosanitary certification

Upon completion of fruit sampling and inspection, a master phytosanitary certificate is to be issued by 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 pear arrangement between AQSIQ and DAFF”.

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 11. Verification of consignment in Australia

AQIS reserves the right to examine relevant certification and seals at the port of arrival in Australia. AQIS may open the containers to verify the contents only. If the certification does not conform or the seals on the containers are damaged, AQIS reserves the right to have the 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 12. Visits by AQIS

An AQIS inspector(s) must visit China in each year of trade for pre-clearance inspection, both in the field and packing house, unless otherwise agreed by DAFF and AQSIQ on a region by region basis. All new export regions must undergo field inspection during harvest in the first year of trade. The Chinese side will pay fees for the AQIS officer to monitor the implementation of importation protocols, surveys and/or pre-clearance inspection.

Item 13. Review of requirements

DAFF reserves the right to review the agreement at any time if this is deemed necessary.

If brown rot, black spot, chocolate spot or scab is intercepted on imported fruit, then DAFF reserves the right to implement remedial measures as deemed necessary before trade commences next season.

Attachment 1 – Quarantine pests of fresh pear fruit from China

Scientific name	Common name	Region (pear species)
Arthropods		
Acleris fimbriana (Thunberg & Becklin)	Fruit tree tortrix	Shandong (Ya pears); Hebei (Ya & Asian pears)
Acrobasis pirivorella (Matsumura) [syn. *Myelois pyrivorella* Matsumura; *Ectomyelois pyrivorella*; *Numonia pirivorella*]	Pear fruit moth	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears);
Adoxophyes orana (Fischer von Röslerstamm)	Summer fruit tortrix	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Aphanostigma iakusuiensis (Kishida)	Powdery pear aphid	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Bactrocera dorsalis (Hendel)	Oriental fruit fly	Shandong (Ya pears); Hebei (Ya pears); Xinjiang Uighur (Fragrant pears)
Cacopsylla pyrisuga (Forster)	Pear wood psylla	Shandong (Ya pears); Hebei (Ya pears)
Carposina sasakii Matsumura [syn. *Carposina niponensis*]	Peach fruit borer	Shandong (Ya & Asian pears); Hebei (Ya pears); Shaanxi (Ya & Asian pears)
Cydia inopinata (Heinrich) [syn. *Grapholitha inopinata*]	Manchurian fruit moth	Shandong (Ya pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Dolycoris baccarum Linnaeus	Sloe bug	Shandong (Ya pears); Hebei (Ya & Asian pears)
Euzophera pyriella Yang	Moth	Shandong (Ya pears); Hebei (Ya pears)
Grapholita molesta	Oriental fruit moth	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Halyomorpha picus (Fabricius)	Yellow-brown stink bug	Shandong (Ya pears); Hebei (Ya & Asian pears)
Holotrichia parallela (Motschulsky)	Large black chafer	Shandong (Ya pears); Hebei (Ya & Asian pears)
Holotrichia titanis Reitter	Brown chafer	Shandong (Ya pears); Hebei (Ya pears)
Hoplocampa pyricola Rohwer	Pear sawfly	Shandong (Asian pears); Hebei (Asian pears); Shaanxi (Ya & Asian pears)
Choristoneura longicellana (Walsingham) [syn. *Hoshinoa longicellana* (Walsingham)]	Common apple leafroller	Shandong (Ya pears); Hebei (Ya & Asian pears)
Leucoptera malifoliella (Costa) [syn. *Leucoptera scitella* Zeller]	Pear leaf miner	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears)
Lopholeucaspis japonica (Cockerell)	Pear white scale	Shandong (Ya pears); Hebei (Ya pears)
Lymantria dispar (Linnaeus)	Gypsy moth	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Pandemis heparana (Denis & Schiffermüller)	Apple brown tortrix	Shandong (Ya & Asian pears); Hebei (Ya pears)

