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Pest List for the Importation of Fragrant Pear (*Pyrus ×sinkiangensis* Yü) from Xinjiang, China, into the United States

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Background and Summary

This pest list was developed in response to a request by the Department of Supervision on Animal and Plant Quarantine, General Administration of Quality Supervision, Inspection and Quarantine of China in December 2014 for USDA authorization to permit imports of Korla fragrant pear, *Pyrus × sinkiangensis* Yü (cultivar Korla Xiangli or Kuerlexiangli), from an expanded production area to include Korla and the adjacent Akesu region of Xinjiang Province. The request was for market access to the entire United States (all 50 states and territories).

A total of 24 pests (16 arthropods and eight plant pathogens) was found to infest or infect *P. sinkiangensis* and to occur in Xinjiang. Of these, two arthropods, the soft scale, *Eulecanium circumfluum* Borchsenius, and the pyralid moth, *Euzophera pyriella* Yang, were identified as quarantine pests likely to follow the import pathway.

Armored scales (Hemiptera: Diaspididae) are non-actionable at U.S. ports-of-entry on fruit and vegetables intended for consumption (NIS, 2008). Even if armored scale species are not present in the PRA area, PPQ considers them non-actionable on fruit and vegetables for consumption because these insects are highly unlikely to establish via this pathway due to their very limited ability to disperse to new host plants (Miller et al., 1985; PERAL, 2007). For this reason, armored scales were not included in Table 1.

Of those pests with non-quarantine status with regard to the continental United States, only one is established in Hawaii, American Samoa, Guam, Puerto Rico, or the U.S. Virgin Islands. Pests that are not established in these areas include *Tetranychus turkestanii* (Ugarov & Nikolskii), *Parthenolecanium corni* (Bouché), *Chloroclystis rectangulata* (L.), *Cydia pomonella* (L.), Apple scar skin viroid, Apple chlorotic leaf spot trichovirus, Apple stem grooving capillovirus, Apple stem pitting virus, *Cytospora ceratosperma* (Tode) Adams & Rossman, and *C. leucosperma* (Pers.: Fr.) Fr.

Pests in Xinjiang, China, associated with fragrant pear (*Pyrus ×sinkiagensis* Yü). Species of concern (i.e., quarantine pests likely to follow the pathway) are highlighted.

Species	Distribution in Xinjiang	Distribution in United States ¹	Plant Part Affected	Quarantine Pest ²	Likely to Follow Pathway ³	References
ACARI						
Tetranychidae						
<i>Amphitetranychus viennensis</i> (Zacher) ⁴	Korla	None	Leaf	Yes	No	Jiang et al. (2012)
<i>Eotetranychus pruni</i> (Oudemans)	Korla	None ⁵	Leaf	Yes	No	Alford (2007); Garland (1995)
<i>Tetranychus turkestani</i> (Ugarov & Nikolskii)	Korla	CONUS	Leaf	No	No	Garland (1995); Jeppson et al. (1975)
HOMOPTERA						
Aphididae						
<i>Schizaphis piricola</i> (Matsumura)	Korla	None	Leaf, stem	Yes	No	Blackman & Eastop (1994); Garland (1995)
Coccidae						
<i>Eulecanium circumfluum</i> Borchsenius	Akesu, Korla	None	Fruit, leaf, stem	Yes	Yes	Garland (1995); Liang et al. (1999); Yang et al. (2008)
<i>Eulecanium giganteum</i> (Shinji)	Akesu, Korla	None	Leaf, stem	Yes	No	Xue et al. (2004); Yue et al. (2013)
<i>Parthenolecanium corni</i> (Bouché)	Akesu, Korla	CONUS	Fruit, leaf, stem	No	Yes	García et al. (2016); Garland (1995); Liang et al. (1999); Yang et al. (2008)
<i>Rhodococcus turanicus</i> (Archangelskaya)	Korla	None	Leaf, stem	Yes	No	Garland (1995); Yang et al. (2008)
Psyllidae						
<i>Cacopsylla chinensis</i> (Yang & Li)	Korla	None	Flower, leaf, stem	Yes	No	Jiang et al. (2003)

