

**Importation of Fragrant and Ya Pear Fruit
from China
into the United States**

A Supplemental Pest Risk Assessment

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A. Introduction

This pest risk assessment (PRA) was conducted by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Biological Assessment and Taxonomic Support Staff (USDA, APHIS, PPQ, BATS) on Ya pears, *Pyrus x bretschneideri* and fragrant pears, *P. ussuriensis* from China. The results are expressed qualitatively (High or Low), rather than quantitatively (probabilities or frequencies). The risk assessment methodology and rating criteria can be found in the document: *Pathway-Initiated Pest Risk Assessment: Guidelines for Qualitative Assessments* (USDA, 1995) (available from the authors of this risk assessment and on the Internet at <http://www.aphis.usda.gov/ppq/bats/bant>). Authority for APHIS to regulate plant pests/plant products is derived from the Plant Quarantine Act of 1912, the Plant Pest Act of 1957, the Noxious Weed Act of 1974 and the Code of Federal Regulations, Title 7, Part 319, Subpart 56 (7 CFR 319.56 - Fruits and Vegetables). The methods and terminology used to initiate, conduct, and report this PRA are consistent with guidelines provided by FAO (1996) and NAPPO (1996).

This assessment supplements the September, 1994 assessment. Since completion of the 1994 assessment, several factors affecting PPQ's assessment of risks posed by the importation of pear fruit from China have changed, and the PPQ risk assessment methodology and format have been greatly enhanced.

Factors causing a reassessment of pear importation from China include:

1. The identification of a number of new pest species; the existence of these species was unknown or information was unavailable at the time of the original assessment.
2. The workplan under which the importation of pears would be allowed, has not been submitted to PPQ; the existence of the aforementioned new pests may affect this workplan, and mitigation options identified during the Risk Management phase of the analysis.
3. The methodology of the present risk assessment format is more transparent than the format used in the original assessment, and is more closely harmonized with current FAO/NAPPO risk assessment standards.

With this assessment, the 1994 assessment has been updated and reformatted in accordance with the current standards used by PPQ to conduct risk assessments, and supersedes the September 1994 assessment. However, the estimates of the unmitigated risks have not significantly changed from the original assessment.

B. Risk Assessment

1. Initiating Event: Proposed Action

This commodity-based, pathway-initiated, PRA was conducted to assess the risks associated with Ya pears, *Pyrus x bretschneideri* Rehder and fragrant pears, *P. ussuriensis* Maxim. from China. The authority regulating fruit and vegetable importations into the United States is 7 CFR 319.56.

2. Assessment of Weediness Potential of *Pyrus* spp.

The results of the weediness screening for *Pyrus* (Table 1) did not prompt a pest-initiated risk assessment.

Table 1: Process for Determining Weediness Potential of Commodity
<p>Commodity: <i>Pyrus x bretschneideri</i> Rehder (Ya pear) and <i>Pyrus ussuriensis</i> Maxim. (<i>syn.</i> = <i>P. ussuriensis</i> var <i>ovoidea</i> Rehder) (fragrant pear)</p> <p>Phase 1: <i>Pyrus x bretschneideri</i> is native to China and <i>Pyrus ussuriensis</i> is native to Northeast Asia . Neither occurs in the United States.</p> <p>Phase 2: Answer Yes or No to the following questions:</p> <p>Is the genus listed in:</p> <p><u>NO</u> <i>Geographical Atlas of World Weeds</i> (Holm <i>et al.</i>, 1979)</p> <p><u>NO</u> <i>World's Worst Weeds</i> (Holm <i>et al.</i>, 1977)</p> <p><u>NO</u> <i>Report of the Technical Committee to Evaluate Noxious Weeds; Exotic Weeds for Federal Noxious Weed Act</i> (Gunn and Ritchie, 1982)</p> <p><u>NO</u> <i>Economically Important Foreign Weeds</i> (Reed, 1977)</p> <p><u>NO</u> Weed Science Society of America list (WSSA, 1989)</p> <p><u>NO</u> Is there any literature reference indicating weediness (<i>e.g.</i>, <i>AGRICOLA</i>, <i>CAB</i>, <i>Biological Abstracts</i>, <i>AGRIS</i>; search on "species name" combined with "weed").</p> <p>Phase 3: Conclusion:</p> <p>IF 1. The species is widely prevalent in the United States and the answer to all of the questions is no...</p> <p>Proceed with the pest risk assessment.</p> <p>2. The species is widely prevalent in the United States and the answer to one or more of the questions is yes...</p> <p>Proceed with the pest risk assessment, provide comments on findings in text, and incorporate findings regarding weediness into the Risk Elements described below.</p> <p>3. The species is new to or not widely prevalent in the United States and the answer to all of the questions is no...</p> <p>Proceed with the pest risk assessment.</p> <p>4. The species is new to or not widely prevalent in the United States and the answer to one or more of the questions is yes...</p> <p>Consult authority under the Federal Noxious Weed Act for listing plant species as a noxious weed and consider the advisability of performing a pest-initiated pest risk assessment on the plant species.</p> <p>Provide explanations of findings in text.</p>

3. Previous Risk Assessments, Current Status and Pest Interceptions

Decision History for *Pyrus* spp. from Asia

1994- Permit entry of *Pyrus bretschneideri* in accordance with PPQ- approved workplan and safeguards from the People's Republic of China.

1990- Permit entry of *Pyrus pyrifolia* in accordance with PPQ- approved workplan and safeguards from Korea.

1985- Permit entry of *Pyrus pyrifolia* from Japan.

1988- Deny entry of *Pyrus* spp. from China.

1986- Permit entry of *Pyrus pyrifolia* into Hawaii from Korea.

1982- Deny entry of *Pyrus pyrifolia* from Japan.

1979- Deny entry of *Pyrus communis* from Korea.

1974- Deny entry of *Pyrus pyrifolia* from China.

1974- Deny entry of *Pyrus communis* into Hawaii from Korea.

1971- Permit entry of *Pyrus pyrifolia* into Alaska from Japan.

Pest Interceptions on *Pyrus* from China - FY85-95

None

4. Pests associated with *Pyrus* spp. in China

Table 2. Pests of <i>Pyrus</i>				
Scientific name	Dist. ¹	Host ²	Codes ³	References
ARTHROPODA				
<i>Acleris fimbriana</i> Thunburg (Lepidoptera: Tortricidae)	CN	y	a	China, 1994; Hill, 1987; Zhang, 1994
<i>Acleris variegana</i> Denis & Schiffermuller (Lepidoptera: Tortricidae)	CN, NA	y	a	Hill, 1987; Hodges, <i>et al.</i> , 1983; Zhang, 1994
<i>Acrocercops astaurota</i> Meyrick (Lepidoptera: Gracilariidae)	CN	<i>Pyrus</i>	a	NAS, 1977; Zhang, 1994
<i>Acronicta intermedia</i> Warren (Lepidoptera: Noctuidae)	CN	y	a, n	China, 1994; Zhang, 1994
<i>Acronicta rumicis</i> L. (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Acronicta strigosa</i> Denis & Schiffermuller (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	a	Zhang, 1994
<i>Actias selene</i> Hubner (Lepidoptera: Saturniidae)	CN	<i>Pyrus</i>	a	Hill, 1987; NAS, 1977
<i>Adoretus tenuimaculatus</i> Waterhouse (Coleoptera: Scarabaeidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Adoxophyes orana</i> (Fischer von Roselerstamm) (Lepidoptera: Tortricidae)	CN	y	a, e, n, z _e	China, 1994; EPPO; Hill, 1987; PNKTO No. 62