Scientific name	Common name	Region (pear species)
Arthropods		
Pseudococcus comstocki (Kuwana)	Comstock mealybug	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Rhynchites coreanus Kono	Japanese apple weevil/curculio	Shandong (Ya pears); Hebei (Ya & Asian pears)
Rhynchites foveipennis Fairmaire	Korean pear weevil/curculio	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Xinjiang Uighur (Fragrant pears)
Rhynchites heros Roel.	Japanese pear weevil	Hebei (Asian pears)
Spilonota albicana Motschulsky	Eye spotted bud moth	Shandong (Ya pears); Hebei (Ya & Asian pears)
Spilonota lechriaspis Meyrick	Tip shoot tortrix	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Spilonota ocellana (Denis & Schiffermüller)	Moth	Shandong (Ya pears); Hebei (Ya pears)
Spulerina astaurota (Meyrick)	Pear barkminer	Shandong (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Stephanitis nashi Esaki & Takeya	Pear lace bug	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Tetranychus viennensis Zacher	Hawthorn (spider) mite	Shandong (Ya pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Urochela luteovaria Distant	Pear stink bug	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Fungi		
Alternaria gaisen Nagano	Black spot of Japanese pear	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Alternaria yaliinficiens Roberts	Chocolate spot of Ya Li pear	Hebei (Ya pears)
Gymnosporangium asiaticum Miyabe ex G. Yamada [syn. *G. haraeanum* Syd]	Japanese pear rust	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Gymnosporangium sabinae (Dicks) G. Winter [syn. *G. fuscum* DC]	European pear rust	Shaanxi (Ya & Asian pears)
Monilinia fructigena Honey	Brown rot	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Phomopsis fukushii Tanaka et Eudo	Japanese pear canker	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Physalospora piricola Nose [syn. *Botryosphaeria berengeriana* f. sp. *piricola*]	Physalospora canker	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears); Shaanxi (Ya & Asian pears)
Valsa ambiens (Pers. : Fr.) Fr.	Valsa canker	Shandong (Ya & Asian pears); Hebei (Ya & Asian pears)
Venturia nashicola Tanaka & Yamamoto	Japanese pear scab	Shandong (Ya pears); Hebei (Ya pears); Shaanxi (Ya & Asian pears)

List 1: Quarantine pests of fresh pear fruit from China requiring risk management measures.

These pests, a sub-set of Attachment 1, require risk mitigation measures as outlined in Item 3.

Arthropods

1. *Acrobasis pirivorella* (Matsumura) [syn. *Myelois pirivorella* Matsumura; *Ectomyelois pyrivorella*; *Numonia pirivorella*], Pear fruit moth
2. *Adoxophyes orana* (Fischer von Röslerstamm), Summer fruit tortrix
3. *Aphanostigma iakusuiensis* (Kishida), Powdery pear aphid
4. *Bactrocera dorsalis* (Hendel), Oriental fruit fly
5. *Cacopsylla pyrisuga* (Forster), Pear wood psylla
6. *Carposina sasakii* Matsumura [syn. *Carposina niponensis*], Peach fruit borer
7. *Cydia inopinata* (Heinrich) [syn. *Grapholitha inopinata*], Manchurian fruit moth
8. *Euzophera pyriella* Yang, Moth
9. *Grapholita molesta* Busck, Oriental fruit moth
10. *Lymantria dispar* (Linnaeus), Gypsy moth
11. *Pseudococcus comstocki* (Kuwana), Comstock mealybug
12. *Rhynchites coreanus* Kono, Pear leaf weevil/curculio
13. *Rhynchites heros* Roel., Japanese pear weevil
14. *Tetranychus viennensis* Zacher, Hawthorn red spider mite

Fungi

15. *Alternaria gaisen* Nagano, Black spot of Japanese pear
16. *Physalospora piricola* (syn. *Botryosphaeria berengeriana* f. sp. *piricola*), Physalospora canker
17. *Gymnosporangium asiaticum* Miyabe ex. G. Yamada, Japanese pear rust [syn. *G. haraeanum* Syd]
18. *Gymnosporangium sabinae* (Dicks) G. Winter [syn. *G. fuscum* DC], European pear rust
19. *Monilinia fructigena* Honey, Brown rot
20. *Venturia nashicola* Tanaka & Yamamoto, Japanese pear scab

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APPENDICES

APPENDIX 1: COMPLETE LIST OF PESTS ASSOCIATED WITH PEARS IN CHINA (ALL PROVINCES AND REGIONS UNDER CONSIDERATION) INCLUDING SPECIES CONSIDERED IN PREVIOUS ASSESSMENTS (AQIS 1998; AFFA 2003).

New pests not considered in previous assessments are listed in **bold** text, and are further categorised in Appendix 2.

Text in [square brackets] indicate the synonym used for that species (biological entity) in previous assessments or in other documentation.

[1] New areas under assessment.

