USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Importation of apple (*Malus* spp.) from Belgium, Canada, France, Germany, Italy, the Netherlands, and the United Kingdom into the United States for planting

A Qualitative, Pathway Initiated Pest Risk Assessment

Version 3

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Executive Summary

The purpose of this report is to assess the pest risks associated with importing commercially produced unrooted, dormant cuttings of apple, *Malus* spp. (Rosaceae), from Belgium, Canada, France, Germany, Italy, the Netherlands, and the United Kingdom into the United States for planting.

Based on the internal request submitted by Plant Protection and Quarantine (PPQ), we considered the pathway to include the following processes and conditions: commercially produced dormant, unrooted cuttings of *Malus* spp. (with buds) stored and shipped in moisture-retaining containers such as plastic bags, which may or may not contain moistened paper towels (or any other APHIS-approved packing material). The pest risk ratings depend on the application of all conditions of the pathway as described in this document; *Malus* spp. cuttings produced under different conditions were not evaluated and may pose a different pest risk.

We used scientific literature, port-of-entry pest interception data, and information from the government of Belgium, Canada, France, Germany, Italy, the Netherlands, and the United Kingdom to develop a list of pests with quarantine significance for the United States. These are pests that occur in Belgium, Canada, France, Germany, Italy, the Netherlands, and the United Kingdom on any host and are associated with the commodity plant species anywhere in the world.

The following organisms are candidates for pest risk management because they have met the threshold for unacceptable consequences of introduction and can follow the commodity import pathway.

Pest type	Taxonomy	Scientific name
Insect	Coleoptera: Buprestidae	*Agrilus sinuatus* (Olivier)*
Insect	Coleoptera: Cerambycidae	*Anoplophora chinensis* (Förster)
Insect	Coleoptera: Curculionidae	*Anthonomus pyri* Kollar
Insect	Diptera: Cecidomyiidae	*Resseliella oculiperda* (Rübsaamen)
Insect	Hemiptera: Aphididae	*Dysaphis devecta* (Walker)
Insect	Hemiptera: Aphididae	*Dysaphis pyri* (Boyer de Fonscolombe)
Insect	Hemiptera: Aphididae	*Pterochloroides persicae* (Cholodkovsky)
Insect	Hemiptera: Aphididae	*Rhopalosiphum oxyacanthae* (Schrank)*
Insect	Hemiptera: Cicadellidae	*Alnetoidia alneti* (Dahlbom)
Insect	Hemiptera: Cicadellidae	*Cicadella viridis* (L.)
Insect	Hemiptera: Cicadellidae	*Edwardsiana crataegi* (Douglas)
Insect	Hemiptera: Cicadellidae	*Typhlocyba quercus* (F.)
Insect	Hemiptera: Coccidae	*Ceroplastes japonicus* Green
Insect	Hemiptera: Coccidae	*Ceroplastes rubens* Maskell
Insect	Hemiptera: Coccidae	*Ceroplastes rusci* (L.)*
Insect	Hemiptera: Coccidae	*Eulecanium ciliatum* (Douglas)
Insect	Hemiptera: Coccidae	*Eulecanium tiliae* (L.)*
Insect	Hemiptera: Coccidae	*Palaeolecanium bituberculatum* (Signoret)
Insect	Hemiptera: Coccidae	*Sphaerolecanium prunastri* (Boyer de Fonscolombe)*

Pest type	Taxonomy	Scientific name
Insect	Hemiptera: Coccidae	*Takahashia japonica* (Cockerell)
Insect	Hemiptera: Diaspididae	*Diaspidiotus marani* (Zahradnik)
Insect	Hemiptera: Diaspididae	*Diaspidiotus pyri* (Lichtenstein)
Insect	Hemiptera: Diaspididae	*Melanaspis inopinata* (Leonardi)
Insect	Hemiptera: Diaspididae	*Suturaspis archangelskyae* (Lindinger)
Insect	Hemiptera: Miridae	*Apolygus spinolae* (H. Meyer-Dür)
Insect	Hemiptera: Miridae	*Blepharidopterus angulatus* (Fallen)
Insect	Hemiptera: Miridae	*Lygocoris rugicollis* (Fallén)
Insect	Hemiptera: Miridae	*Orthotylus marginalis* Reuter
Insect	Hemiptera: Monophlebidae	*Icerya seychellarum* (Westwood)
Insect	Hemiptera: Pseudococcidae	*Pulvinaria regalis* (Canard)
Insect	Hemiptera: Psyllidae	*Cacopsylla mali* (Schmidberger)
Insect	Hemiptera: Psyllidae	*Cacopsylla melanoneura* (Foerster)
Insect	Hemiptera: Psyllidae	*Cacopsylla pyri* (L.)
Insect	Hemiptera: Tingidae	*Stephanitis pyri* (Fabricius)
Insect	Hymenoptera: Cephidae	*Janus compressus* (Fabricius)
Insect	Lepidoptera: Agonoxenidae	*Blastodacna atra* (Haworth)
Insect	Lepidoptera: Coleophoridae	*Coleophora hemerobiella* (Scopoli)
Insect	Lepidoptera: Cossidae	*Cossus cossus* L.
Insect	Lepidoptera Erebidae	*Euproctis similis* (Fuessly)
Insect	Lepidoptera: Erebidae	*Lymantria monacha* L.
Insect	Lepidoptera: Geometridae	*Erannis defoliaria* (Clerck)
Insect	Lepidoptera: Geometridae	*Pasiphila rectangulata* (L.)*
Insect	Lepidoptera: Lasiocampidae	*Gastropacha quercifolia* (L.)
Insect	Lepidoptera: Lasiocampidae	*Malacosoma neustria* (L.)
Insect	Lepidoptera: Lyonetiidae	*Leucoptera malifoliella* (Costa)
Insect	Lepidoptera: Noctuidae	*Acronicta psi* (L.)
Insect	Lepidoptera: Noctuidae	*Acronicta tridens* (Denis & Schiffermüller)
Insect	Lepidoptera: Noctuidae	*Allophyes oxyacanthae* (L.)
Insect	Lepidoptera: Noctuidae	*Cosmia pyralina* (Denis & Schiffermüller)
Insect	Lepidoptera: Noctuidae	*Cosmia trapezina* (L.)
Insect	Lepidoptera: Noctuidae	*Diloba caeruleocephala* (L.)
Insect	Lepidoptera: Pyralidae	*Cryptoblabes gnidiella* (Millière)
Insect	Lepidoptera: Sesiidae	*Synanthedon myopaeformis* (Borkhausen)*
Insect	Lepidoptera: Tortricidae	*Acleris holmiana* (L.)*
Insect	Lepidoptera: Tortricidae	*Acleris rhombana* (Denis & Schiffermüller)*
Insect	Lepidoptera: Tortricidae	*Archips crataegana* (Hübner)
Insect	Lepidoptera: Tortricidae	*Archips podana* Scopoli*
Insect	Lepidoptera: Tortricidae	*Archips rosana* (L.)*
Insect	Lepidoptera: Tortricidae	*Archips xylosteana* (L.)
Insect	Lepidoptera: Tortricidae	*Argyrotaenia ljungiana* (Thunberg)
Insect	Lepidoptera: Tortricidae	*Cacoecimorpha pronubana* (Hübner)*
Insect	Lepidoptera: Tortricidae	*Choristoneura hebenstreitella* (Müller)
Insect	Lepidoptera: Tortricidae	*Enarmonia formosana* Scopoli*
Insect	Lepidoptera: Tortricidae	*Exapate congelatella* (Clerck)
Insect	Lepidoptera: Tortricidae	*Grapholita funebrana* (Treitschke)
Insect	Lepidoptera: Tortricidae	*Grapholita lobarzewskii* Nowicki
Insect	Lepidoptera: Tortricidae	*Hedya nubiferana* Haworth*