<i>Agrilus mali</i> Matsumura (Coleoptera: Buprestidae)	CN	<i>Pyrus</i>	a	China, 1992
<i>Aleurocanthus spiniferus</i> (Quaintance) (Homoptera: Aleyrodidae)	CN	<i>Pyrus</i>	a, n	CIE, 1976; Hill, 1987; PNKTO No. 14
<i>Aleurocanthus woglumi</i> Ashby (Homoptera: Aleyrodidae)	CN, US (FL, TX)	<i>Pyrus</i>	a, g	CIE, 1995; EPPO; FAO; PNKTO No. 15
<i>Amphipyra pyramidea</i> L. (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	a, n	Shiraki, 1952
<i>Amsacta lactinea</i> (Cramer) (Lepidoptera: Arctiidae)	CN	y	a	Chang-sha, 1992 China., 1994
<i>Ancylis mandarinana</i> Walsingham (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Anomala corpulenta</i> Motschulsky (Coleoptera: Scarabaeidae)	CN	y	a	China, 1994
<i>Anoplophora chinensis</i> Forster (Coleoptera: Cerambycidae)	CN	<i>Pyrus</i>	a	Duffy, 1968; Shiraki, 1952
<i>Anoplophora glabripennis</i> Motschulsky (Coleoptera: Cerambycidae)	CN	y	a	Chang-sha, 1992; China, 1994
<i>Anthonomus pomorum</i> (L.) (Coleoptera: Curculionidae)	CN	<i>Pyrus</i>	a	Hanson, 1963; Hill, 1987; PNKTO No. 31; NAS, 1977
<i>Anuraphis</i> sp. (Homoptera: Aphididae)	CN	y	a	China, 1994; Hill, 1987
<i>Anuraphis piricola</i> Okamoto & Takahashi (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1984; Shiraki, 1952
<i>Aphanostigma iaksuiense</i> (Kishida) (Homoptera: Aphididae)	CN	f, y	a	Blackman and Eastop, 1984; China, 1994
<i>Aphis gossypii</i> Glover (Homoptera: Aphididae)	CN, US	<i>Pyrus</i>	a, c, o	Blackman and Eastop, 1984; Shiraki, 1952; Smith and Parron, 1978
<i>Aphis spiraecola</i> Patch (Homoptera: Aphididae)	CN, US	f, y	a, c, o	Blackman and Eastop, 1984, 1994; China, 1994; Smith and Parron, 1978
<i>Apocheima cinerarius</i> Erschov (Lepidoptera: Geometridae)	CN	f	a	China, 1994; Zhang, 1994
<i>Apocheima cinerarius pyri</i> Yang (Lepidoptera: Geometridae)	CN	f, y	a	China, 1994; Miyamoto, 1994
<i>Apocheima sinuosaria</i> Leech (Lepidoptera: Geometridae)	CN	<i>Pyrus</i>	k	Zhang, 1994
<i>Aporia crataegi</i> L. (Lepidoptera: Pieridae)	CN	f, y	a	Chang-sha, 1992; China, 1994; INKTO No. 149
<i>Apriona germari</i> (Hope) (Coleoptera: Cerambycidae)	CN	y	a	Chang-sha, 1992; China, 1994; Shiraki, 1952

<i>Archips breviplicanus</i> Walsingham (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Archips crataeganus</i> Hubner (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	a	Hill, 1987; Shiraki, 1952; Zhang, 1994
<i>Archips ingentanus</i> (Christoph) (Lepidoptera: Tortricidae)	CN	f	a	China, 1994; Hill, 1987; Shiraki, 1952
<i>Archips oporanus</i> (Christoph) (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	a	Hill, 1987; Zhang, 1994
<i>Archips rosanus</i> L (Lepidoptera: Tortricidae)	CN, US	<i>Pyrus</i>	a, c, o	Hill, 1987; Shiraki, 1952; Zhang, 1994
<i>Archips xylosteanus</i> L (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	a	Hill, 1987; Shiraki, 1952; Zhang, 1994
<i>Aromia bungii</i> Falderman (Coleoptera: Cerambycidae)	CN	y	a	Chang-sha, 1992; China, 1994
<i>Asias halodendri</i> (Pallas) (Coleoptera: Cerambycidae)	CN	y	a	China, 1994
<i>Aulacorthum magnoliae</i> (Essig & Kuwana) (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1994
<i>Bactrocera dorsalis</i> Hendel (Diptera: Tephritidae)	CN	<i>Pyrus</i>	n, z ₁	CIE, 1994; Smith, <i>et al.</i> , 1992
<i>Blastodaena</i> sp. (Lepidoptera: Momphidae)	CN	y	a	China, 1994
<i>Blatodaena pyrigalla</i> (Yang) (Lepidoptera: Agonoxenidae)	CN	y	a	China, 1994; Park, 1986
<i>Brachycaudus cardui</i> (L.) (Homoptera: Aphididae)	CN, US	f	a, c	Blackman and Eastop, 1994; Smith and Parron, 1978
<i>Bryobia rubrioculus</i> (Scheuten) (Acarina: Tetranychidae)	CN, US	f	a, c	China, 1994; CIE, 1984; Hill, 1987; Jeppson <i>et al.</i> , 1975
<i>Byctiscus betulae</i> (L) (Coleoptera: Curculionidae)	CN	y	a	China, 1994; Geoffrion, 1979; Smol'yannikov, 1979.
<i>Calypotrypus hibinionis</i> Matsumura (Orthoptera: Gryllidae)	CN	<i>Pyrus</i>	a	Hanson, 1963
<i>Canephora asiatica</i> Staudinger (Lepidoptera: Psychidae)	CN	<i>Pyrus</i>	a, n	Shiraki, 1952
<i>Carposina sasakii</i> Matsumura (Lepidoptera: Carposinidae)	CN	y	n, z ₁	EPPO, INKTO No. 57; Smith, <i>et al.</i> , 1992
<i>Celastrina argiolus ladonides</i> de l-Orza (Lepidoptera: Lycaenidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Cenopalpus ruber</i> (Wainstein) (Acarina: Tenuipalpidae)	CN	f	a	China, 1994
<i>Ceroplastes japonicus</i> Green (Homoptera: Coccidae)	CN	y	a, n	China, 1994

<i>Ceroplastes rubens</i> Maskell (Homoptera: Coccidae)	CN, US (FL)	<i>Pyrus</i>	a, g, n	EPPO; Hamon and Williams, 1984; Johnson and Lyon, 1988; Shiraki, 1952
<i>Ceroplastes sinensis</i> Del Guercio (Homoptera: Coccidae)	CN, US (CA, NC, VA)	<i>Pyrus</i>	a, g, n	CIE, 1980; Hamon and Williams, 1984; Hill, 1987; Johnson and Lyon, 1988
<i>Chloroclystis rectangulata</i> (L) (Lepidoptera: Geometridae)	CN, US	f	c	Chang-sha, 1992; Hodges, <i>et al.</i> 1983; Miyamoto, 1994
<i>Choreutis pariana</i> Clerck (Lepidoptera: Choreutidae)	CN, US	<i>Pyrus</i>	a	Hodges, <i>et al.</i> , 1983; Johnson and Lyon, 1988; Zhang, 1994
<i>Choristoneura longicellana</i> (Walsingham) (Lepidoptera: Tortricidae)	CN	y	a	China 1994
<i>Chreonoma fortunei</i> Thomson (Coleoptera: Cerambycidae)	CN	<i>Pyrus</i>	a	Duffy, 1968; Shiraki, 1952
<i>Cicadella viridis</i> L. (Homoptera: Cicadellidae)	CN	y	a, n	China, 1994; Shiraki, 1952
<i>Cixius nervosus</i> L (Homoptera: Cixiidae)	CN	<i>Pyrus</i>	a	Metcalf, 1936; Shiraki, 1952
<i>Cnidocampa flavescens</i> Walker (Lepidoptera: Limacodidae)	CN, US (MA)	y	a	China, 1994; Hodges, <i>et al.</i> , 1983; Zhang, 1994
<i>Coccus hesperidum</i> L. (Homoptera: Coccidae)	CN, US	<i>Pyrus</i>	a, c, o	Gill, 1988; Hamon and Williams, 1984; Shiraki, 1952
<i>Conobathra bifidella</i> (Leech) (Lepidoptera: Pyralidae)	CN	y	?	China, 1994; Shiraki, 1952; Roesler, 1987.
<i>Conogethes punctiferalis</i> (Guenee) (Lepidoptera: Pyralidae)	CN	y	n, z _i	China, 1994; Clausen, 1931; INKTO No. 19; Shiraki, 1952
<i>Cossus cossus</i> L. (Lepidoptera: Cossidae)	CN	<i>Pyrus</i>	a, n	Zhang, 1994
<i>Cryptotympana atrata</i> (F) (Homoptera: Cicadidae)	CN	<i>Pyrus</i>	a	China, 1994; Hill, 1987; Metcalf, 1963; NAS, 1977
<i>Cydia funebrana</i> (Treitschke) (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	n, z _i	CIE, 1978; Hill, 1987; PNKTO No. 49
<i>Cydia inopinata</i> (Heinrich) (Lepidoptera: Tortricidae)	CN	y	z _i	EPPO; Smith, <i>et al.</i> , 1992
<i>Cydia molesta</i> Busck (Lepidoptera: Tortricidae)	CN, US	f, y	c, o, z _e , z _i	China, 1994; Metcalf and Metcalf, 1993; Zhang, 1994
<i>Cydia pomonella</i> (L) (Lepidoptera: Tortricidae)	CN, US	f	c, o, z _i	China, 1994; Hill, 1987; Hodges, <i>et al.</i> , 1983
<i>Dasychira pudibunda</i> L. (Lepidoptera: Lymantriidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952; Johnson and Lyon, 1988