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
ARTHROPODA						
Acarina (mites)						
***Brevipalpus ruber* [*Cenopalpus rubber* (Waintein) in (AQSIQ, 2004)]**	**False spider mite**			**Yes (AQSIQ, 2004)**		**No**
Bryobia rubrioculus Scheuten	Brown apple mite	Yes (AQIS, 1998)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
***Epitrimerus pyri* (Nalepa 1891) [*Epitrimerus pirifoliae* Keifer in (AQSIQ, 2004)]**	**Pear rust mite**		**Yes (AQSIQ, 2004)**			**No**
Eriophyes pyri Pangenst.	Pear leaf blister mite		Yes (AQSIQ, 2004)		Yes (AFFA, 2003)	Yes (AFFA, 2003)
***Tetranychus kanzawai* Kishida**	**Kanzawa spider mite**			**Yes (Podleckis, 2003)**		**No**
Tetranychus urticae Koch	Two-spotted spider mite		Yes (AQSIQ, 2004)		Yes (AFFA, 2003)	Yes (AFFA, 2003)
Tetranychus viennensis Zacher	Hawthorn (spider)	Yes (AQIS, 1998;	Yes (AQSIQ,		Yes (AQIS, 1998)	Yes (AQIS,

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
	mite	AQSIQ, 2004)	2004)			1998)
Coleoptera (beetles)						
Agrilus mali Matsumura	Apple wood borer	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Anomala corpulenta Motschulsky	Scarab beetle	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Anoplophora glabripennis Motschulsky	Asian long-horned beetle	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Apriona germarii (Hope)	Longhorn stem borer	Yes (AQSIQ, 2004)			Yes (AFFA, 2003)	Yes (AFFA, 2003)
Aromia bungii Faldermann	Red-necked longicorn	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Asias halodendri (Pallas)	longicorn	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Byctiscus betulae (L.)	Birch attelabid	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Bacchisa fortunei Thomson [*Chreonoma fortunei* (Thomson) in (CIQ SA, 2000)]	Pear borer	Yes (AQIS, 1998)	Yes (CIQ SA, 2000)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Chrysobothris succedanea Saunders	Six-spotted buprestid				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Holotrichia parallela Motschulsky	Large black chafer	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Holotrichia titanis Reitter	Brown chafer	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Lampra bellula Lewis	Jewel beetle	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Lampra limbata Gebler [*Lampia limbate* Gebler in (AQSIQ, 2004)]	Golden Jewel beetle	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Oxycetonia jucunda (Faldermann)	Citrus flower chafer	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Popillia quadriguttata F.	Chinese rose beetle	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Coleoptera (beetles)						
Potosia (Liocola) brevitarsis (Lewis) [*Potosia brevitarsis* in (AQIS, 1998)]	White spotted flower chafer	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Proagopertha lucidula Faldermann	Lucidula chafer	Yes (AQIS, 1998; AQSIQ, 2004))	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Rhynchites coreinus Kono [*R. coreanus* in (AQIS, 1998)]	Pear leaf weevil/curculio	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Rhynchites foveipennis Fairmaire	Korean pear weevil/curculio	Yes (AQIS, 1998)		(AQSIQ, 2004)	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
***Rhynchites heros* Roelofs**	**Japanese pear weevil**	**Yes (Chao & Lee, 1966)**				**No**
Serica orientalis Motschulsky [*Maladera orientalis* in (AFFA, 2003), (AQIS, 1998)]	Smaller velvet chafer	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Diptera (true flies; mosquitoes)						
Bactrocera dorsalis (Hendel)	Oriental fruit fly	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Hemiptera (aphids; leafhoppers; mealybugs; psyllids; scales; true bugs; whiteflies)						
Anuraphis piricola Okamoto & Takahashi	Pear round-tailed aphid	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Aphanostigma iaksuiense (Kishida) [*Aphanostigma jakusuinse* Kishida in (AQSIQ, 2004)]	Powdery pear aphid	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Aphis spiraecola Patch [*Aphis citricola* Van der Goot in (AQSIQ, 2004)]	Green citrus aphid	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Cacopsylla pyrisuga (Förster)	Pear wood psylla	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
***Cacopsylla chinensis* (Li & Yang 1981) [*Cacopsylla chinenis* (Yang et Li 1981) in (AQSIQ, 2004)]**	**Pear psyllid**			**Yes (AQSIQ, 2004)**		**No**
Ceroplastes japonicus Green	Japanese wax scale	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Hemiptera (aphids; leafhoppers; mealybugs; psyllids; scales; true bugs; whiteflies)						
Ceroplastes rubens Maskall	Pink wax scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Coccus hesperidum hesperidum L. [*Coccus hesperidum* in (AQIS, 1998)]	Soft brown scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Tettigella viridis L. [*Cicadella viridis* in (AFFA, 2003), (AQIS, 1998)]	Green leafhopper	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Cryptotympana pustulata (Fabricius) [*Cryptotympana atrata* F. in (AFFA, 2003)]	Blackish cicada	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Didesmococcus coreanus Borchs	Peach scale	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Dolycoris baccarum L.	Sloe bug	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Drosicha corpulenta (Kuwana)	Giant mealybug		Yes (AQSIQ, 2004)		Yes (AFFA, 2003)	Yes (AFFA, 2003)