Species	Distribution in Xinjiang	Distribution in United States ¹	Plant Part Affected	Quarantine Pest ²	Likely to Follow Pathway ³	References
<i>Cacopsylla jiangli</i> (Yang & Li)	Hotan, Shufu, Shule, Yining	None	Leaf ⁷	Yes	No	Li (2011); Yang & Li (1981)
HYMENOPTERA						
Cephididae						
<i>Janus piri</i> Okamoto & Muramatsu	Korla	None	Stem	Yes	No	Garland (1995); Liu (2001)
<i>Janus piriodorus</i> Yang	Akesu, Korla	None	Stem	Yes	No	Guo et al. (2001)
LEPIDOPTERA						
Geometridae						
<i>Apocheima cinerarius</i> (Erschoff)	Korla	None	Leaf	Yes	No	Dai & Zhu (1979); Yahepu Musha (2013)
<i>Chloroclystis rectangulata</i> (L.)	Korla	CONUS	Flower, fruit, leaf	No	No ⁸	Ferguson (1996); Garland (1995)
Pyralidae						
<i>Euzophera pyriella</i> Yang	Akesu, Korla	CONUS	Fruit, stem, seed	Yes	Yes	Hou et al. (2013); Song et al. (1994)
Tortricidae						
<i>Cydia pomonella</i> (L.)	Akesu, Korla	CONUS	Fruit	No	Yes	CABI (2016); Garland (1995); Lin et al. (2006)
VIROID						
Apple scar skin (Pospiviroidae)	Korla	CONUS	Fruit, stem	No	Yes	CABI/EPPO (2012); Kyriakopoulou et al. (2003); Ni et al. (2012)
VIRUSES						
Apple chlorotic leaf spot (Betaflexiviridae)	Korla	CONUS	Probably all parts	No	Yes	Brunt et al. (1996); Ni et al. (2012)
Apple stem grooving (Betaflexiviridae)	Korla	CONUS	Root, stem ⁹	No	No	Brunt et al. (1996); Ni et al. (2012)
Apple stem pitting (Betaflexiviridae)	Korla	CONUS	All parts	No	Yes	Brunt et al. (1996); Zhao et al. (2009)

Species	Distribution in Xinjiang	Distribution in United States ¹	Plant Part Affected	Quarantine Pest ²	Likely to Follow Pathway ³	References
FUNGI						
<i>Botrytis cinerea</i> Pers.: Fr. (Ascomycetes: Helotiales)	Korla	CONUS, HI, PR, VI	Fruit	No	Yes	Farr & Rossman (2017); Zhang et al. (2014)
<i>Cytospora ceratosperma</i> (Tode) Adams & Rossman (= <i>Valsa ceratosperma</i> [Tode] Maire) (Ascomycetes: Diaporthales)	Akesu	CONUS	Stem	No	No	Farr & Rossman (2017); Hou et al. (2015)
<i>Cytospora leucosperma</i> (Pers.: Fr.) Fr. (= <i>C. ambiens</i> Sacc., <i>C. carphosperma</i> Fr.) (Ascomycetes: Diaporthales)	Korla	CONUS	Stem	No	No	Farr & Rossman (2017); Garland (1995)
<i>Stemphylium pyrinum</i> Yong Wang bis & X.G. Zhang (Ascomycetes: Pleosporales)	Korla	None	Leaf	Yes	No	Wang et al. (2009)

¹Distribution in United States: CONUS = continental United States, HI = Hawaii, PR = Puerto Rico, VI = U.S. Virgin Islands

²As defined in IPPC (2017). Refers to quarantine status with respect to continental United States only.

³Consignments of fragrant pear fruit constitute the pathway.

⁴Given as *Tetranychus viennensis* Zacher, a synonym (Bolland et al., 1998).

⁵A record for the United States in Bolland et al. (1998) is erroneous, based on a misinterpretation of the cited evidence (Pritchard & Baker, 1955).

⁶Occurrence in Hawaii (García et al., 2016) is considered doubtful (Nishida, 2002).

⁷Plant part typically attacked by species of *Cacopsylla* [e.g., *C. pyri* L. (Fotirić Akšić et al., 2015)].

⁸Larvae may feed on developing fruit (Garland, 1995), but would not be expected to occur on mature fruit at harvest. The species appears mainly to be a flower-feeder (Carter, 1984; Alford, 2007).

⁹Probably in the cambium of hosts, according to Brunt et al. (1996 onwards).

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