Pest type	Taxonomy	Scientific name
Insect	Lepidoptera: Tortricidae	*Neosphaleroptera nubilana* (Hübner)
Insect	Lepidoptera: Tortricidae	*Pammene argyrana* (Hübner)
Insect	Lepidoptera: Tortricidae	*Pammene rhediella* (Clerck)
Insect	Lepidoptera: Tortricidae	*Pandemis cerasana* (Hübner)*
Insect	Lepidoptera: Yponomeutidae	*Agyresthia pruniella* (Clerck)*
Insect	Lepidoptera: Zygaenidae	*Aglaope infausta* (L.)
Insect	Orthoptera: Tettigoniidae	*Leptophyes punctatissima* (Bosc)
Insect	Thysanoptera: Thripidae	*Thrips flavus* Schrank
Mite	Prostigmata: Tetranychidae	*Bryobia graminum* (Schrank)
Mite	Acari: Tenuipalpidae	*Cenopalpus pulcher* (Canestrini & Fanzago)*
Mite	Acari: Tetranychidae	*Amphitetranychus viennensis* (Zacher)
Mite	Acari: Tetranychidae	*Eotetranychus pruni* (Oudemans)*
Fungus	Leotiomycetes: Helotiales	*Cadophora luteo-olivacea* (J.F.H. Beyma) T.C. Harr. & McNew*
Fungus	Ascomycetes: Phyllachorales	*Colletotrichum godetiae* Neerg.
Fungus	Sordariomycetes: Glomerellales	*Colletotrichum nymphaeae* (Pass.) Aa*
Fungus	Sordariomycetes: Glomerellales	*Colletotrichum salicis* (Fuckel) Damm, P.F. Canon & Crous
Fungus	Ascomycetes: Helotiales	*Monilinia fructigena* Honey ex Whetzel
Fungus	Dothideomycetes: Botryosphaeriales	*Neofusicoccum luteum* (Pennycook & Samuels) Crous, Slippers & A.J.L. Phillips*
Fungus	Dothideomycetes: Botryosphaeriales	*Neofusicoccum ribis* (Slippers, Crous & M.J. Wingf.) Crous, Slippers & A.J.L. Phillips
Fungus	Ascomycetes: Erysiphales	*Phyllactinia mali* (Duby) U. Braun*
Chromistan	Oomycetes: Peronosporales	*Phytophthora cambivora* (Petri) Buisman
Chromistan	Oomycetes: Peronosporales	*Phytophthora syringae* (Berk.) Kleb.*
Bacterium	Mollicutes: Acholeplasmatales	'*Candidatus* Phytoplasma mali'
Viroid	Pospiviroidae	*Apscaviroid fossulamali*
Viroid	Pospiviroidae	*Apscaviroid pustulapyri*
Virus	Phenuiviridae	*Coguvirus citri**
Virus	Betaflexiviridae	*Foveavirus* Apple green crinkle associated virus
Virus	Phenuiviridae	*Rubodvirus mali*
Virus	Phenuiviridae	*Rubodvirus prosserense**

*This applies only to Hawaii or the U.S. territories.

The following organisms are likely to follow the pathway but were not assessed in this document because they have already been determined to pose an unacceptable risk to the United States. Domestic regulations are in place for these pests:

Pest type	Taxonomy	Scientific name	Code of Federal Regulations
Insect	Lepidoptera: Erebidae	*Lymantria dispar* (L.)	7 CFR § 301.45

The detailed examination and choice of appropriate phytosanitary measures to mitigate pest risk are addressed in a separate document.

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1. Introduction

1.1. Background

The purpose of this report is to present PPQ's assessment of the pest risk associated with the importation of commercially produced dormant, unrooted cuttings of apple (*Malus* spp. Mill.) from Belgium, Canada, France, Germany, Italy, the Netherlands, and the United Kingdom (referred to as the export area) into the United States[1] (referred to as the pest risk analysis or PRA area) for planting.

This is a qualitative risk assessment. The likelihood of pest introduction is expressed as a qualitative rating rather than using numerical terms. This methodology is consistent with guidelines provided by the International Plant Protection Convention (IPPC) in the International Standard for Phytosanitary Measures (ISPM) No. 11, "Pest Risk Analysis for Quarantine Pests" (IPPC, 2021). The use of biological and phytosanitary terms is consistent with ISPM No. 5, "Glossary of Phytosanitary Terms" (IPPC, 2023).

As defined in ISPM No. 11, this document comprises Stage 1 (Initiation) and Stage 2 (Risk Assessment) of risk analysis. Stage 3 (Risk Management) will be covered in a separate document.

1.2. Initiating event

The importation of plants for planting into the United States is regulated under Title 7 of the Code of Federal Regulation, Part 319 Subpart – Plants for Planting (7 CFR §319.37) and as described in the Agricultural Commodity Import Requirements. Under this regulation, the entry of *Malus* spp. from Canada is generally admissible; from Belgium, France, Germany, and the Netherlands requires post-entry quarantine; and from Italy and the United Kingdom into the PRA area is not authorized. This commodity risk assessment was initiated in response to a request by PPQ; the results will be used to support a technical review of the regulations.

1.3. Potential weediness of the commodity

In some cases, an imported commodity could become invasive in the PRA area. If warranted, we analyze the commodity for weed risk. A weed risk analysis is not required when (a) the commodity is already enterable into the PRA area from other countries, (b) the commodity plant species is widely established or cultivated in the PRA area, or (c) the imported plant part(s) cannot easily propagate on its own or be propagated. We determined that the weed risk of *Malus* spp., does not need to be analyzed because apple trees are widely cultivated in the United States (USDA-NRCS, 2024).

1.4. Description of the pathway

A pathway is "any means that allows the entry or spread of a pest" (IPPC, 2023). In the context of this document, the pathway is the commodity to be imported. The following description includes those conditions and processes the commodity undergoes from production through importation and distribution that may have an impact on pest risk and therefore were considered in our assessment. Commodities produced under different conditions were not considered.

1.4.1. Description of the commodity

The specific pathway of concern is the importation of apple tree unrooted cuttings for planting.

1.4.2. Summary of the production, harvest, post-harvest, shipping, and storage conditions considered

[1]The *United States* includes all states, the District of Columbia, Guam, the Northern Mariana Islands, Puerto Rico, the U.S. Virgin Islands, and any other territory or possession of the United States.

Production, harvesting, shipping and storage practices in the exporting country were not considered when compiling this pest list with the following exceptions: the cuttings will be unrooted and dormant with buds and we assumed the plants will be stored and shipped in moisture-retaining containers such as plastic bags, which may or may not contain moistened paper towels (or another APHIS-approved packing material).

2. Pest List and Pest Categorization

The pest list is a compilation of plant pests of quarantine significance to the United States. This list includes pests that are present in Belgium, Canada, France, Germany, Italy, the Netherlands, and the United Kingdom on any host and are known to be associated with *Malus* spp. anywhere in the world. Pests are considered quarantine significant if they (a) are not present in the PRA area, (b) are actionable at U.S. ports of entry, (c) are under federal official control, or (d) require evaluation for regulatory action. Consistent with ISPM No. 5, pests that meet any of these definitions are considered "quarantine pests" and are candidates for analysis. Species with a reasonable likelihood of following the pathway into the PRA area are analyzed to determine their pest risk potential.

2.1. Pest list

We developed the pest list based on scientific literature, port-of-entry pest interception data, and information provided by the government of Belgium, Canada, France, Germany, Italy, the Netherlands, and the United Kingdom. We listed the pests that are of quarantine significance to the PRA area in Table 1. For each pest, we provided evidence for the pest's presence in Belgium, Canada, France, Germany, Italy, Netherlands, and the United Kingdom and its association with *Malus* spp. We indicated the plant parts with which the pest is generally associated and, if applicable, provided information about the pest's distribution in the United States. Pests that are likely to remain associated with the harvested commodity in a viable form are indicated by bolded text and are listed separately in Table 2.

Table 1. List of quarantine pests associated with *Malus* spp. anywhere in the world and present in Belgium (BE), Canada (CAN), France (FR), Germany (GE), Italy (IT), the Netherlands (NE), and the United Kingdom (UK) on any host.