Empoasca flavescens (F.)	Small green leafhopper	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Erthesina fullo (Thunberg) [*Erythesina fullo* in (AQIS, 1998)]	Yellow spot stink bug	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
***Erythroneura apicalis* Nawa**	**Grape leafhopper**		**Yes (CIQ SA, 2000)**			**No**
Eulecanium kunoensis Kuwana [*Eulecanium kunoense* (Kwana) in (AFFA, 2003), *Coccus kunoensis* in (AQIS, 1998)]	Soft scale	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Halyomorpha picus (Fabricius)	Yellow-brown stink bug	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Icerya purchasi Maskell	Cottony cushion scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Lepidosaphes ulmi L.	Mussel scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Hemiptera (aphids; leafhoppers; mealybugs; psyllids; scales; true bugs; whiteflies)						
Lopholeucapis japonica (Cockerell)	Pear white scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Lygocoris lucorum (Meyer)	Small green plant bug				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Myzus persicae Sulzer	Green peach aphid	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Nezara viridula L.	Green vegetable bug	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
***Parlatoria oleae* (Colvée)**	**Olive Parlatoria scale**			**Yes (AQSIQ, 2004)**		**No**
Parlatoria pergandii Comstock	Chaff scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Platypleura kaempferi (Fabricius)	Kaempfer cicada				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Pseudaonidia duplex (Cockerell)	Camphor scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Pseudaulacaspis pentagona (Targioni Tozzetti) [*Pseudaulcaspis pentagona* in (AQIS, 1998)]	Mulberry scale	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Pseudococcus comstocki Kuwana	Comstock mealybug	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Psylla chinensis Yang & Li	Chinese pear psyllid	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Quadraspidiotus perniciosus Comstock [*Diaspidiotus perniciosus* Comstock in (AQIS, 1998)]	California scale	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
***Sappaphis* sp.**	**Hairy aphid**		**Yes (AQSIQ, 2004)**			**No**
Schizaphis piricola (Matsumura)	Pear yellow aphid	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Hemiptera (aphids; leafhoppers; mealybugs; psyllids; scales; true bugs; whiteflies)						
***Sphaerolecanium prunastri* Boyer de Fonscolombe**	**Blackthorn scale**	**Yes (CABI, 2004)**				**No**
Stephanitis nashi Esaki & Takeya	Pear lace bug	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Urochela luteovaria Distant	Pear stink bug	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Hymenoptera (ants; bees; wasps)						
Hoplocampa pyricola Rohwer	Pear sawfly	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Janus gussakovskii Maa	Stem girdler	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Janus piri Okamoto & Muramatsu	Pear stem sawfly	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Vespa mandarinia Smith	Paper wasp	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Lepidoptera (butterflies; moths)						
Acleris fimbriana Thunberg	Fruit tree tortrix	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Acrobasis pirivorella (Matsumura) [*Nephiopteryx pirivorella* for Hebei and *Myelois pirivorella* for Shaanxi in (AQSIQ, 2004); *Ectomyelois pyrivorella* in (AQIS, 1998)]	Pear fruit moth	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Acrocercops astaurota Meyrick [*Acrocercops astanrola* Meyrick in AQSIQ, 2004); *Spulerina astaurota* in (AQIS, 1998)]	Pear bark miner	Yes (AQIS, 1998)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Acronicta rumicis (Linnaeus)	Knotgrass moth			Yes (AQSIQ, 2004)	Yes (AFFA, 2003)	Yes (AFFA, 2003)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Lepidoptera (butterflies; moths)						
Acronycta increta Hampson [*Acronicta (Trianea) intermedia* Warren in (AFFA, 2003); *Acronicta increta* in (AQIS, 1998)]	Raspberry bud moth	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Actias selene ningpoana Felder	Green actias moth	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Adoxophyes orana (Fischer von Roslerstamm)	Summer fruit tortrix	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Amsacta lactinea (Cramer)	Red tiger moth	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
***Apocheima cinerarium* subsp. *piri* Yang**	**Sub-species of "Popular looper"**	**Yes (AQSIQ, 2004)**	**Yes (AQSIQ, 2004)**	**Yes (AQSIQ, 2004)**		**No**
Apocheima cinerarius Erschoff	Popular looper	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Aporia crataegi L.	Black-veined white	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Archips xylosteana (L.)	Apple variegated tortrix	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Blastodacna pyrigalla (Yang)	Pear fruit borer	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Carposina sasakii Matsumura [*Carposina niponensis* Walsingham in (AQSIQ, 2004)]	Peach fruit borer	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Choristoneura longicellana (Walsingham) [*Hoshinoa longicellana* in (AQIS, 1998)]	Common apple leaf roller	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Clania variegata Snellen	Cotton bag worm				Yes (AFFA, 2003)	Yes (AFFA, 2003)
***Cydia pomonella* (L.) [*Laspeyresia pomonella* (L.) in (AQSIQ, 2004)]**	**Codling moth**			**Yes (AQSIQ, 2004)**		**No**