<i>Didesmococcus koreanus</i> Borchsenius (Homoptera: Coccidae)	CN	y	a	China, 1994
<i>Dolycoris baccarus</i> L. (Heteroptera: Pentatomidae)	CN	y	a, n	Chang-sha, 1992; China, 1994
<i>Drosophila</i> sp. (Diptera: Drosophilidae)	CN	f	b	China, 1994
<i>Drosophila bimaculatus</i> (Diptera: Drosophilidae)	CN	f	b	China, 1994
<i>Drosophila tetrapunctata</i> Chang (Diptera: Drosophilidae)	CN	f	b	China, 1994
<i>Empoasca flavescens</i> F. (Homoptera: Cicadellidae)	CN	<i>Pyrus</i>	a, n	Metcalf, 1968; Shiraki, 1952
<i>Eotetranychus pruni</i> (Oudemans) (Acarina: Tetranychidae)	CN, US	f	a, c	China, 1994; Jeppson <i>et al.</i> , 1975
<i>Eriophyes pyri</i> Pagenstecher (Acarina: Eriophyidae)	CN, US	f	c, o	China, 1994; Metcalf and Metcalf, 1993
<i>Erthesina fullo</i> (Thunberg) (Heteroptera: Pentatomidae)	CN	y	n	Chang-sha, 1992; China, 1994
<i>Euconocephalus varius</i> Walker (Orthoptera: Tettigoniidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Eucorysses grandis</i> Thunberg (Heteroptera: Pentatomidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Eudocima fullonia</i> Clerck (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	e, z _e	Shiraki, 1952; Zhang, 1994
<i>Eudocima salaminea</i> Cramer (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	e, z _e	Shiraki, 1952; Zhang, 1994
<i>Eudocima tyrannus</i> Guenée (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	e, z _e	Shiraki, 1952; Zhang, 1994
<i>Eulecanium circumfcpul</i> ? Borch. (Homoptera: Coccidae)	CN	f	a	Miyamoto, 1994
<i>Eulecanium kunoense</i> Kuwana (Homoptera: Coccidae)	CN, US (CA)	y	a, g	China, 1994; Gill, 1988
<i>Eulecanium longisetum</i> Borehs. (Homoptera: Coccidae)	CN	f	a	China, 1994
<i>Eulecanium prunastri</i> Aroh. (Homoptera: Coccidae)	CN	f	a	China, 1994
<i>Eumeta miniscula</i> Butler (Lepidoptera: Psychidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952; Zhang, 1994
<i>Euproctis bipunctapex</i> Hampson (Lepidoptera: Lymantriidae)	CN	<i>Pyrus</i>	a	Zhang, 1994
<i>Euproctis similis</i> (Fuessly) (Lepidoptera: Lymantriidae)	CN, US	y	a, n	China, 1994; Hill, 1987; Hodges, <i>et al.</i> , 1983
<i>Euproctis subflava</i> Bremer (Lepidoptera: Lymantriidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952

<i>Gastropacha ilicifolia japonica</i> Leech (Lepidoptera: Lasiocampidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Gastropacha quercifolia</i> L (Lepidoptera: Lasiocampidae)	CN	y	a	China, 1992; INKTO No. 189; Shiraki, 1952
<i>Geisha distinctissima</i> Walker (Homoptera: Flatidae)	CN	<i>Pyrus</i>	a	Metcalf, 1957; Shiraki, 1952
<i>Halyomorpha picus</i> (F) (Heteroptera: Pentatomidae)	CN	y	n	China, 1994; NAS, 1977; Shiraki, 1952
<i>Heterogenea dentata</i> Oberthür (Lepidoptera: Limacodidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952; Zhang, 1994
<i>Holoceris vicarius</i> Walker (Lepidoptera: Cossidae)	CN	f	a	China, 1994; Shiraki, 1952
<i>Homona coffearia</i> Nietner (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952; Zhang, 1994
<i>Homalogonia obtusa</i> Walker (Heteroptera: Pentatomidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Hoplocampa brevis</i> (Klug) (Hymenoptera: Tenthredinidae)	CN	<i>Pyrus</i>	a, c	Hill, 1987
<i>Hoplocampa pyricola</i> Rohwer (Hymenoptera: Tenthredinidae)	CN	y	a, z _e	China, 1994; Japan, 1966; NAS, 1977; Shiraki, 1952
<i>Icerya purchasi</i> Maskell (Homoptera: Margarodidae)	CN, US	<i>Pyrus</i>	a, c	Johnson and Lyon, 1988; Shiraki, 1952
<i>Illiberis pruni</i> Dyar (Lepidoptera: Zygaenidae)	CN	y	c	Chang-sha, 1992; China, 1994; Shiraki, 1952
<i>Janus gussakovskii</i> Maa (Hymenoptera: Cephidae)	CN	y	a	China, 1994; Metcalf and Metcalf, 1993
<i>Janus piri</i> Okam and Muram (Hymenoptera: Cephidae)	CN	y	a	China, 1994; Metcalf and Metcalf, 1993
<i>Lampra</i> sp. (Coleoptera: Buprestidae)	CN	<i>Pyrus</i>	a	Hill, 1987; NAS, 1977
<i>Lampra bellula</i> Lewis (Coleoptera: Buprestidae)	CN	y	a	China, 1994; Hill, 1987
<i>Lampra limbata</i> Gebler (Coleoptera: Buprestidae)	CN	y	a	China, 1994; Hill, 1987; NAS, 1977
<i>Langia zenzeroides</i> Moore (Lepidoptera: Sphingidae)	CN	<i>Pyrus</i>	a	Zhang, 1994
<i>Ledra auditura</i> Walker (Homoptera: Cicadellidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Leucoptera malifoliella</i> (O.G. Costa) (Lepidoptera: Elachistidae)	CN	y	a, n, z _e	PNKTO No. 63
<i>Liparis aurora</i> Butler (Lepidoptera: Liparidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Lymantria dispar</i> L (Lepidoptera: Lymantriidae)	CN, US	f, y	a, h	China, 1994; Shiraki, 1952

<i>Lymantria monacha</i> L. (Lepidoptera: Lymantriidae)	CN	<i>Pyrus</i>	a	INKTO No. 8
<i>Macrovespa crabro crabroniformis</i> Smith (Hymenoptera: Vespidae)	CN	<i>Pyrus</i>	b	Shiraki, 1952
<i>Macrovespa ducalis</i> Smith (Hymenoptera: Vespidae)	CN	<i>Pyrus</i>	b	Shiraki, 1952
<i>Macrovespa mandarina</i> Smith (Hymenoptera: Vespidae)	CN	<i>Pyrus</i>	b	Shiraki, 1952
<i>Malacosoma neustria testacea</i> Motschulsky (Lepidoptera: Lasiocampidae)	CN	y	a, n	China, 1994; INKTO No. 39; Shiraki, 1952
<i>Malacosoma parallela</i> Staudinger (Lepidoptera: Lasiocampidae)	CN	f	a	China, 1994
<i>Marumba gaschewitschi</i> (Bremer & Grey) (Lepidoptera: Sphingidae)	CN	y	a, c	China, 1994; Hill, 1987; Zhang, 1994
<i>Marumba gaschkewitschii gressitti</i> (Bremer & Grey) (Lepidoptera: Sphingidae)	CN	<i>Pyrus</i>	a	Lin, 1987
<i>Metriona thais</i> Boheman (Coleoptera: Chrysomelidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Metzneria</i> sp. (Lepidoptera: Gelechiidae)	CN	<i>Pyrus</i>	a	NAS, 1977
<i>Miresa flavidorsalis</i> Staudinger (Lepidoptera: Limacodidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Neoris haraldi</i> Schawerda (Lepidoptera: Saturniidae)	CN	f	a	China, 1994
<i>Nephoterix</i> sp. (Lepidoptera: Pyralidae)	CN	f	a	China, 1994
<i>Nippolachnus piri</i> Matsumura (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1984; Shiraki, 1952
<i>Numonia pirivorella</i> Matsumura (Lepidoptera: Pyralidae)	CN	<i>Pyrus</i>	z ₁	NAS, 1977; Smith, <i>et al.</i> , 1992; Zhang, 1994
<i>Odites ricinella</i> Stainton (Lepidoptera: Lecithoceridae)	CN	<i>Pyrus</i>	a	Shiraki, 1952; Zhang, 1994
<i>Odonestis pruni</i> L (Lepidoptera: Lasiocampidae)	CN	y	a	China, 1994; Shiraki, 1952
<i>Oides leucostolk</i> Meyrick (Coleoptera: Chrysomelidae)	CN	y	a	China, 1994
<i>Oraesia excavata</i> Butler (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	e, n, z _e	Shiraki, 1952; Zhang, 1994
<i>Orgyia gonostigma approximans</i> Butler (Lepidoptera: Lymantriidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952