Pest name	Presence in BE, CAN, FR, GE, IT, NE, or UK	Host association	Plant part (s)	Notes
INSECT: Coleoptera: Bostrichidae: *Apate monachus* F.	FR, GE, NE (Borowski, 2007; Nemeth et al., 2015), IT (Bonsignore, 2012)	(Avidov and Harpaz, 1969; Bonsignore, 2012; Cocuzza et al., 2016; Luciano, 1982)	Branches, trunks (Bonsignore, 2012), based on general biology of this species	The eggs and larvae of this species are unlikely to follow the pathway because they occur only on dead wood or wilting trees (Avidov and Harpaz, 1969; Bonsignore, 2012), which are unlikely to be exported.
INSECT: Coleoptera: Buprestidae: *Agrilus sinuatus* (Olivier)	**BE (Fassotte et al., 2004), FR (Prudhomme, 2010), GE (Jancke, 1949),**	**(Alford, 2014; Jancke, 1949)**	**Leaves, bark (Alford, 2014; Jancke, 1949)**	**Present in the continental United States (Jendek and Grebennikov, 2009). Mainly a pest of pear**

	NE (Leefmans, 1950)			**but also infests apple (Alford, 2014). Eggs are cemented to the bark of twigs, branches, and trunk (Glasgow, 1934). Larvae feed beneath the bark and overwinter in the tree (Alford, 2014; Glasgow, 1934; Jancke, 1949). Therefore, they could be in dormant trees.**
INSECT: Coleoptera: Byturidae: *Byturus tomentosus* (DeGeer)	BE, FR, GE, NE (Springer and Goodrich, 1986), NE (Cuppen and Drost, 2005)	(Gordon et al., 1997)	Fruit, leaves, flowers (not *Malus* specifically) (Alford, 2014; Springer and Goodrich, 1986)	None.
INSECT: Coleoptera: Cerambycidae: *Anoplophora chinensis* (Förster); syn. *A. malasiaca* (Thomson)	**FR (EPPO, 2018), IT (Hérard et al., 2006)**	**(Adachi, 1994; Sjöman et al., 2014)**	**Leaves (adult), bark, stem (Haack, 2006; Sjöman et al., 2014), trunks (Hérard et al., 2006)**	**Larvae feed for an extended time under the bark and in the xylem and pupate within the tree (Adachi, 1994; Sjöman et al., 2014). Larvae have been found in *Acer* sp. stems with a diameter of approximately 1 cm (Van der Gaag et al., 2010). Therefore, this pest could be in dormant trees.**
INSECT: Coleoptera: Cerambycidae: *Tetrops praeusta* (L.)	BE (Drumont et al., 2012), UK (Twinn and Harding, 1999)	(Alford, 2014; Andreev et al., 2006; Massee, 1954)	Foliage (adults), dead twigs and stems (Alford, 2014)	This species is present in Maine (Howden and Howden, 2000).
INSECT: Coleoptera: Cerambycidae: *Trichoferus campestris* (Faldermann), syn. *Hesperophanes campestris* Faldermann	CAN (regulated) (Bullas-Appleton et al., 2014; CFIA, 2022)	(Everatt et al., 2015)	Large branches, trunks of mature trees (based on general behavior) (Bullas-Appleton et al., 2014;	Quarantine only for Hawaii, Puerto Rico, or other U.S. Territories (ARM, 2024).

			Everatt et al., 2015)	
INSECT: Coleoptera: Curculionidae: *Anthonomus pomorum* (L.)	BE (Bangels et al., 2008; Delbol, 2013), FR (Haran et al., 2013), GE (Dieckmann, 1988; Gottwald, 2000; Schneider, 2016), NE (Heijerman, 1993; Markó et al., 2008), UK (Dicker, 1946)	(Alford, 2014; Andreev et al., 2006; Bangels et al., 2008; Dicker, 1946; Dieckmann, 1968; Dieckmann, 1988; Gottwald, 2000; Markó et al., 2008; Sutton et al., 2014)	Bark, buds, flowers, foliage (Alford, 2014; Sutton et al., 2014)	The apple blossom weevil is not associated with dormant twigs; eggs are laid from bud burst onwards (Alford, 2014).
INSECT: Coleoptera: Curculionidae: *Anthonomus pyri* Kollar	**BE, FR, GE, NE (Dieckmann, 1968)**	**(Dieckmann, 1988; Psota and Šťastná, 2016)**	**Bark, buds, leaves (Alford, 2014; Dieckmann, 1968; Dieckmann, 1988; Martinez, 2006)**	**Eggs laid within flower buds, where the larvae feed and pupate. This species may overwinter within the buds as either eggs or larvae (Alford, 2014; Dieckmann, 1988; Martinez, 2006). Therefore, it could be present on dormant trees.**
INSECT: Coleoptera: Curculionidae: *Orchestes fagi* (L.); syn. *Rhynchaenus fagi* (L.)	BE (Sioen et al., 2008), CAN (Sweeney et al., 2012), FR (Chauvin et al., 1976), GE (Dieter, 1964), NE (Moraal, 1999)	(Bajec, 2011; Dieter, 1964)	Fruit (Bajec, 2011; Dieter, 1964), leaves (Bajec, 2011)	None.
INSECT: Coleoptera: Curculionidae: *Trypodendron domesticum* (L.)	BE (Gaubicher et al., 2002), CAN (Humble and Henry, 2004), FR (Lassauce et al., 2012), GE (Metzler and Hecht, 2006), IT (Haack and Rabaglia, 2013), UK (Piper and Allen, 2020)	(Hiskes, 2013)	Trunk, under bark (Hiskes, 2013)	This species feeds under bark, in galleries, of dead and dying trees (Hiskes, 2013; Shaw, 1960). This species is present in the continental United States (Georgia, and Washington) (Hiskes, 2013).

INSECT: Coleoptera: Rhynchitidae: *Neocoenorrhinus pauxillus* (Germar)	BE (Delbol, 2013), IT (Ghahari and Colonnelli, 2019), NE (Cuppen, 2012b; Markó et al., 2010)	(Alford, 2014; Markó et al., 2010)	Leaves (Alford, 2014)	None.
INSECT: Coleoptera: Rhynchitidae: *Rhynchites aequatus* (L.), syn. *Neocoenorrhinus aequatus* (L.), *Tatianaerhynchites aequatus* L.	BE (Crevecoeur et al., 2004), FR (Audras, 1959), GE (Matern, 2002), IT (Contarini, 1997), NE (Koomen, 1998), UK (Hodge, 2011; Ward, 1969)	(Alford, 2014; Leather, 1996)	Fruit, buds, flowers (Alford, 2014; Leather, 1996)	Primarily a fruit pest, does not overwinter on associated commodity (Alford, 2014).
INSECT: Coleoptera: Rhynchitidae: *Rhynchites bacchus* (L.)	BE, FR, GE, NE (Legalov and Friedman, 2007), IT (Contarini, 1997), UK (Legalov and Friedman, 2007)	(Alford, 2014; De Stefani, 1918)	Fruit, buds (Alford, 2014)	Adults are external feeders on buds; eggs are laid in fruitlets (Alford, 2014) that would not be present on dormant trees.
INSECT: Coleoptera: Scarabaeidae: *Melolontha hippocastani* F	BE (Delwaide and Thieren, 2009), FR (Cravanzola et al., 1997; Neuvéglise et al., 1997), GE (Cravanzola et al., 1997; Keller and Zimmermann, 2005), IT (Chittaro et al., 2021), NE (Moraal, 1999)	(Abraham et al., 2015; Alford, 2014)	Leaves (adults), roots (larvae) (Alford, 2014)	None.
INSECT: Coleoptera: Scarabaeidae: *Melolontha melolontha* (L.)	BE, FR, GE (Keller and Zimmermann, 2005), IT (Dolci et al., 2006; Pedrazzini et al., 2021), NE (Cuppen, 2012b; Moraal, 1999), UK (Yalden, 1976)	(Abraham et al., 2015; Alford, 2014; Mazzoni, 2005)	Leaves (adults), roots (larvae) (Mazzoni, 2005)	None.
INSECT: Coleoptera: Scarabaeidae: *Oxythyrea funesta* (Poda)	BE (Thomaes et al., 2015a), GE (Hoffmann et al., 2021), NE (Heijerman and	(Krivosheina, 2011; Subchev, 2012)	Leaves, fruit (Krivosheina, 2011; Subchev, 2012)	None.