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Lepidoptera (butterflies; moths)						
Dichocrocis punctiferalis Guenée [*Conogethes punctiferalis* in (AFFA, 2003), (AQIS, 1998)]	Yellow peach moth	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Euproctis similis (Fuessly) [*Prothesia similis* (Fueszly) in (AQSIQ, 2004)]	Mulberry tussock moth	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Euzophera pyriella Yang [*Euiophena pyrillsa* Rany in (AQSIQ, 2004)]		Yes (AQIS, 1998)		Yes (AQSIQ, 2004)	(AQIS, 1998)	Yes (AQIS, 1998)
Gastropacha quercifolia L.	Lappet, snout moth	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Grapholitha molesta Busck	Oriental fruit moth	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)	Yes (AQSIQ, 2004)	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Grapholitha inopinata Heinrich [*Cydia inopinata* in (AQIS, 1998)]	Manchurian fruit moth	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Helicoverpa armigera (Hubner)	Cotton bollworm				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Illiberis pruni Dyar	Pear leaf worm	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Latoia consocia (Walker) [*Parasa consocia* (Walker) in (AFFA, 2003), (AQIS, 1998)]	Green cochlid	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Latoia hilarata (Staudinger) [*Parasa hilarata* in (AQIS, 1998)]	Stinging caterpillar; nettle grub	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Leucoptera scitella Zeller [*Leucoptera malifoliella* in (AFFA, 2003), (AQIS, 1998)]	Pear leaf miner	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Phyllonorycter ringoniella (Matsumura) [*Lithocolletis ringoniella* Matsumura in (AQSIQ, 2004)]	Apple leaf miner	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Lepidoptera (butterflies; moths)						
Lymantria dispar L.	Gypsy moth	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Malacosoma neustria testacea Matschulsky [*Malacosoma neustria* in (AQIS, 1998)]	Tent caterpillar	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Marumba gaschukewitschi (Bremer & Grey)	Peach horn worm	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Militene bifidella Leech [*Conobathra bifidella* in (AQIS, 1998)]	Lump insect	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Monema flavescens Walker [*Cnidocampa flavescens* Walker in (AQSIQ, 2004)]	Oriental fruit moth	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Odites leucostola Meyrick [*Oides leucostolk* Meyrick in (AQSIQ, 2004)]	Lecithocerid moth	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Odonestis pruni L.	Apple caterpillar	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
***Oraesia emarginata* (F.) [*Oraesia emaryinata* Guenée in (AQSIQ, 2004)]**	**Fruit piercing moth**		**Yes (AQSIQ, 2004)**			**No**
***Oraesia excavata* (Butler)**	**Fruit piercing moth**		**Yes (AQSIQ, 2004)**			**No**
Pandemis heparana Denis & Schiffermuller	Apple brown tortrix	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Phalera flavescens Bremer & Grey	Cherry caterpillar	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Phlossa conguncta Walker	Slug caterpillar	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Lepidoptera (butterflies; moths)						
Sinitinea pyrigalla Yang [*Blastodacna pyrigalla* in (AFFA, 2003), (AQIS, 1998)]	Pear fruit borer	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Spilonota albicana (Motschulsky)	Eye spotted bud moth	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Spilonota lechriaspis Meyrick	Tipshoot tortrix	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Spilonota ocellana F.	Eye spotted bud moth	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Synanthedon hector (Butler)	Cherry tree borer	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Telphusa chloroderces Meyrick	Black star leaf roller	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Thosea sinensis (Walker)	Nettle grub	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