<i>Oryctes puntipennis</i> Motschulsky (Coleoptera: Scarabaeidae)	CN	f	a	China, 1994
<i>Ovatus malisuctus</i> (Matsumura) (Homoptera: Aphididae)	CN	f	a	Blackman and Eastop, 1994; China, 1994
<i>Oxycarenum hyalinipennis</i> (Costa) (Heteroptera: Lygaeidae)	CN	<i>Pyrus</i>	n, z _e	PNKTO No. 38
<i>Oxycetonia jucunda</i> Falderman (Coleoptera: Scarabaeidae)	CN	y	a, n	China, 1994; Shiraki, 1952
<i>Pandemis</i> sp. (Lepidoptera: Tortricidae)	CN	f	z _e	China, 1994
<i>Pandemis cerasana</i> (Hubner) (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	z _e	Zhang, 1994
<i>Pandemis heparana</i> Denis & Schiffermuller (Lepidoptera: Tortricidae)	CN, NA	<i>Pyrus</i>	o, z _e	Carter, 1984; Zhang, 1994
<i>Panonychus ulmi</i> Koch (Acarina: Tetranychidae)	CN, US	y	a, c	China, 1994; CIE, 1972; Hill, 1987; Jeppson <i>et al.</i> , 1975
<i>Parabemisia myricae</i> (Kuwana) (Homoptera: Aleyrodidae)	CN, US (CA, FL)	<i>Pyrus</i>	g, n	CIE, 1992; EPPO; Shiraki, 1952
<i>Parapandemis chondrillana</i> Herrich- Schäffer (Lepidoptera: Tortricidae)	CN	f	a	China, 1994; Zhang, 1994
<i>Parasa consocia</i> Walker (Lepidoptera: Limacodidae)	CN	y	a	China, 1994; Shiraki, 1952; Zhang, 1994
<i>Parasa hilarata</i> Staudinger (Lepidoptera: Limacodidae)	CN	y	a	China, 1994; Shiraki, 1952; Zhang, 1994
<i>Parasa sinica</i> Moore (Lepidoptera: Limacodidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952; Zhang, 1994
<i>Parasaissetia nigra</i> Nietner (Homoptera: Coccidae)	CN, US	<i>Pyrus</i>	a, c, o	Gill, 1988; Hamon and Williams, 1984; Shiraki, 1952
<i>Paratrachelophorus longicornis</i> Roelofs (Coleoptera: Curculionidae)	CN	<i>Pyrus</i>	?	Shiraki, 1952
<i>Paropsides duodecimpustulata</i> Gebler (Coleoptera: Chrysomelidae)	CN	<i>Pyrus</i>	a	NAS, 1977
<i>Parthenolecanium corni</i> (Bouche) (Homoptera: Coccidae)	CN, US	f	a, c, o	China, 1994; Hamon and Williams, 1984; Hill, 1987; Johnson and Lyon, 1988
<i>Pempelia heringii</i> Ragonot (Lepidoptera: Pyralidae)	CN	<i>Pyrus</i>	a	Zhang, 1994; Patel <i>et al.</i> , 1993
<i>Phalera assimilis</i> Bremer & Grey (Lepidoptera: Notodontidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952

<i>Phalera flavescens</i> Bremer & Grey (Lepidoptera: Notodontidae)	CN	y	a	China, 1994; Hill, 1987; Shiraki, 1952; Zhang, 1994
<i>Phlossa conjuncta</i> Walker (Lepidoptera: Limacodidae)	CN	y	a	China, 1994; Zhang, 1994
<i>Phyllonorycter blancardella</i> F. (Lepidoptera: Gracillariidae)	CN, US	f	a	China, 1994; Hill, 1987; Hodges, <i>et al.</i> , 1983
<i>Phyllonorycter ringoniella</i> Matsumura (Lepidoptera: Gracillariidae)	CN	y	a	China, 1994; Hill, 1987; Zhang, 1994
<i>Phyllophaga parallela</i> Motschulsky (Coleoptera: Scarabaeidae)	CN	y	a	China, 1994; Shiraki, 1952
<i>Planococcus citri</i> (Risso) (Homoptera: Pseudococcidae)	CN, US	<i>Pyrus</i>	a, c, o	Johnson and Lyon, 1988; McKenzie, 1967; Shiraki, 1952
<i>Platypleura kaempferi</i> F. (Homoptera: Cicadidae)	CN	<i>Pyrus</i>	n	Metcalf, 1963; Shiraki, 1952
<i>Polistes hebraeus</i> F. (Hymenoptera: Vespidae)	CN	<i>Pyrus</i>	b	Shiraki, 1952
<i>Popillia quadrigutta</i> Fabricino (Coleoptera: Scarabaeidae)	CN	y	a	Hill, 1987; China, 1994
<i>Potosia brevitarsis</i> (Lewis) (Coleoptera: Scarabaeidae)	CN	y	a	China, 1994
<i>Proagopertha lucidula</i> Falderman (Coleoptera: Scarabaeidae)	CN	y	a	China, 1994
<i>Prociphilus oriens</i> Mordvilko (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1994
<i>Pseudaulacaspis pentagona</i> Targioni- Tozzetti (Homoptera: Diaspididae)	CN, US	<i>Pyrus</i>	c, o	Nakahara, 1982; Shiraki, 1952
<i>Pseudococcus comstocki</i> Kuwana (Homoptera: Pseudococcidae)	CN, US	f, y	a, c	China, 1994; CIE, 1989; Hill, 1987; Johnson and Lyon, 1988
<i>Psylla aili</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Psylla betulaefoliae</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a, k	Hodkinson, 1984, 1986; Yang and Li, 1981
<i>Psylla cangshanli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Psylla changli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1984, 1986; Yang and Li, 1981
<i>Psylla chinensis</i> Yang & Li (Homoptera: Psyllidae)	CN	f, y	a	China, 1994; Hodkinson, 1984, 1986; Yang and Li, 1981
<i>Psylla dianli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984

<i>Psylla erhaii</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Psylla heterobetulaefoliae</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a, k	Hodkinson, 1984, 1986; Yang and Li, 1981
<i>Psylla kunmingli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Psylla liaoli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1984, 1986; Yang and Li, 1981
<i>Psylla phaeocarpae</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a, k	Hodkinson, 1984, 1986; Yang and Li, 1981
<i>Psylla pyri</i> L. (Homoptera: Psyllidae)	CN	f	a	China, 1994; Hodkinson, 1986; Yang and Li, 1981
<i>Psylla pyricola</i> Foerster (Homoptera: Psyllidae)	CN, US	<i>Pyrus</i>	a, c	Hodkinson, 1984, 1986; Johnson and Lyon, 1988
<i>Psylla qianli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1984, 1986; Yang and Li, 1984
<i>Psylla simaoli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Psylla xanthisma</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Psylla xiaguanli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Psylla yunli</i> Yang & Li (Homoptera: Psyllidae)	CN	<i>Pyrus</i>	a	Hodkinson, 1986; Yang and Li, 1984
<i>Pulvinaria aurantii</i> Cockerell (Homoptera: Coccidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Pygaera anachoreta</i> F. (Lepidoptera: Notodontidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Pygaera inclusa</i> (Hubner) (Lepidoptera: Notodontidae)	CN, US	<i>Pyrus</i>	a	Hodges, <i>et al.</i> , 1983; Shiraki, 1952
<i>Pyrolachnus pyri</i> (Buckton) (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1994
<i>Quadraspidotus perniciosus</i> (Comstock) (Homoptera: Diaspididae)	CN, US	f, y	c, o, z _e	China, 1994; Hill, 1987; Nakahara, 1982
<i>Rhaphidopalpa femoralis</i> Motschulsky (Coleoptera: Chrysomelidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Rhodococcus turanicus</i> Arch. (Homoptera: Coccidae)	CN	f	a	China, 1994; Saakyan-Baranova and Borovikova, 1971.
<i>Rhynchites foveipennis</i> Fairm. (Coleoptera: Rhynchitidae)	CN	<i>Pyrus</i>	z _i	China, 1994; Guo, <i>et al.</i> , 1991
<i>Rhynchites heros</i> Roel (Coleoptera: Rhynchitidae)	CN	<i>Pyrus</i>	z _i	Hanson, 1963; INKTO No. 45; Shiraki, 1952