	Corten, 2010), UK (Subchev, 2012)			
INSECT: Coleoptera: Scarabaeidae: *Popillia japonica* Newman	CAN (regulated and present outside regulated areas) (CFIA, 2022)	(Teparkum, 2000)	Fruit, leaves (Teparkum, 2000)	A PPQ Program pest, present in the continental Unites States, in most states east of the Mississippi River (USDA, 2022).
INSECT: Coleoptera: Scarabaeidae: *Tropinota hirta* Poda, syn. *Epicometis hirta* (Poda) [per GBIF, 2021]	BE (Thomaes et al., 2015b), GE, FR (Zagatti and Guy, 2005), IT (Russo et al., 1994; Vuts et al., 2010)	(Andreev et al., 2006; Stastna and Psota, 2013)	Flowers (Çakmak and Şahİn, 2018)	None.
INSECT: Diptera: Agromyzidae: *Phytobia carbonaria* (Zetterstedt)	UK (Claridge and Wilson, 1982; Pitkin, 2019; Spencer, 1973)	(Pitkin, 2019; Spencer, 1973)	Roots, stems, twigs (Pitkin, 2019; Spencer, 1973)	Larvae feed inside young twigs during the growing season, but overwinter in soil as pupae (Pitkin, 2019; Spencer, 1973); there is no association with dormant budwood sticks.
INSECT: Diptera: Agromyzidae: *Phytomyza heringiana* Hendel	IT (Ellis, 2021; Viggiani, 1962), NE (Markó et al., 2008), UK (Spencer, 1973)	(Alford, 2014; Ellis, 2021; Markó et al., 2008; Viggiani, 1962)	Leaves (Alford, 2014; Ellis, 2021; Viggiani, 1962)	Larvae mine leaves (Spencer, 1973); there is no association with dormant budwood sticks.
INSECT: Diptera: Ceccidomyiidae: *Macrolabis mali* Anfora	IT (Anfora et al., 2005; Skuhravá and Skuhravý, 2010)	(Anfora et al., 2005; Skuhravá and Skuhravý, 2010)	Leaves (Anfora et al., 2005)	None.
INSECT: Diptera: Cecidomyiidae: *Resseliella oculiperda* (Rübsaamen)	**BE, NE (van Tol et al., 2007), FR, GE (Alford, 2014)**	**(Alford, 2014; van Tol et al., 2007)**	**Bark (Alford, 2014)**	**Eggs are laid in graft slits or cuts made in the bark of newly budded stock; larvae feed on sap in the cambium for two to three weeks, then pupate in the soil (Alford, 2014; van Tol et al., 2007). We are uncertain about the timing of infestation in relation to harvest; however, it is possible the pest could occur on dormant trees.**

INSECT: Diptera: Tephritidae: *Ceratitis capitata* (Wiedemann)	FR (CABI, 2024a), IT (Cristofaro et al., 2007)	(Alford, 2014)	Fruit (Alford, 2014)	Adventive in Europe (White and Elson-Harris, 1994). Survival in even milder parts of Europe from year to year is strictly limited (Alford, 2014).
INSECT: Hemiptera: Aleyrodidae: *Aleurocanthus spiniferus* (Quaintance)	BE [under eradication] (EPPO, 2022), IT (Jansen, 2011; Porcelli, 2008)	(Jansen, 2011)	Leaves (of citrus) (Porcelli, 2008)	Present in the United States in Hawaii (Jansen, 2011) and Puerto Rico (CABI, 2024a).
INSECT: Hemiptera: Aphididae: *Dysaphis anthrisci* Börner	GE, NE (Alford, 2014), FR (Parveaud et al., 2010)	(Alford, 2014; Blackman and Eastop, 2000; Parveaud et al., 2010)	Leaves (Alford, 2014; Blackman and Eastop, 2000)	None.
INSECT: Hemiptera: Aphididae: *Dysaphis chaerophylli* (Börner)	GE (Alford, 2014; Haine and Eastop, 1969), NE (Alford, 2014)	(Alford, 2014; Blackman and Eastop, 2000)	Leaves (Alford, 2014; Blackman and Eastop, 2000)	None.
INSECT: Hemiptera: Aphididae: *Dysaphis devecta* (Walker)	**BE (Bangels et al., 2008), FR, GE, NE (Alford, 2014), IT (Barbagallo and Cocuzza, 2014; Pollini, 2009)**	**(Blackman and Eastop, 2000; Markó et al., 2008)**	**Bark, leaves, shoots (Alford, 2014; Blackman and Eastop, 2000)**	**Eggs overwinter under loose bark or in bark crevices (Alford, 2014). Therefore, the eggs could be on dormant trees.**
INSECT: Hemiptera: Aphididae: *Dysaphis pyri* (Boyer de Fonscolombe)	**BE (Bangels et al., 2008), FR (Debras et al., 2008), GE (Haine and Eastop, 1969), IT (Barbagallo and Cocuzza, 2014), NE (Besemer, 1964)**	**(Laamari et al., 2012)**	**Buds, leaves, shoots (of pear) (Alford, 2014), leaves (Blackman and Eastop, 2000)**	**Eggs overwinter on spurs and branches of pear (Alford, 2014); we are assuming similar behavior on apple.**
INSECT: Hemiptera: Aphididae: *Pterochloroides persicae* (Cholodkovsky)	**FR (de l'Anses, 2017), IT (Barbagallo and Cocuzza, 2014; Liotta and Maniglia, 1994)**	**(Blackman and Eastop, 1994; CABI, 2024a; Wieczorek et al., 2013)**	**Branches, trunk (Blackman and Eastop, 1994)**	**Lives on underside of large branches and sometimes on the trunk (Blackman and Eastop, 1994).**

INSECT: Hemiptera: Aphididae: *Rhopalosiphum oxyacanthae* (Schrank), syn. *R. insertum* (Walker)	**BE (Bangels et al., 2008), FR (Robert et al., 1987), GE (Haine and Eastop, 1969; Karl, 1989), IT (Pollini, 2009), NE (Besemer, 1964; Evenhuis, 1968)**	**(Alford, 2014; Bangels et al., 2008; Blackman and Eastop, 2000; Evenhuis, 1968)**	**Flower buds, leaves, bark, stems (Alford, 2014; Evenhuis, 1968)**	**Present in the continental United States (CABI, 2024a). Quarantine pest for Hawaii (DEEP and FRSMP, 12/6/2011) (ARM, 2024). Overwinters in the egg stage on apple. Eggs are laid in the spurs of older shoots and at the bases of buds (Alford, 2014; Evenhuis, 1968); therefore, they could be present on dormant trees.**
INSECT: Hemiptera: Cicadellidae: *Alnetoidia alneti* (Dahlbom)	**BE, CAN (Nova Scotia), FR, GE, NE (Cao et al., 2016; Nast, 1972), GE (Nickel and Remane, 2002), IT (Giordano et al., 2002; Nast, 1972), UK (Cao et al., 2016)**	**(Alford, 2014; Bleicher et al., 2010; Claridge and Wilson, 1981; Cross et al., 1999; Jay and Cross, 1997)**	**Leaves, stems (Alford, 2014)**	**Often abundant on apple. This species overwinters in the egg stage. Eggs are laid under the bark of smaller branches and twigs (Alford, 2014) and could therefore be on dormant trees.**
INSECT: Hemiptera: Cicadellidae: *Asymmetrasca decedens* (Paoli), syn. *Empoasca decedens* Paoli	FR (Demir, 2008), IT (Mazzoni, 2005; Mazzoni et al., 2001; Nast, 1972; Viggiani et al., 1992)	(Nestel and Klein, 1995)	Leaves, shoot (of almond) (Jacas et al., 1997)	Eggs are laid on the leaf; adults overwinter away from the host plants and return in the spring (Viggiani et al., 1992).
INSECT: Hemiptera: Cicadellidae: *Cicadella viridis* (L.)	**BE, NE (Nast, 1972), FR (Boudon-Padieu et al., 2004; Nast, 1972), GE (Nast, 1972; Nickel and Remane, 2002), IT (D'Urso and Ippolito, 1988), UK (Eyre et al., 2001)**	**(Alford, 2014; Andreev et al., 2006; Bleicher et al., 2010)**	**Leaves, shoots, stems (Alford, 2014)**	**Eggs are laid in in the shoots, branches, and stems of apple trees where they overwinter (Alford, 2014). Therefore, it could be present on dormant trees. This species is a vector of *Xylella fastidiosa* (Alford, 2014).**
INSECT: Hemiptera: Cicadellidae: *Edwardsiana*	**FR, NE (Nast, 1972), GE (Nast, 1972; Nickel and Remane, 2002), IT (Mazzoni, 2005),**	**(Alford, 2014; Bleicher et al., 2010; Cross et al.,**	**Leaves, bark, fruitlets, stems (Alford, 2014)**	**Present in the continental United States (Christian, 1952). Eggs overwinter beneath the bark of**