NEMATODA						
Meloidogyne spp.	Root knot nematode				Yes (AFFA, 2003)	Yes (AFFA, 2003)
PATHOGENS						
Bacteria						
Rhizobium radiobacter (Beijerinck & Van Delden) Young et al.	Crown gall				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Fungi						
Alternaria alternata (Fr.) Keissl.	Alternaria leaf spot	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Alternaria gaisen Nagano [*Alternaria kikuchiana* in (AQIS, 1998)]	Black spot of Japanese pear	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
***Alternaria yaliinficiens*Roberts**	**Chocolate spot of Ya Li pear**	**Yes (Roberts, 2005)**				**No**
Armillaria mellea (Vahl) P. Kumm.	Armillaria root rot	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Fungi						
Armillaria tabescens (Scop. ex Fr.) Sing	Armillaria root rot	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Botryosphaeria dothidea (Mougeot ex E.M. Fries) Cesati & de Notaris					Yes (AFFA, 2003)	Yes (AFFA, 2003)
Botryosphaeria obtusa	Black rot	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Botrytis cinerea (de Bary) Whetzel	Botrytis rot	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Colletotrichum gloeosporioides (Penz.) Sacc. (Anamorph). Teleomorph = *Glomerella cingulata* (Stonem.) Spauld. & Schrenk	Anthracnose	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Corticium rolfsii Curzi	Collar rot				Yes (AFFA, 2003)	Yes (AFFA, 2003)
***Cytospora carphosperma* Fr. [*Cytospora carphosperma* Sacc. in (AQSIQ, 2004)]**	**Canker**			**Yes (AQSIQ, 2004)**		**No**
Diaporthe ambigua Nitschke	Pear canker	Yes (AQIS, 1998)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Fomes spp.					Yes (AFFA, 2003)	Yes (AFFA, 2003)
Fomes truncatoporaus (Lloyd) Teng (1963) [*Momes truncatospora* in (AQSIQ, 2004)]	Heart rot	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Gloeodes pomigena (Schwein.) Colby	Apple blotch disease				Yes (AFFA, 2003)	Yes (AFFA, 2003)
***Gymnosporangium sabinae* (Dicks) G. Winter (syn: *Gymnosporangium fuscum* DC.)**	**European pear rust**		**Yes (Wang & Guo, 1985)**			**No**
Gymnosporangium asiaticum Miyabe ex.G.Yamada [syn: *Gymnosporangium haraeanum* Syd.]	Japanese pear rust	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Fungi						
Helicobasidium mompa Tanaka	Pear tree violet root rot				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Monilinia fructigena (Aderh. & Ruhl) Honey	Brown rot	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
***Mycosphaerella pomacearum* (Cord.) Sacc.**	**Leaf spot**	**Yes (Tai, 1979)**				**No**
Mycosphaerella sentina [*Mycosphaerella pyri* (Auersw.) Boerema in (AFFA, 2003), (AQIS, 1998)]	Pear leaf/fruit spot	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Penicillium expansum (Link) Thom.	Blue mould of apple	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Phomopsis fukushii Tanaka & Eudo	Japanese pear canker	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Phyllactinia corylea (Pers.) Karst	Powdery mildew	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Phyllactinia pyri (Cast) Homma [*Phyllactinia guttata* f. sp. *pyri* in (AFFA, 2003)]	Powdery mildew of pear	Yes (AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AFFA, 2003)	Yes (AFFA, 2003)
Physalospora piricola Nose [*Botryosphaeria berengeriana* f. sp. *piricola* in (AFFA, 2003), (AQIS, 1998)]	Physalospora canker	Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Podosphaera leucotricha (Ell. & Ev.)	Powdery mildew of apple	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Rhizopus stolonifer (Ehrenb. ex Fr.) Vuill	Rhizopus rot	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Rosellinia necatrix Prill.	Dematophora root rot				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Schizothyrium pomi (Mont.) v. Arx	Fly speck				Yes (AFFA, 2003)	Yes (AFFA, 2003)
Trichothecium roseum (Bull) Link	Fruit rot	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998)	Yes (AQIS, 1998)