<i>Sappaphis dipirivora</i> Zhang (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1994
<i>Sappaphis piri</i> Matsumura (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1994
<i>Sappaphis sinipiricola</i> Zhang (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1994
<i>Schizaphis piricola</i> Matsumura (Homoptera: Aphididae)	CN	y	a, n	Blackman and Eastop, 1984; China, 1994; NAS, 1977
<i>Scolytus rugulosus</i> (Ratzeburg) (Coleoptera: Scolytidae)	CN, US	f	a, c	China, 1994; Poole and Gentili, 1996
<i>Selepa celtis</i> Moore (Lepidoptera: Noctuidae)	CN	<i>Pyrus</i>	a	Zhang, 1994
<i>Serica japonica</i> Motschulsky (Coleoptera: Scarabaeidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Serica orientalis</i> Motschulsky (Coleoptera: Scarabaeidae)	CN	y	a	Hill, 1987; China, 1994; Shiraki, 1952
<i>Serica similis</i> Lewis (Coleoptera: Scarabaeidae)	CN	<i>Pyrus</i>	a	Shiraki, 1952
<i>Sipalinus hypocrita</i> (Boheman) (Coleoptera: Curculionidae)	CN	<i>Pyrus</i>	a	Hutachareern, 1978. Shiraki, 1952
<i>Sirex gigas</i> L (Hymenoptera: Siricidae)	CN	f	a	China, 1994; Spradbery and Kirk, 1981
<i>Spilonota ocellana</i> (Denis & Schiffermuller) (Lepidoptera: Tortricidae)	CN, US	y	a, c	China, 1994; Hill, 1987; Metcalf and Metcalf, 1993
<i>Spilonota lechriaspis</i> Meyrick (Lepidoptera: Tortricidae)	CN	y	a	China, 1994; Hill, 1987; Shiraki, 1952
<i>Spilonota prognathana</i> Snellen (Lepidoptera: Tortricidae)	CN	<i>Pyrus</i>	a	Hill, 1987; Shiraki, 1952; Zhang, 1994
<i>Stephanitis ambigua</i> Hor. (Heteroptera: Tingidae)	CN	<i>Pyrus</i>	a, n	Hill, 1987
<i>Stephanitis nashi</i> Zsaki & Takeya (Heteroptera: Tingidae)	CN	y	a, n	China 1994
<i>Sternoplistes temmincki</i> Guerin (Coleoptera: Cerambycidae)	CN	<i>Pyrus</i>	a	Duffy, 1968; Shiraki, 1952
<i>Synanthedon hector</i> Butler (Lepidoptera: Sesiidae)	CN	f	a	China, 1994; Shiraki, 1952
<i>Telphusa chloroderces</i> Meyrick (Lepidoptera: Gelechiidae)	CN	y	a	China, 1994
<i>Tetranychus kanzawai</i> Kishida (Acarina: Tetranychidae)	CN	<i>Pyrus</i>	a, z _e	Ehara, 1960, 1964; Ehara and Masaki, 1989
<i>Tetranychus turkestanii</i> (Ugarov & Nikolski) (Acarina: Tetranychidae)	CN, US	f	a, c, o	China, 1994; Jeppson <i>et al.</i> , 1975

<i>Tetranychus viennensis</i> Zacher (Acarina: Tetranychidae)	CN	<i>Pyrus</i>	n, z _e	Ehara and Masaki, 1989; Jeppson <i>et al.</i> , 1975
<i>Tetigoniella viridis</i> (L) (Homoptera: Cicadellidae)	CN	f	a	China, 1994
<i>Thosea sinensis</i> Walker (Lepidoptera: Limacodidae)	CN	y	n	China, 1994
<i>Toxoptera aurantii</i> (Boyer de Fonscolombe) (Homoptera: Aphididae)	CN, US	<i>Pyrus</i>	a, c, o	Blackman and Eastop, 1994; Smith and Parron, 1978
<i>Toxoptera odinae</i> van den Goot (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1984; Shiraki, 1952
<i>Toxoptera pyricola</i> Matsumura (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Hill, 1987
<i>Trioza magnisciosa</i> Log (Homoptera: Psyllidae)	CN	f	a	China, 1994
<i>Tuberocephalus momonis</i> (Matsumura) (Homoptera: Aphididae)	CN	<i>Pyrus</i>	a	Blackman and Eastop, 1994; Shiraki, 1952
<i>Urochela luteovaria</i> Distant (Heteroptera: Pentatomidae)	CN	y	a	Hanson, 1963; Japan, 1966; NAS, 1977
<i>Vespa mandarinia</i> Smith (Hymenoptera: Vespidae)	CN	y	b	China, 1994; Hill, 1987
<i>Vespa orientalis</i> L. (Hymenoptera: Vespidae)	CN	f	b	China, 1994; Hill, 1987
<i>Vespa xanthoptera</i> Cameron (Hymenoptera: Vespidae)	CN	<i>Pyrus</i>	b	Shiraki, 1952
<i>Yponomeuta malinellus</i> Zeller (Lepidoptera: Yponomeutidae)	CN, US (NY)	<i>Pyrus</i>	a	Hill, 1987; Zhang, 1994
PATHOGENS				
<i>Alternaria alternata</i> (Fr.) Keissler (Fungi Imperfecti: Hyphomycetes)	CN, US	f	c, o, z ei	Jones <i>et al.</i> , 1990
<i>Alternaria gaisen</i> Nagano (Fungi Imperfecti: Hyphomycetes)	CN	f	z _{ei}	David, 1988; Palm <i>et al.</i> , 1986; Simmons and Roberts, 1993; Tai, 1979
<i>Ascochyta prunicola</i> P. K. Chi (Fungi Imperfecti: Coelomycetes)	CN	f	a	Tai, 1979
<i>Aspergillus niger</i> Tiegh (Fungi Imperfecti: Hyphomycetes)	CN, US	f	o, z _{ei}	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Aureobasidium pullulans</i> (de Bary) G. Amaud (Fungi Imperfecti: Hyphomycetes)	CN, US	f	o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Botryosphaeria berengeriana</i> de Notaris f. sp. <i>piricola</i> (Nose) Koganezawa & (Nose) Yamamoto (Loculoascomycetes: Dothideales)	CN, US	f	c, o, z ei	CABI/EPPO, 1992; Farr <i>et al.</i> , 1989