***crataegi* (Douglas); syn. *E. australis* (Froggatt), *Typhlocyba froggati* Baker**	**UK (Bleicher et al., 2010)**	**1999; Jay and Cross, 1997)**		**twigs and small branches (Alford, 2014) and therefore could be present on dormant trees**
INSECT: Hemiptera: Cicadellidae: *Edwardsiana prunicola* (Edwards), syn. *Typhlocyba prunicola* Edwards	FR, NE (Nast, 1972), GE (Nast, 1972; Nickel and Remane, 2002), IT (Mazzoni, 2005), UK (Bleicher et al., 2010)	(Alford, 2014; Bleicher et al., 2010)	Leaves (Alford, 2014)	Present in the continental United States (Triapitsyn, 1998).
INSECT: Hemiptera: Cicadellidae: *Empoasca decipiens* Paoli	FR, IT, NE (Nast, 1972), GE (Nickel and Remane, 2002), UK (Bleicher et al., 2010)	(Alford, 2014; Bleicher et al., 2010)	Leaves (Alford, 2014)	None.
INSECT: Hemiptera: Cicadellidae: *Empoasca vitis* (Gothe)	BE, FR, GE, NE (Nast, 1972), IT (Giordano et al., 2002; Mazzoni, 2005; Mazzoni et al., 2001), UK (Bleicher et al., 2010)	(Bleicher et al., 2006; Bleicher et al., 2010)	Foliage (Alford, 2014)	Adults overwinter in evergreen plants; eggs are laid on leaves (Alford, 2014).
INSECT: Hemiptera: Cicadellidae: *Macrosteles laevis* Ribaut	BE, CAN (British Columbia, Yukon Territory), FR, IT, NE, UK (Wilson and Turner, 2010)	(Bleicher et al., 2010; Wilson and Turner, 2010)	Foliage, stems (Bleicher et al., 2010; Wilson and Turner, 2010)	Leafhoppers are highly mobile (Alford, 2014) and would not follow the commodity pathway. This species is present in the United States (Alaska) (Pantoja, 2009).
INSECT: Hemiptera: Cicadellidae: *Ribautiana debilis* (Douglas)	FR (Alford, 2014; Nast, 1972), GE (Nickel and Remane, 2002), IT (Mazzoni, 2005)	(Alford, 2014; Bleicher et al., 2010)	Leaves (Alford, 2014)	None.
INSECT: Hemiptera: Cicadellidae: *Ribautiana tenerrima* (Herrich-Schaeffer)	BE, FR, GE, NE (Nast, 1972), IT (Ponti et al., 2005)	(Alford, 2014; Bleicher et al., 2010)	Leaves (Alford, 2014)	None.
INSECT: Hemiptera:	**BE, FR, GE, NE (Nast, 1972), IT**	**(Alford, 2014;**	**Leaves (Alford,**	**Present in the continental United**

Cicadellidae: *Typhlocyba quercus* (F.)	**(Mazzoni, 2005; Nast, 1972)**	**Bleicher et al., 2010)**	**2014), leaves of plum and cherry (Mulla and Madsen, 1955), bark of plum (Mulla and Madsen, 1955)**	**States (Mulla and Madsen, 1955). Uncategorized for Hawaii, and Puerto Rico (ARM (2024). Overwinters in the egg stage (Alford, 2014). Egg laying site on apple not reported; however, Mulla and Madsen (1955) reported overwintering eggs were laid under the bark of plum trees in California. Therefore, it is possible that this species could be present on dormant *Malus* sp. and follow the pathway.**
INSECT: Hemiptera: Cicadellidae: *Zygina flammigera* (Fourcroy)	BE, FR, GE, NE (Nast, 1972), IT (Viggiani et al., 1992)	(Alford, 2014; Bleicher et al., 2010; Markó et al., 2008)	Leaves (Alford, 2014)	None.
INSECT: Hemiptera: Coccidae: *Ceroplastes japonicus* Green	**FR (Foldi and Germain, 2018; Masten-Milek et al., 2007), GE (Schönfeld, 2015), NE (Fetyko and Kozar, 2012), IT (Ben-Dov, 1993; Longo et al., 1995; Mazzeo et al., 2014)**	**(Kozár, 1989; Masten-Milek et al., 2007)**	**Leaves, stems (Masten-Milek et al., 2007)**	**Adult females overwinter on stems (Masten-Milek et al., 2007). Therefore, these scales could be on dormant trees.**
INSECT: Hemiptera: Coccidae: *Ceroplastes rubens* Maskell	**GE (Schönfeld, 2015), NE (Fetyko and Kozar, 2012)**	**(Ben-Dov, 1993)**	**Fruit, leaves, stems of citrus (CABI, 2024a)**	**Present in the continental United States, Hawaii, and Puerto Rico (Ben-Dov, 1993). Quarantine pest for the continental U.S. (ARM, 2024). Because it infests the stems, it could be present on dormant trees.**
INSECT: Hemiptera: Coccidae:	**FR, NE, UK (García Morales et al., 2016), IT**	**(García Morales et al., 2016)**	**Leaves, branches (Pellizzari et al., 2010)**	**Overwinters on twigs (Hamon and Mason, 2014). This pest is present in the**

***Ceroplastes rusci* (L.)**	**(Pellizzari et al., 2010)**			**continental United States (García Morales et al., 2016). Quarantine pest for Hawaii (ARM, 2024).**
INSECT: Hemiptera: Coccidae: *Eulecanium ciliatum* (Douglas)	**FR, GE, UK (García Morales et al., 2016; Malumphy and Badmin, 2012), NE (Jansen, 1999)**	**(García Morales et al., 2016; Ülgentürk, 1999)**	**Leaves, branches (Ülgentürk, 1999)**	**Overwinters as second instar nymphs on twigs and branches (Ülgentürk, 1999).**
INSECT: Hemiptera: Coccidae: *Eulecanium tiliae* (L.)	**UK (Alford, 2014; García Morales et al., 2016)**	**(Alford, 2014)**	**Leaves, branches (Alford, 2014)**	**Overwinters as second instar nymphs on twigs and branches (Alford, 2014). This species is present in the United States (García Morales et al., 2016). Non-quarantine pest for the continental U.S.; uncategorized for Hawaii, and Puerto Rico 024).(ARM, 2024).**
INSECT: Hemiptera: Coccidae: *Nipponpulvinaria horii* (Kuwana)	UK (García Morales et al., 2016)	(García Morales et al., 2016; Suh, 2020)	Foliage, stems (García Morales et al., 2016)	Although we found no evidence of where this soft scale overwinters, other scales spend winter as second instar nymphs or eggs on twigs and branches (Alford, 2014).
INSECT: Hemiptera: Coccidae: *Palaeolecanium bituberculatum* (Signoret)	**FR, GE, IT, NE (Ben-Dov, 1993), UK (García Morales et al., 2016)**	**(García Morales et al., 2016)**	**Foliage, stems (Schmutterer, 1952)**	**Eggs overwinter under small and cryptic adult scales (Özgökçe et al., 1999; Saccaggi and Pieterse, 2013). Therefore, the eggs could be present on dormant trees**
INSECT: Hemiptera: Coccidae: *Sphaerolecanium prunastri* (Boyer de Fonscolombe)	**BE, GE (CABI, 2024a), FR (Foldi and Germain, 2018), IT [Sardinia] (Longo et al., 1995; Pellizzari, 2011)**	**(Alford, 2014; Kozár, 1989)**	**Bark, stem (Alford, 2014; CABI, 2024a)**	**Present in the continental United States (CABI, 2024a). Second-instar nymphs overwinter on trees (Alford, 2014) and could therefore be on dormant trees.**
INSECT: Hemiptera: Coccidae: *Takahashia*	**IT (Limonta and Pellizzari, 2018), UK (García**	**(Suh, 2020)**	**Trunk, branches, leaves (not *Malus***	**On *Morus nigra,* nymphs feed on leaves in summer but move back to twigs, and**