Scientific name	Common name(s)	Distribution in China				Assessed previously
		Hebei	Shaanxi[1]	Xinjiang[1]	Shandong	
Fungi						
Valsa ambiens (Pers.) Fr.	Valsa canker	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Valsa ceratosperma (Tode) Maire	Valsa canker	Yes (AQIS, 1998)			Yes (AQIS, 1998)	Yes (AQIS, 1998)
Venturia pirina Aderh.	Pear scab	Yes (AQIS, 1998; AQSIQ, 2004)			Yes (AQIS, 1998; AQSIQ, 2004)	Yes (AQIS, 1998)
Venturia nashicola Tanaka & Yamamoto	Japanese pear scab	Yes (AQIS, 1998)	Yes (AQSIQ, 2004)		Yes (AQIS, 1998)	Yes (AQIS, 1998)
Viroid						
Apple scar skin viroid (ASSVd)	**Pear rusty skin disease**	**Yes (Shamloul *et al*., 2003)**				**No**

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APPENDIX 2: PEST CATEGORISATION FOR ADDITIONAL PEARS AND REGIONS IN CHINA NOT PREVIOUSLY CONSIDERED IN EARLIER IRA (AQIS, 1998) OR REVIEW (AFFA, 2003).

Scientific name	Common name	Present in China	Present in Australia	Associated with fresh pear fruit pathway	Consider further?
ARTHROPODS					
Apocheima cinerarius subsp. *pyri* Yang [Lepidoptera: Geometridae]	Sub-species of "Popular looper"	Yes - Hebei & Shaanxi (AQSIQ, 2004)	No- (Nielsen *et al*., 1996)	Not on pathway (Miyamoto, 1994, cited in Cave & Lightfield, 1997)	No
Brevipalpus ruber Wainstein, 1960. [Acari:Tenuipalpidae] [syn. *Cenopalpus ruber*].	False spider mite	Yes - Xinjiang (AQSIQ, 2004)	No - (Halliday, 2000)	Not on pathway (China, 1994, cited in Cave & Lightfield, 1997)	No
Cacopsylla chinenis (Li & Yang, 1981) [Hemiptera: Psyllidae]	Pear psyllid	Yes- Xinjiang (AQSIQ, 2004)	No - (Hollis, 2002)	No - adults and nymphs are on young shoots, young fruit, leaves and branches. Females lay 300 eggs each on leaves and shoots (Liu, 2004).	No
Cydia pomonella (L). [Lepidoptera: Tortricidae] [Syn. *Laspeyresia pomonella* Linnaeus *Carpocapsa pomonella* Linnaeus *Carpocapsa pomonana* Treitschke *Enarmonia pomonella* Linnaeus *Phalaena pomonella* Linnaeus *Grapholitha pomonella*]	Codling moth	Yes - Xinjiang (AQSIQ, 2004)	Yes – (Nielsen *et al*, 1996); eradicated from WA (Poole, 2004)	Yes – eggs are laid singly on developing fruits, larvae feed and develop within fruit (CABI, 2004)	No – fresh pear fruit is not allowed into WA under current State legislation.
Epitrimerus pyri (Nalepa, 1891) [Acari: Eriophyidae] [syn. *Tegonotus piri* Nalepa *Trimerius piri* Nalepa *Epitrimerus piri* *Epitrimerus pirifoliae*]	Pear rust mite	Yes – Shaanxi (AQSIQ, 2004)	Yes - Cobram, Goulburn Valley, VIC (Knihinicki & Boczek, 2002). [2]		No
Erythroneura apicalis Nawa [Hemiptera: Ciccadellidae]	Grape leafhopper	Yes – Shaanxi (CIQ SA, 2000)	No – (Fletcher, 2000)	No – *Erythroneura* spp. are petiole or leaf feeders (Valley & Wheeler, 1985; Jensen *et al*., 1969)	No