<i>Botrytis cinerea</i> Pers. (Fungi Imperfecti: Hyphomycetes)	CN, US	f	c, o	Jones <i>et al.</i> , 1990
<i>Butlerelfia eustacei</i> Weresub & Illman (Basidiomycetes: Aphyllophorales)	CN, US	f	o, Zei	Jones <i>et al.</i> , 1990
<i>Cercospora piricola</i> Saw. (Fungi Imperfecti: Hyphomycetes)	CN	f	a	Chen <i>et al.</i> , 1958; Tai, 1979
<i>Chondrostereum purpureum</i> (Pers. Ex Fr.) Pouzar (Basidiomycetes: Aphyllophorales)	CN, US	f	a, o	Jones <i>et al.</i> , 1989
<i>Colletotrichum gloeosporioides</i> (Penz.) Penz. & Sacc. In Penz. (Fungi Imperfecti: Coelomycetes)	CN, US	f	c, o, z ei	Farr <i>et al.</i> , 1989; Jones <i>et al.</i> , 1990; Tai, 1979
<i>Coniothyrium piricola</i> Poteb. (Fungi Imperfecti: Coelomycetes)	CN	f	a	Chen 1958; Tai, 1979
<i>Coniothyrium pyrinum</i> (Sacc.) J.Sheid. (Fungi Imperfecti: Coelomycetes)	CN, US	f	a, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Coniothyrium tirolensis</i> Bub. (Fungi Imperfecti: Coelomycetes)	CN	f	a	Tai, 1979
<i>Cytospora carphosperma</i> Sacc. (Fungi Imperfecti: Coelomycetes)	CN	f	a	Tai, 1979
<i>Cytospora leucosperma</i> (Pers.:Fr.)Fr. (Fungi Imperfecti: Coelomycetes)	CN, US	f	a, c, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Diaporthe pernicioso</i> Em. Marchal (Pyrenomycetes: Diaporthales)	CN, US	f	a, c, o	Farr <i>et al.</i> , 1989; Jones <i>et al.</i> , 1989; Tai, 1979
<i>Gymnosporangium asiaticum</i> Miyabe ex G. Yamada (Basidiomycetes: Uredinales)	CN, US	f	a, c, o	Farr <i>et al.</i> , 1989; Kern, 1973; Tai, 1979
<i>Gymnosporangium fuscum</i> Hedw. f.in DC (Basidiomycetes: Uredinales)	CN, CA	f	a, c, z ei(rare)	CMI, 1977; Jones <i>et al.</i> , 1990; Wang and Guo, 1985; Ziller, 1974
<i>Helicobasidium mompa</i> Tanaka (Basidiomycetes: Auriculariales)	CN	f	a	Jones <i>et al.</i> , 1990; Watson, 1971
<i>Marssonina neillilae</i> (Harkn.) Magnus (Fungi Imperfecti: Coelomycetes)	CN, US	f	a, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Monilinia fructigena</i> Honey in Whetzel (Discomycetes: Helotiales) Anamorph: <i>Monilia fructigena</i>	CN	f	Zei	Chen, 1958; CMI, 1979; Tai, 1979
<i>Monilia laxa</i> (Ehrenb.) Sacc. & Voglino (Fungi Imperfecti: Hyphomycetes)	CN, US	f	c, o, z ei	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Mycosphaerella pomacearum</i> (Corda) Sacc. (Loculoascomycetes: Dothideales)	CN	f	Ze	Tai, 1979

<i>Mycosphaerella pyri</i> (Auersw.) Boerema (Loculoascomycetes: Dothideales) Anamorph: <i>Septoria pyricola</i>	CN, US	f	c, o, z _e	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Penicillium expansum</i> Link (Fungi Imperfecti: Hyphomycetes)	CN, US	f	c, o, z _{ei}	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Penicillium italicum</i> Wehmer (Fungi Imperfecti: Hyphomycetes)	CN, US	f	c, o, z _{ei}	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Phellinus pomaceus</i> (Pers.) Maire (Basidiomycetes: Aphyllophorales)	CN, US	f	a, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Phoma exigua</i> Desmaz. (Fungi Imperfecti: Coelomycetes)	CN, US	f	c, o, z _{ei}	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Phoma pomorum</i> Thuem. (Fungi Imperfecti: Coelomycetes)	CN, US	f	a, c, o	Farr <i>et al.</i> , 1989; Tai, 1979;
<i>Phomopsis fukushii</i> Tanaka et Endo (Fungi Imperfecti: Coelomycetes)	CN	f	a	Chen, 1958; Tai, 1979
<i>Phyllactinia pyri</i> (Cast) Homma. (Pyrenomycetes: Erysiphales)	CN	f	a	Chen, 1958; Ling, 1948; Tai, 1979
<i>Phyllactinia pyri-serotinae</i> Saw. (Pyrenomycetes: Erysiphales)	CN	f	a	Watson, 1971
<i>Phyllosticta pirina</i> Sacc. (Fungi Imperfecti: Coelomycetes)	CN	f	a	Tai, 1979
<i>Phytophthora cactorum</i> (Leb. & Cohn) Schroet. (Oomycetes: Peronosporales)	CN, US	f	a, c, o	CMI, 1984; Jones <i>et al.</i> , 1989
<i>Podosphaera clandestina</i> (Wallr.:Fr.) Lev. (Pyrenomycetes: Erysiphales)	CN, US	f	a, c, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Podosphaera leucotricha</i> (Ellis & Everh.) E.S. Salmon (Pyrenomycetes: Erysiphales)	CN, US	f	a, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Polystigma rubra</i> Sacc. (Pyrenomycetes: Phyllachorales)	CN	f	a	Tai, 1979
<i>Pseudocercospora mali</i> (Ellis & Everhart) Deighton (Fungi Imperfecti: Hyphomycetes)	CN, US	f	a, o	Chupp, 1953; Farr <i>et al.</i> , 1989; Tai, 1979
<i>Rhizopus stolonifer</i> (Ehrenb.) Vuill. (Zygomycetes: Mucorales)	CN, US	f	c, o, z _{ei}	Jones <i>et al.</i> , 1990
<i>Schizothyrium pomi</i> (Mont. & Fr.)Arx (Loculoascomycetes: Dothideales)	CN, US	f	c, o, z _i	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Seiridium unicorne</i> (Cooke & Ellis) Sutton (Fungi Imperfecti: Coelomycetes)	CN, US	f	a, o	Farr <i>et al.</i> , 1989; Tai, 1979

<i>Sphaeropsis malorum</i> Berk. (Fungi Imperfecti: Coelomycetes) Teleomorph: <i>Botryosphaeria obtusa</i>	CN, US	f	c, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Thanatephorus cucumeris</i> (A.B.Frank) Donk (Basidiomycetes: Tulasnellales)	CN, US	f	c, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Trichothecium roseum</i> (Pers.:Fr.)Link (Fungi Imperfecti: Hyphomycetes)	CN, US	f	c, o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Valsa ambiens</i> (Pers.:Fr.)Fr. (Pyrenomycetes: Diaporthales)	CN, US	f	o	Farr <i>et al.</i> , 1989; Tai, 1979
<i>Venturia pirina</i> Aderh. (Loculoascomycetes: Dothideales) Anamorph: <i>Fusicladium pyrorum</i>	CN, US	f	c, o, z _e	Farr <i>et al.</i> , 1989; Jones <i>et al.</i> , 1989
BACTERIA				
<i>Agrobacterium tumefaciens</i> (Smith & Townsend) Conn.	CN, US	<i>Pyrus</i>	k, o	Bradbury, 1986
<i>Erwinia amylovora</i> (Burril) Winslow, Broadhurst, Buchanan, Krumwiede, Rogers & Smith	CN, US	f	o	Bradbury, 1986
<i>Erwinia carotovora carotovora</i> (Jones) Bergey <i>et al.</i>	CN, US	f	k, o	Bradbury, 1986
VIRUSES				
Apple chlorotic leaf spot	CN, US	<i>Pyrus</i>	k, o	Brunt <i>et al.</i> , 1996
Apple stem pitting	CN, US	<i>Pyrus</i>	k, o	Brunt <i>et al.</i> , 199
Pear rusty skin viroid (syn. Apple scar skin viroid)	CN	f, y	z _i	Chen, <i>et al.</i> , 1989; Hadidi <i>et al.</i> , 1991

¹Geographical distribution is denoted as follows: CA-California, CN-People's Republic of China, FL-Florida, HI-Hawaii, MA-Massachusetts, NA-North America, NC-North Carolina, NY-New York, TX-Texas, US- United States, VA-Virginia, WA-Washington

²Host genera identified in literature and by China: f - fragrant pear, y - ya pear.

³Codes: a - Pest mainly associated with plant part other than commodity

b - Not likely to be a primary plant pest

c - Listed in non-reportable dictionary as non-actionable.

e - Although pest attacks commodity, it would not be expected to remain with the commodity

(plant

part) during processing

g - Quarantine pest; pest has limited distribution in the U.S. and is under official control as follows: pest listed by name in USDA's pest dictionary, official quarantine action may be taken on this

pest when intercepted on this commodity.

h - Quarantine pest; pest has limited distribution in the U.S. and is under official control as follows:(1) pest listed by name in USDA's pest dictionary, official quarantine action may be taken on this pest when intercepted on this commodity and, (2) pest is a program pest (there is

an

Official Federal or recognized State program for control of this pest beyond its being listed in

the

pest dictionary as actionable.)

k - Not specifically listed for host, but reported from other hosts in same plant genus/family.

n - Listed in the USDA catalogue of intercepted pests as actionable.

o - Organism does not meet the geographical and regulatory definition for a quarantine pest.

z_i - Internal feeder: Pest is known to attack or infect commodity and it would be reasonable to expect

the pest may remain with the commodity during processing and shipping

z_e - External feeder: Pest is known to commonly attack or infect commodity and it would be reasonable to expect the pest may remain with the commodity during processing and

shipping.