japonica **(Cockerell)**	**Morales et al., 2016; Suh, 2020)**		**specifically) (Limonta and Pellizzari, 2018)**	**branches to overwinter (Limonta and Pellizzari, 2018); we assume they may do the same on apple.**
INSECT: Hemiptera: Diaspididae: *Diaspidiotus marani* (Zahradnik), syn. *Quadraspidiotus marani* Zahradnik	**FR (Alford, 2014), GE (García Morales et al., 2016), IT (Longo et al., 1995), NE (Jansen, 1999)**	**(Alford, 2014; Jansen, 1999; Kozár, 1989)**	**Stem (Alford, 2014)**	**Mated females overwinter on trunks and branches (Alford, 2014) and therefore could be on dormant trees.**
INSECT: Hemiptera: Diaspididae: *Diaspidiotus pyri* (Lichtenstein), syn. *Quadraspidiotus pyri* (Lichtenstein)	**BE, GE, UK (García Morales et al., 2016), FR (Foldi and Germain, 2018), IT (Longo et al., 1995; Mazzeo et al., 2016), NE (Jansen, 1999)**	**(Alford, 2014; Kozár, 1989; Moghaddam , 2013)**	**Fruit, bark, stems (Alford, 2014), branches (García Morales et al., 2016)**	**Nymphs overwinter on branches (Saccaggi and Pieterse, 2013), and therefore could be present on dormant trees.**
INSECT: Hemiptera: Diaspididae: *Melanaspis inopinata* (Leonardi)	**IT (de Lillo and Porcelli, 1993; Russo et al., 1994)**	**(Moghadda m, 2013)**	**Flowers, fruit, leaves, branches, twigs (of pistachio) (Mehrnejad, 2020)**	**Scale insects attach to their plant host; they are small, and cryptic (Saccaggi and Pieterse, 2013).**
INSECT: Hemiptera: Diaspididae: *Suturaspis archangelskyae* (Lindinger)	**IT (Porcelli, 1990; Porcelli and Frisullo, 1998)**	**(Inserra and Calabretta, 1985)**	**Bark (of almond) (Porcelli, 1990)**	**Scale insects attach to their plant host; they are small, and cryptic (Saccaggi and Pieterse, 2013).**
INSECT: Hemiptera: Lygaeidae: *Nysius huttoni* White	BE, FR, GE, NE (Aukema, 2017), UK (EPPO, 2024)	(Lay-Yee, 1997)	Fruit (Lay-Yee, 1997)	None.
INSECT: Hemiptera: Miridae: *Apolygus spinolae* (H. Meyer-Dür)	**BE (Bosmans and Aukema, 2000), FR (Callot, 2017), GE (Kallenborn, 2006), IT (Limonta et al., 2022), NE (Aukema and Hermes, 2009),**	**(Umeya, 2003)**	**Stems, buds (Alford, 2014)**	**Eggs overwinter within the buds and stems of hosts (Alford, 2014).**

	UK (Alford, 2014; Ryan, 2012)			
INSECT: Hemiptera: Miridae: *Blepharidopterus angulatus* (Fallen)	**UK (Collyer, 1953; Wheeler, 2000)**	**(Collyer, 1953; Wheeler, 2000)**	**Shoots and twigs (Collyer, 1953)**	**Predator that also feeds on *Malus domestica* (Wheeler, 2000); eggs overwinter in shoots and twigs (Collyer, 1953).**
INSECT: Hemiptera: Miridae: *Closterotomus fulvomaculatus* (Degeer)	UK (Alford, 2014)	(Ryan, 2012)	Leaves and stems, soft dead wood (Alford, 2014)	This plant bug feeds externally on leaves and stems; it deposits eggs in soft dead wood (Alford, 2014).
INSECT: Hemiptera: Miridae: *Lygocoris rugicollis* (Fallén), syn. *Plesiocoris rugicollis* (Fallén)	**GE (Göricke and Kleinsteuber, 2016), IT (Norbiato et al., 2019), NE (Aukema et al., 2012)**	**(Alford, 2014; Jaastad et al., 2009)**	**Fruit, leaves, shoots, stems (Alford, 2014)**	**Eggs are laid in young apple shoots in summer but are sometimes deposited on the bark of branches and trunks. The species overwinters in the egg stage (Alford, 2014). Therefore, the eggs could be present on dormant trees.**
INSECT: Hemiptera: Miridae: *Orthotylus marginalis* Reuter	**FR (CABI, 2024a), GE (Göricke and Kleinsteuber, 2016), IT (Norbiato et al., 2019), NE (Aukema, 2010; Aukema et al., 2012)**	**(Jaastad et al., 2009)**	**Flower buds, fruit (Jaastad et al., 2009), stems (Alford, 2014)**	**Eggs are laid in young wood in summer, and most hatch the following spring (Alford, 2014). Therefore, they could be present in dormant trees.**
INSECT: Hemiptera: Monophlebidae: *Icerya seychellarum* (Westwood)	**FR (CABI, 2024a), IT (Verde et al., 2020)**	**(Williams and Watson, 1990)**	**Leaves, twigs (CABI, 2024a)**	**Because it can occur on twigs, this pest can potentially follow the pathway.**
INSECT: Hemiptera: Pentatomidae *Halyomorpha halys* Ståhl	BE (Claerebout et al., 2018), CAN (CABI, 2024a; Jesperson, 2019), FR (Gariepy et al., 2015), GE (Heckmann, 2012), IT (Bariselli et al., 2016; CABI, 2024a), NE	(Bariselli et al., 2016; CABI, 2024a; CPHST, 2004; Malumphy et al., 2021; Nielsen and Hamilton, 2009;	Fruit, leaves (CABI, 2024a; CPHST, 2004; Formella et al., 2020; Zakharchenko et al., 2020)	This large, mobile pest is unlikely to be associated with dormant stock. The brown marmorated stinkbug is present in the United States. It is a quarantine pest for Hawaii, Puerto Rico, and the US Virgin Islands (ARM, 2024).

	(Aukema et al., 2019), UK (Powell et al., 2021)	Zakharchenko et al., 2020)		
INSECT: Hemiptera: Pseudococcidae: *Pulvinaria regalis* (Canard)	**FR, GE, NE, UK (García Morales et al., 2016; Malumphy and Badmin, 2012)**	**(García Morales et al., 2016; Şengonca, 1995)**	**Foliage, stems (Şengonca, 1995)**	**In the fall, the horse chestnut scale moves from shedding leaves to feed and overwinter on twigs (Şengonca, 1995).**
INSECT: Hemiptera: Psyllidae: *Cacopsylla mali* (Schmidberger), syn. *Psylla mali* (Schmidberger)	**GE (Jarausch et al., 2009; Seemüller et al., 2003), IT (Fischnaller et al., 2017; Frisinghelli et al., 2000)**	**(Alford, 2014; Hodkinson, 2009; Jarausch et al., 2009; Ouvrard, 2021; Seemüller et al., 2003)**	**Leaves, buds, flowers, shoots (Alford, 2014)**	**The eggs are laid on spurs, at the bases of leaf buds, or on the shoots. The pest overwinters in the egg stage (Alford, 2014).**
INSECT: Hemiptera: Psyllidae: *Cacopsylla melanoneura* (Foerster), syn. *Psylla melanoneura* Foerster	**BE, FR, GE, NE (Ouvrard, 2019; Ouvrard et al., 2015), IT (Fischnaller et al., 2017; Frisinghelli et al., 2000; Tedeschi et al., 2008)**	**(Gal and Penzes, 1995; Jarausch et al., 2009; Ouvrard, 2019; Ouvrard et al., 2015; Seemüller et al., 2003; Tedeschi et al., 2012)**	**Shoots (Alford, 2014), buds (Gal and Penzes, 1995)**	**Mainly associated with *Crataegus*. Eggs are laid on apple branches in spring (Tedeschi et al., 2012), and nymphs feed on young shoots (Alford, 2014). Therefore, these stages would not be present on dormant trees. Adults are only 2.5 mm long and sometimes overwinter on host plants (Alford, 2014); therefore, they could be on dormant trees.**
INSECT: Hemiptera: Psyllidae: *Cacopsylla picta* (Foerster), syn. *C.* (Flor)	FR (Ouvrard et al., 2015), GE (Jarausch et al., 2007; Seemüller et al., 2003), IT (Fischnaller et al., 2017; Frisinghelli et al., 2000)	(Alford, 2014; Jarausch et al., 2009; Seemüller et al., 2003)	Leaves (Alford, 2014)	A minor pest of apple. Adults generally overwinter on conifers or evergreen shrubs (Hodkinson, 2009). Eggs are laid on leaves in spring (Alford, 2014) and would not be associated with dormant trees.
INSECT: Hemiptera: Psyllidae: *Cacopsylla pyri* (L.)	**BE, GE, NE, UK (CABI, 2024a); FR, IT (CABI, 2024a; Kaya, 2016)**	**(Kaya, 2016)**	**Bark, twigs (Alford, 2014)**	**Pear psyllid adults overwinter in cracks in bark; eggs are laid on twigs and spurs in crevices of the bark (Alford, 2014).**