Scientific name	Common name	Present in China	Present in Australia	Associated with fresh pear fruit pathway	Consider further?
Oraesia emarginata (Fabricius) [Lepidoptera: Noctuidae]	Fruit-piercing moth	Yes – Shaanxi (AQSIQ, 2004)	Yes – (Nielsen *et al* 1996)	No - both larvae and adults of noctuid moths are inactive during the day and hide amongst the foliage or leaf litter. During the night, adults usually feed on overripe or fermenting fruit (Common, 1990).	No
Oraesia excavata (Butler) [Lepidoptera: Noctuidae]	Fruit-piercing moth	Yes – Shaanxi (AQSIQ, 2004)	No - (Nielsen *et al.*, 1996)	No - both larvae and adult nouctuid moths are inactive during the day and hide amongst the foliage or leaf litter. During the night, adults usually feed on overripe or fermenting fruit (Common, 1990).	No
Parlatoria oleae (Colvée) [Hempitera: Diaspididae]	Olive Parlatoria scale	Yes – Xinjiang (Chen, 2003)	Yes – limited to NE coastal QLD (Donaldson & Tsang, 2004). Not in WA (Poole, 2004)	Yes – attacks fruit (Chen, 2003).	No – fresh pear fruit is not allowed into WA under current State legislation.
Rhynchites heros Roel. [Coleoptera: Rhynchitidae]	Japanese pear weevil	Yes – Hebei (Chao & Lee, 1966)	No – (Zimmerman, 1994)	Yes –females oviposit in the fruit of young pear (Hanson, 1963).	**Yes**
Sappahis sp. [Hempitera: Aphididae]	Hairy aphid	Yes – Shaanxi (AQSIQ, 2004)	No – (Blackman & Eastop, 2000)	No - all stages of *Sappaphis piri* feed on undersides of leaves, not the fruit (Blackman & Eastop, 2000)	No

Scientific name	Common name	Present in China	Present in Australia	Associated with fresh pear fruit pathway	Consider further?
Sphaerolecanium prunastri Boyer de Fonscolombe [Hemiptera: Coccidae] [syn. *Coccus prunastri* Boyer de Fonscolombe *Lecanium blanchardii* Targioni Tozzetti *Lecanium prunastri* Signoret *Lecanium* (*Eulecanium*) *prunastri* Cockerell *Eulecanium prunastri* Fernald *Sphaerolecanium prunastri* Šulc *Eulecanium piligerum* Leonardi *Lecanium* (*Sphaerolecanium*) *prunastri* Šulc *Spheralecanium prunastri* Tschorbadjiew]	Blackthorn scale	Yes – Hebei (Tao, 1999)	No – (CABI, 2004; Ben-Dov *et al*, 2002)	No – completes whole lifecycle on trunk, branches or twigs of host tree (CABI, 2004).	No
Tetranychus kanzawai Kishida 1927 [Acarina:Tetranychidae] [syn. *Tetranychus hydrangeae* Pritchard & Baker]	Kanzawa spider mite	Yes – Xinjiang (Podleckis, 2003)	Yes – (Halliday, 2000)		No
PATHOGENS					
Alternaria yaliinficiens Roberts	Chocolate spot of Ya Li pear	Yes – Hebei (Roberts, 2005)	No – (Roberts, 2005)	Yes – disease is found on fruit of Ya Li pear (Roberts, 2005).	**Yes**
Apple scar skin viroid [Pospiviroidae]	Pear fruit crinkle; pear rusty skin disease	Yes – Hebei (Shamloul *et al*, 2003)	No - (Koganezawa, 1989)	Yes – viroid can be found in the fruit pulp, but not in the seeds (Hurtt and Podleckis, 1995).	**Yes**
Cytospora carphosperma Fr. [Ascomycota: Ascomycetes]	Canker	Yes – Xinjiang (AQSIQ, 2004)	No – (Shivas, 1989; Farr, 2004)	Not on pathway (Tai, 1979).	No
Gymnosporangium sabinae (Dicks) G. Winter [Uredinales: Pucciniaceae]	European pear rust	Yes – Shaanxi (Wang & Guo, 1985)	No - (Shivas, 1989)	Yes – fruit may become infected (CABI, 2004)	**Yes**
Mycosphaerella pomacearum (Cor.) Sacc. [Dothideales: Dothideaceae]	Leaf spot	Yes – Hebei (Tai, 1979)	No - (Shivas, 1989)	No – symptoms of *Mycosphaerella* infection occur on the leaves, especially dead leaves, of their hosts (Jones and	No

Scientific name	Common name	Present in China	Present in Australia	Associated with fresh pear fruit pathway	Consider further?
				Aldwinckle, 1990).	

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APPENDIX 3 : AMENDED IMPORT PROTOCOL – YA PEAR FRUIT FROM CHINA TO AUSTRALIA (January 2003)

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 cue lure, 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, cue lure, 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.