5. List of Quarantine Pests

Table 3. Quarantine Pests - <i>Pyrus</i>
ARTHROPODA
<i>Acleris fimbriana</i> Thunburg (Lepidoptera: Tortricidae)
<i>Acrocercops astaurota</i> Meyrick (Lepidoptera: Gracilariidae)
<i>Acronicta intermedia</i> Warren (Lepidoptera: Noctuidae)
<i>Acronicta rumicis</i> L. (Lepidoptera: Noctuidae)
<i>Acronicta strigosa</i> Denis & Schiffermuller (Lepidoptera: Noctuidae)
<i>Actias selene</i> Hubner (Lepidoptera: Saturniidae)
<i>Adoretus tenuimaculatus</i> Waterhouse (Coleoptera: Scarabaeidae)
<i>Adoxophyes orana</i> (Fischer von Roselerstamm) (Lepidoptera: Tortricidae)
<i>Agrilus mali</i> (Matsumura) (Coleoptera: Buprestidae)
<i>Aleurocanthus spiniferus</i> (Quaintance) (Homoptera: Aleyrodidae)
<i>Aleurocanthus woglumi</i> Ashby (Homoptera: Aleyrodidae)
<i>Amphipyra pyramidea</i> L. (Lepidoptera: Noctuidae)
<i>Amsacta lactinea</i> (Cramer) (Lepidoptera: Arctiidae)
<i>Ancylis mandarinana</i> Walsingham (Lepidoptera: Tortricidae)
<i>Anomala corpulenta</i> Motschulsky (Coleoptera: Scarabaeidae)
<i>Anoplophora chinensis</i> Forster (Coleoptera: Cerambycidae)
<i>Anoplophora glabripennis</i> Motschulsky (Coleoptera: Cerambycidae)
<i>Anthonomus pomorum</i> (L.) (Coleoptera: Curculionidae)
<i>Anuraphis piricola</i> Okamoto & Takahashi (Homoptera: Aphididae)
<i>Aphanostigma iaksuiense</i> (Kishida) (Homoptera: Aphididae)
<i>Apocheima cinerarius</i> Erschov (Lepidoptera: Geometridae)
<i>Apocheima cinerarius pyri</i> Erschov (Lepidoptera: Geometridae)
<i>Apocheima sinuosaria</i> Leech (Lepidoptera: Geometridae)
<i>Aporia crataegi</i> L. (Lepidoptera: Pieridae)
<i>Aporia germari</i> (Hope) (Lepidoptera: Pieridae)
<i>Archips breviplicanus</i> Walsingham (Lepidoptera: Tortricidae)
<i>Archips crataeganus</i> Hubner (Lepidoptera: Tortricidae)
<i>Archips ingentanus</i> (Christoph) (Lepidoptera: Tortricidae)
<i>Archips oporanus</i> (Christoph) (Lepidoptera: Tortricidae)
<i>Archips xylosteanus</i> L. (Lepidoptera: Tortricidae)
<i>Aromia bungii</i> Fladerman (Coleoptera: Cerambycidae)
<i>Asias halodendri</i> (Pallas) (Coleoptera: Cerambycidae)
<i>Aulacorthum magnoliae</i> (Essig & Kuwana) (Homoptera: Aphididae)
<i>Bactorcera dorsalis</i> Hendel (Diptera: Tephritidae)
<i>Blastodacna pyrigalla</i> Yang (Lepidoptera: Agonoxenidae)
<i>Byctiscus betulae</i> (L.) (Coleoptera: Curculionidae)
<i>Calyptotrypus hibinonis</i> Matsumura (Orthoptera: Gryllidae)
<i>Canephora asiatica</i> Staudinger (Lepidoptera: Psychidae)
<i>Carposina sasakii</i> Matsumura (Lepidoptera: Carposinidae)
<i>Celastrina argiolus ladonides</i> de l-Orza (Lepidoptera: Lycaenidae)
<i>Cenopalpus ruber</i> (Wainstein) (Acarina: Tenuipalpidae)
<i>Ceroplastes japonicus</i> Green (Homoptera: Coccidae)
<i>Ceroplastes rubens</i> Maskell (Homoptera: Coccidae)
<i>Ceroplastes sinensis</i> Del Guercio (Homoptera: Coccidae)
<i>Choristoneura longicellana</i> (Walsingham) (Lepidoptera: Tortricidae)
<i>Chreonoma fortunei</i> Thomson (Coleoptera: Cerambycidae)
<i>Cicadella viridis</i> L. (Homoptera: Cicadellidae)
<i>Cixius nervosus</i> L. (Homoptera: Cixiidae)
<i>Cnidocampa flavescens</i> Walker (Lepidoptera: Limacodidae)

Liparis aurora Butler (Lepidoptera: Liparidae)
Lymantria dispar L (Lepidoptera: Lymantriidae)
Lymantria monacha L. (Lepidoptera: Lymantriidae)
Malacosoma neustria testacea Motschulsky (Lepidoptera: Lasiocampidae)
Malacosoma parallela Staudinger (Lepidoptera: Lasiocampidae)
Marumba gaschkewitschii (Bremer & Grey) (Lepidoptera: Sphingidae)
Marumba gaschkewitschii gressitti (Bremer & Grey) (Lepidoptera: Sphingidae)
Metriona thais Boheman (Coleoptera: Chrysomelidae)
Miresa flavidorsalis Staudinger (Lepidoptera: Limacodidae)
Neoris haraldi Schawerda (Lepidoptera: Saturniidae)
Nippolachnus piri Matsumura (Homoptera: Aphididae)
Numonia pirivorella Matsumura (Lepidoptera: Pyralidae)
Odites ricinella Stainton (Lepidoptera: Lecithoceridae)
Odonestis pruni L (Lepidoptera: Lasiocampidae)
Oides leucostolk Meyrick (Coleoptera: Chrysomelidae)
Oraesia excavata Butler (Lepidoptera: Noctuidae)
Orgyia gonostigma approximans Butler (Lepidoptera: Lymantriidae)
Oryctes puntipennis Motschulsky (Coleoptera: Scarabaeidae)
Ovatus malisuctus (Matsumura) (Homoptera: Aphididae)
Oxycareus hyalinipennis (Costa) (Heteroptera: Lygaeidae)
Oxycetonia jucunda Falderman (Coleoptera: Scarabaeidae)
Pandemis cerasana (Hubner) (Lepidoptera: Tortricidae)
Parabemisia myricae (Kuwana) (Homoptera: Aleyrodidae)
Parapandemis chondrillana Herrich-Schäffer (Lepidoptera: Tortricidae)
Parasa consocia Walker (Lepidoptera: Limacodidae)
Parasa hilarata Staudinger (Lepidoptera: Limacodidae)
Parasa sinica Moore (Lepidoptera: Limacodidae)
Paratracheophorus longicornis Roelofs (Coleoptera: Curculionidae)
Paropsides duodecimpustulata Gebler (Coleoptera: Chrysomelidae)
Pempelia heringii Ragonot (Lepidoptera: Pyralidae)
Phalera assimilis Bremer & Grey (Lepidoptera: Notodontidae)
Phalera flavescens Bremer & Grey (Lepidoptera: Notodontidae)
Phlossa conjuncta Walker (Lepidoptera: Limacodidae)
Phyllonorycter ringoniella Matsumura (Lepidoptera: Gracillariidae)
Phyllophaga parallela Motschulsky (Coleoptera: Scarabaeidae)
Platypleura kaempferi F. (Homoptera: Cicadidae)
Popillia quadrigutta Fabricino (Coleoptera: Scarabaeidae)
Potosia brevitarsis (Lewis) (Coleoptera: Scarabaeidae)
Proagopertha lucidula Falderman (Coleoptera: Scarabaeidae)
Prociphilus oriens Mordvilko (Homoptera: Aphididae)
Psylla aili Yang & Li (Homoptera: Psyllidae)
Psylla betulaefoliae Yang & Li (Homoptera: Psyllidae)
Psylla cangshanli Yang & Li (Homoptera: Psyllidae)
Psylla changli Yang & Li (Homoptera: Psyllidae)
Psylla chinensis Yang & Li (Homoptera: Psyllidae)