INSECT: Hemiptera: Steingellidae: *Steingelia gorodetskia* Nasonov	FR, GE, UK (García Morales et al., 2016)	(García Morales et al., 2016)	Leaves (García Morales et al., 2016)	Females deposit their eggs in leaf litter (García Morales et al., 2016).
INSECT: Hemiptera: Tingidae: *Stephanitis pyri* (Fabricius)	**BE, FR, GE, NE (CABI, 1983); IT (Pedata et al., 2013)**	**(Alford, 2014; Andreev et al., 2006; Hill, 1994; Hradil et al., 2013; Pedata et al., 2013)**	**Bark, leaves (Alford, 2014)**	**Adults are only 3 mm long and overwinter among leaves or in bark crevices (Alford, 2014).**
INSECT: Hymenoptera: Cephidae: *Janus compressus* (Fabricius)	**BE (Bangels and Belien, 2013); FR (Noblecourt, 2018); GE (Liston, 2006); IT (Campo and Beninato, 1999); NE (Burggraaf-van Nierop and van Achterberg, 1990)**	**(Alford, 2014; Bangels and Belien, 2013; CABI, 2024a)**	**Shoots, stems (Bangels and Belien, 2013; Burggraaf-van Nierop and van Achterberg, 1990)**	**Eggs are laid in young shoots in spring. Larvae feed, overwinter, and pupate within the stems of the shoots (Alford, 2014; Bangels and Belien, 2013; Burggraaf-van Nierop and van Achterberg, 1990).**
INSECT: Hymenoptera: Tenthredinidae: *Hoplocampa testudinea* Klug	UK (Miles, 1932)	(Miles, 1932)	Fruit (Miles, 1932)	The apple sawfly attacks fruit and pupates in the soil where it overwinters (Miles, 1932).
INSECT: Hymenoptera: Tenthredinidae: *Pristiphora maesta* (Zaddach)	FR (Attila, 2006; Liston and Späth, 2005); GE (Attila, 2006); NE (Blommers and Mol, 2019)	(Alford, 2014; Liston and Späth, 2005)	Leaves (Alford, 2014)	None.
INSECT: Lepidoptera: Agonoxenidae: *Blastodacna atra* (Haworth)	**UK (Carter, 1984; Gaden S. Robinson et al., 2019; Plant et al., 2019)**	**(Carter, 1984; Gaden S. Robinson et al., 2019; Weaver, 1993)**	**Stems, twigs (Carter, 1984; Weaver, 1993)**	**In the summer, larvae hatch and burrow into stems at the base of buds where they feed and overwinter (Weaver, 1993). Apple pith moths are present in the continental United States (CT, ME, MA, NH) (Weaver, 1993) and categorized as quarantine for CONUS (ARM, 2024).**

INSECT: Lepidoptera: Choreutidae: *Choreutis pariana* (Clerck)	UK (Carter, 1984; Plant et al., 2019)	(Alford, 2014; Carter, 1984)	Leaves (Alford, 2014)	Apple leaf skeletonizer moths overwinter in debris. It is native to Europe and Asia and was introduced to the U.S. and Canada (Alford, 2014). May be a quarantine pest for Hawaii, Puerto Rico, and other territories (ARM, 2024).
INSECT: Lepidoptera: Coleophoridae: *Coleophora hemerobiella* (Scopoli)	**BE, FR, GE, NE (Baldizzone, 1996); IT (Pinzari et al., 2010)**	**(Alford, 2014; Carter, 1984; Velcheva, 2009)**	**Fruit, leaves (Alford, 2014; Meijer et al., 2012)**	**This leafminer has a two-year life cycle. Larvae pass their first winter within leaf mines, then move into small portable cases on the plant to overwinter for a second time (Alford, 2014).**
INSECT: Lepidoptera: Coleophoridae: *Coleophora violacea* (Ström)	BE (De Prins, 2010); FR (Baldizzone, 1996); GE (Karisch et al., 2016); NE (Huisman et al., 2013)	(Alford, 2014; De Prins, 2010)	Leaves, stems (Alford, 2014)	Larvae overwinter in 5.5-6.5 mm cases made of leaves, which may be attached to branches (Alford, 2014). Although the larval cases may be present on dormant trees, they are likely large enough to be found during harvest and unlikely to follow the pathway.
INSECT: Lepidoptera: Cossidae: *Cossus cossus* L.	**BE, FR, NE (CABI, 2024a); GE (Karisch et al., 2016), IT (Bendazzi and Pezzi, 2019; Faniano and Zinetti, 2010; Teobaldelli, 1994; Teobaldelli, 2017); UK (Carter, 1984; Gaden S. Robinson et al., 2019; Plant et al., 2019)**	**(Alford, 2014; Carter, 1984; Faccioli et al., 1993; Gaden S. Robinson et al., 2019)**	**Bark, shoots, trunks (Alford, 2014; Carter, 1984)**	**Eggs are laid on tree trunks in batches of up to 50. Larvae bore into the trees, feed on sapwood, and overwinter in galleries; they generally infest the trunks, but occasionally infest branches or shoots. Development takes three to four years. Pupation occurs just beneath the bark (Alford, 2014).**
INSECT: Lepidoptera:	UK (Truscott, 2007)	(Chen, 2018; Gaden S.	Fruits, bolls, leaves, roots	The castor capsule borer may burrow into stems of

Crambidae: *Conogethes punctiferalis* (Guenée), syn. *Dichocrocis punctiferalis* (Guenée)		Robinson et al., 2019)	(Waterhouse, 1993)	some hosts, but *Malus* infestation is rare (Chen, 2018); regardless, pupation occurs in the soil (Shashank, 2015).
INSECT: Lepidoptera: Crambidae: *Ostrinia nubilalis* (Hübner)	BE, FR, GE, NE (CABI, 2024a; Speidel and Ganev, 1996); CAN (CABI, 2024a; Hagerman, 1998); IT (Bendazzi and Pezzi, 2019; CABI, 2024a); UK (CABI, 2024a)	(CABI, 2024a; Epp, 1997; Jentsch, 2021; Weires and Straub, 1982)	Fruit, leaves (Epp, 1997), shoots (Weires and Straub, 1982)	Present in the continental United States (CABI, 2024a). Actionable only to Hawaii (ARM, 2024). See notes in section 2.2.
INSECT: Lepidoptera: Erebidae: *Dasychira pudibunda* (L.), syn. *Calliteara pudibunda* (L.)	BE, FR, GE, NE (Schintlmeister, 1996b); IT (CABI, 2024a; Teobaldelli, 1994); UK (CABI, 2024a)	(Alford, 2014; Carter, 1984; Gupta and Pathania, 2016; Velcheva, 2009)	Leaves (Alford, 2014; Carter, 1984)	None.
INSECT: Lepidoptera: Erebidae: *Euproctis similis* (Fuessly)	**BE (De Prins, 2016), FR (Carter, 1984), GE (Groß and Zub, 2012), IT (Carter, 1984; Pinzari et al., 2010), NE (van Asseldonk et al., 2016), UK (Leather, 1991)**	**(Alford, 2014)**	**Leaf, twig (Carter, 1984), bark (Alford, 2014)**	**Larvae overwinter under bark scales or in crevices (Alford, 2014).**
INSECT: Lepidoptera: Erebidae: *Lymantria dispar* (L.)	**BE, FR, GE, NE (Schintlmeister, 1996b), CAN (Boukouvala et al., 2022), IT (Bendazzi and Pezzi, 2019; Pinzari et al., 2010; Teobaldelli, 1994; Teobaldelli, 2017), UK (Cannon et al., 2004; Gaden S. Robinson et al., 2019; Nunes, 2021)**	**(Alford, 2014; Carter, 1984; Velcheva, 2009)**	**Leaves, bark, buds, young shoots, fruitlets (Alford, 2014)**	**Eggs are laid in large batches on the bark where they overwinter (Alford, 2014). Present in the continental United States and under official control (7 CFR § 301.45, 2022).**