Psylla dianli Yang & Li (Homoptera: Psyllidae)
Psylla erhaili Yang & Li (Homoptera: Psyllidae)
Psylla heterobetulaefoliae Yang & Li (Homoptera: Psyllidae)
Psylla kunmingli Yang & Li (Homoptera: Psyllidae)
Psylla liaoli Yang & Li (Homoptera: Psyllidae)
Psylla phaeocarpae Yang & Li (Homoptera: Psyllidae)

PATHOGENS

- Alternaria gaisen* Nagano (Fungi Imperfecti: Hyphomycetes)
Ascochyta prunicola P. K. Chi (Fungi Imperfecti: Coelomyetes)
Cercospora piricola Saw. (Fungi Imperfecti: Hyphomycetes)
Coniothyrium piricola Poteb. (Fungi Imperfecti: Coelomyetes)
Coniothyrium tirolensis Bub. (Fungi Imperfecti: Coelomyetes)
Cytospora carphosperma Sacc. (Fungi Imperfecti: Coelomyetes)
Helicobasidium mompa Tanaka (Basidiomycetes: Auriculariales)
Monilinia fructigena Honey in Whetzel (Discoymcetes: Helotiales)
Mycosphaerella pomacearum (Corda) Sacc. (Loculoascomycetes: Dothideales)
Phomopsis fukushii Tanaka et Endo (Fungi Imperfecti: Coelomyetes)
Phyllactinia pyri-serotinae Saw. (Pyrenomycetes: Erysiphales)
Phyllosticta pirina Sacc. (Fungi Imperfecti: Coelomyetes)
Polystigma rubra Sacc. (Pyrenomycetes: Phyllachorales)

VIRUSES

- Pear rusty skin viroid

6. Quarantine Pests Likely to Follow Pathway

Table 4. Quarantine Pests Likely to Follow Pathway - <i>Pyrus</i>
<p>ARTHROPODA</p> <p><i>Bactrocera dorsalis</i> Hendel (Diptera: Tephritidae) <i>Carposina sasakii</i> Matsumura (Lepidoptera: Carposinidae) <i>Conogethes punctiferalis</i> Guenee (Lepidoptera: Pyralidae) <i>Cydia funebrana</i> (Treitschke) (Lepidoptera: Tortricidae) <i>Cydia inopinata</i> (Heinrich) (Lepidoptera: Tortricidae) <i>Numonia pirivorella</i> Matsumura (Lepidoptera: Pyralidae) <i>Rhynchites foveipennis</i> Fairm. (Coleoptera: Rhynchitidae) <i>Rhynchites heros</i> Roel (Coleoptera: Rhynchitidae) <i>Tetranychus kanzawai</i> Kishida (Acarina: Tetranychidae) <i>Tetranychus viennensis</i> Zacher (Acarina: Tetranychidae)</p> <p>PATHOGENS</p> <p><i>Alternaria gaisen</i> Nagano <i>Monilinia fructigena</i> Honey in Whetzel <i>Mycosphaerella pomacearum</i> (Corda) Sacc.</p> <p>VIRUSES</p> <p>Pear rusty skin viroid</p>

Other organisms in this Assessment, not chosen for further scrutiny, may be potentially detrimental to the agricultural production systems of the United States. However, there were a variety of reasons for not subjecting them to further analysis, *e.g.*, they may be associated with the commodity (however, it was not considered reasonable to expect these pests to remain with the commodity during processing); they have been intercepted, as biological contaminants, by PPQ Officers during inspections of these commodities and would not be expected to be found with every shipment. Usually, the biological hazard of organisms identified only to the generic level are not assessed due to the lack of adequate biological/taxonomic information. This lack of biological information on any given insect or pathogen should not be equated with low risk. By necessity, pest risk assessments focus on those organisms for which biological information is available. By developing detailed assessments for known pests that inhabit a variety of niches on the parent species, *i.e.*, on the surface of or within the bark/wood, on the foliage, etc., effective mitigation measures can subsequently be developed to eliminate the known organism and any similar unknown ones that inhabit the same niches.

7. Economic Importance: Consequences of Introduction

Pests rated for potential economic importance are evaluated against five biological factors. The cumulative score for these elements is the Risk Rating (USDA, 1995).

Pest	Climate/ Host	Host Range	Dispersal	Economic	Environ- mental	Risk Rating
<i>Bactrocera dorsalis</i>	High	High	High	Medium	Medium	High
<i>Carposina sasakii</i>	High	Medium	High	Medium	Medium	High
<i>Conogethes punctiferalis</i>	High	High	High	Medium	Medium	High
<i>Cydia funebrana</i>	High	High	Medium	Medium	Medium	High
<i>Cydia inopinata</i>	High	High	Medium	Medium	Medium	High
<i>Numonia pirivorella</i>	High	Low	High	Medium	Medium	Medium
<i>Rhynchites foveipennis</i>	High	High	Medium	Medium	Medium	High
<i>Rhynchites heros</i>	High	High	Medium	Medium	Medium	High
<i>Tetranychus kanzawai</i>	High	High	High	Medium	Medium	High
<i>Tetranychus viennensis</i>	High	High	High	Medium	Medium	High
<i>Alternaria gaisen</i>	High	Low	Low	Medium	Medium	Medium
<i>Monilinia fructigena</i>	High	Medium	High	Medium	Medium	High
<i>Mycosphaerella pomacearum</i>	?	?	?	?	?	?
Pear rusty skin viroid	High	Medium	Low	Medium	Low	Medium

8. Likelihood of Introduction

The likelihood of introduction for a pest is rated relative to six factors (Tables 6 and 7) (USDA, 1995)

Table 6: Amount of Commodity Shipped	
Number of 40' Containers Annually	Rating
10 - 100	Medium

Table 7: Risk Rating - Likelihood of Introduction						
Pest	Likelihood of surviving postharvest treatment	Likelihood of surviving shipment	Likelihood of not being detected at port of entry	Likelihood of moving to suitable habitat	Likelihood of finding suitable hosts	Risk Rating
<i>Bactrocera dorsalis</i>	High	High	High	High	High	High
<i>Carposina sasakii</i>	High	High	High	High	High	High
<i>Conogethes punctiferalis</i>	High	High	High	High	High	High
<i>Cydia funebrana</i>	Low	High	High	High	High	High
<i>Cydia inopinata</i>	Low	High	High	High	High	High
<i>Numonia pirivorella</i>	Low	High	High	High	Low	Medium
<i>Rhynchites foveipennis</i>	Low	High	High	High	High	High
<i>Rhynchites heros</i>	Low	High	High	High	High	High
<i>Tetranychus kanzawai</i>	High	High	High	High	High	High
<i>Tetranychus viennensis</i>	High	High	High	High	High	High
<i>Alternaria gaisen</i>	High	High	Medium	High	Medium	High
<i>Monilinia fructigena</i>	High	High	High	Medium	Medium	High
<i>Mycosphaerella pomacearum</i>	?	?	?	?	?	?
Pear rusty skin viroid	High	High	High	High	Low	Medium

9. Pest Risk Potential

Pest Risk Potential is the combination of the consequences and likelihood of introductions (Tables 5, 6 and 7) (USDA, 1995).

Table 8: Pest Risk Potential	
Pest	Pest Risk Potential
<i>Bactrocera dorsalis</i>	High
<i>Carposina sasakii</i>	High
<i>Conogethes punctiferalis</i>	High
<i>Cydia funebrana</i>	High
<i>Cydia inopinata</i>	High
<i>Numonia pirivorella</i>	Medium
<i>Rhynchites foveipennis</i>	High
<i>Rhynchites heros</i>	High
<i>Tetranychus kanzawai</i>	High
<i>Tetranychus viennensis</i>	High
<i>Alternaria gaisen</i>	High
<i>Monilinia fructigena</i>	High
<i>Mycosphaerella pomacearum</i>	?
Pear rusty skin viroid	Medium

Phytosanitary Measures

The summation of the Consequences and Likelihood of Introductions (Tables 5, 6 and 7) yields the Pest Risk Potential (PRP). Pests rated with Low PRPs may require only Port of Entry inspection to maintain phytosanitary security. However, pests with Medium to High PRPs may require phytosanitary measures more stringent than those provided, solely, by Port of Entry inspections.

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