INSECT: Lepidoptera: Erebidae: *Lymantria monacha* L.	**BE, FR, GE, NE (Schintlmeister, 1996b), IT (Cescatti and Battisti, 1992; Dapporto, 1997; Pinzari et al., 2010; Teobaldelli, 1994), UK (Alford, 2014; Carter, 1984)**	**(Alford, 2014; Carter, 1984)**	**Bark, foliage (Alford, 2014; Carter, 1984)**	**Black arches moths lay eggs on host bark and branches where they overwinter (Alford, 2014; Carter, 1984).**
INSECT: Lepidoptera: Geometridae: *Erannis defoliaria* (Clerck), syn. *Phalaena defoliaria* Clerck	**BE, FR, GE, NE, UK (CABI, 2024a), IT (King and González-Estébanez, 2015; Mattedi et al., 1997; Pinzari et al., 2010; Teobaldelli, 1994)**	**(CABI, 2024a; Carter, 1984; Massee, 1954; Velcheva, 2009)**	**Bark, flowers, fruitlets, leaves, stems (Carter, 1984; Massee, 1954)**	**Females lay eggs in bark crevices (Alford, 2014; Carter, 1984) or on buds and twigs (Carter, 1984; Massee, 1954) in fall and winter. The pest overwinters as eggs (Alford, 2014; Massee, 1954).**
INSECT: Lepidoptera: Geometridae: *Pasiphila rectangulata* (L.), syn.: *Chloroclystis rectangulata* (L.), *Rhinoprora rectangulata* (L.)	**CAN (Maier, 2002), BE, FR, GE, NE (Muller, 1996), IT (Bendazzi and Pezzi, 2019; Dapporto, 1997; Pinzari et al., 2010), UK (Carter, 1984; Plant et al., 2019)**	**(Alford, 2014; Carter, 1984; Maier, 2005; Velcheva, 2011)**	**Leaves, buds, twigs (Alford, 2014; Carter, 1984; Maier, 2002)**	**Green pug moth eggs overwinter on dormant buds (Alford, 2014; Carter, 1984; Maier, 2002).** **Present in the continental United States (LaGasa et al., 1999; Maier, 2002). Quarantine pest for Hawaii, Puerto Rico, and US territories (ARM, 2025).**
INSECT: Lepidoptera: Geometridae: *Phigalia pilosaria* (Denis & Schiffermüller), syn.: *Apocheima pilosaria* (Denis & Schiffermüller)	BE, FR, GE, NE (Muller, 1996), IT (King and González-Estébanez, 2015; Pinzari et al., 2010), UK (CABI, 2024a)	(Alford, 2014; CABI, 2024a; Velcheva, 2009)	Leaves (Alford, 2014)	A minor pest of apple. Larvae feed in summer and pupate in the soil (Alford, 2014).
INSECT: Lepidoptera: Gracillaridae: *Phyllonorycter blancardella* (Fabricius), syn.: *Lithocolletis*	BE, FR, GE, NE (Buszko, 1996; CABI, 2024a); CAN, UK (CABI, 2024a), IT (CABI, 2024a; Celli, 1971)	(Alford, 2014; Andreev et al., 2006; Baufeld, 1991; CABI, 2024a; Markó	Leaves (Alford, 2014; Baufeld, 1991; CABI, 2024a)	Present in the continental United States (CABI, 2024a).

blancardella Fabricius		et al., 2008; Steuer, 1984)		
INSECT: Lepidoptera: Gracillaridae: *Phyllonorycter corylifoliella* Hübner, syn.: *Lithocolletis corylifoliella* Hübner	BE, FR, GE, NE (Buszko, 1996), CAN, IT, UK (CABI, 2024a)	(Alford, 2014; CABI, 2024a; Gruys, 1980)	Leaves (Alford, 2014; Carter, 1984; Gruys, 1980)	None.
INSECT: Lepidoptera: Gracillaridae: *Phyllonorycter cydoniella* (Denis & Schiffermüller)	BE, FR, GE, NE (Buszko, 1996; De Prins et al., 2019), IT (CABI, 2024a; Triberti and Braggio, 2010)	(CABI, 2024a; Casas, 1989)	Leaves (Casas, 1989)	None.
INSECT: Lepidoptera: Gracillaridae: *Phyllonorycter leucographella* (Zeller)	BE, FR, GE, NE (Alford, 2014; Buszko, 1996), IT, UK (CABI, 2024a)	(Alford, 2014; Meijer et al., 2012)	Leaves (Alford, 1973)	None.
INSECT: Lepidoptera: Gracillaridae: *Phyllonorycter mespilella* (Hübner)	BE, FR, GE (Buszko, 1996), CAN (CABI, 2024a), IT (Triberti and Braggio, 2010), NE (CABI, 2024a; Huisman et al., 2013)	(CABI, 2024a; Landry and Wagner, 1995)	Leaves (Alford, 2014; Landry and Wagner, 1995)	Present in the continental United States (CABI, 2024a; Landry and Wagner, 1995).
INSECT: Lepidoptera: Gracillariidae: *Callisto denticulella* (Thunberg), syns.: *Callisto coffeella* Zetterstedt, *Ornix guttea* (Haworth)	BE, FR, GE, NE (Buszko, 1996), UK (CABI, 2024a)	(Alford, 2014; CABI, 2024a; De Prins, 2010)	Leaves (Alford, 2014; De Prins, 2010)	None.
INSECT: Lepidoptera: Lasiocampidae: *Gastropacha quercifolia* (L.)	**IT (Bibolini, 1960), UK (Carter, 1984)**	**(Carter, 1984)**	**Foliage, trunk, twigs (Alford, 2014; Carter, 1984)**	**Lappet moth larvae overwinter in bark crevices on the trunk (Alford, 2014) or conspicuously stretched out on twigs (Carter, 1984).**
INSECT: Lepidoptera: Lasiocampidae:	**BE, FR, GE, NE (CABI, 2024a; Schintlmeister,**	**(Alford, 2014; Andreev et**	**Leaves, stems (Alford, 2014;**	**Lackey moths lay eggs on twigs of host plants where they overwinter**

***Malacosoma neustria* (L.)**	**1996a), IT (Bendazzi and Pezzi, 2019; CABI, 2024a; Faniano and Zinetti, 2010), UK (CABI, 2024a; Carter, 1984)**	**al., 2006; CABI, 2024a; Çoruh and Özbek, 2002; Velcheva, 2009)**	**CABI, 2024a; Carter, 1984)**	**(Alford, 2014; Çoruh and Özbek, 2002)**
INSECT: Lepidoptera: Lasiocampidae: *Macrothylacia rubi* (L.)	BE (Sierens et al., 2010; Tips and Halflants, 1978), FR (Schintlmeister, 1996a), GE (Karisch et al., 2016; Werno, 1994), IT (Bendazzi and Pezzi, 2019), NE (Cupedo, 2017; Cuppen, 2012b)	(CABI, 2024b; Velcheva, 2011)	Leaves (Velcheva, 2011)	None.
INSECT: Lepidoptera: Lyonetiidae: *Leucoptera malifoliella* (Costa), syn. *L. scitella* Zeller	**BE (De Prins, 2010; De Prins et al., 2019), FR (Canson and Faucon, 1992; Sévérac and Siegwart, 2013), GE (Baufeld, 1991; Karisch et al., 2016), IT (Celli, 1971; Faccioli et al., 1990), NE (Gruys, 1980; Jansen, 2008), UK (Carter, 1984; Plant et al., 2019; Robinson et al., 2010)**	**(Aguiar and Karsholt, 2006; Alford, 2014; CABI, 2024b; De Prins, 2010)**	**Leaves (Aguiar and Karsholt, 2006; Alford, 2014; CABI, 2024b; De Prins, 2010)**	**Infests young trees and nursery stock (Alford, 2014). Pupates in crevices in bark or on twigs and pupae are small (3mm) (Alford, 2014; CABI, 2024b; Mey, 1988; Molet, 2011) and therefore could be present on dormant trees.**
INSECT: Lepidoptera: Lyonetiidae: *Lyonetia clerkella* (L.)	BE, FR (Baraniak, 1996), GE (Steuer, 1984), IT (Pinzari et al., 2010), NE (Gruys, 1980; Markó et al., 2008; Meijer et al., 2012), UK (Carter, 1984; Plant et al., 2019; Robinson et al., 2010)	(Alford, 2014; CABI, 2024b; Kollár, 2007; Markó et al., 2008)	Leaves (Alford, 2014; Carter, 1984)	Adults hibernate under loose bark (Alford, 2014) and would likely be seen and removed at harvest.

INSECT: Lepidoptera: Lyonetiidae: *Lyonetia prunifoliella* (Hübner)	BE, FR (Baraniak, 1996), GE (Karisch et al., 2016)	(Alford, 2014)	Leaves (Alford, 2014)	None.
INSECT: Lepidoptera: Nepticulidae: *Bohemannia pulverosella* (Stainton)	FR (van Nieukerken et al., 2006), GE (Karisch et al., 2016; Steuer, 1984), NE (van Nieukerken et al., 2006)	(Steuer, 1984; van Nieukerken et al., 2006)	Leaves (Steuer, 1984; van Nieukerken et al., 2006)	None.
INSECT: Lepidoptera: Nepticulidae: *Stigmella desperatella* (Frey)	FR (van Nieukerken et al., 2006), GE (Steuer, 1984)	(van Nieukerken et al., 2006)	Leaves (Steuer, 1984; van Nieukerken et al., 2006)	None.
INSECT: Lepidoptera: Nepticulidae: *Stigmella incognitella* (Herrich-Schäffer), syn. *S. pomella* (Vaughan)	BE, FR (van Nieukerken, 1996), GE (Steuer, 1984), IT (Laštůvka and Laštůvka, 2005; Triberti and Braggio, 2010), NE (Gruys, 1980)	(Alford, 2014; Steuer, 1984; van Nieukerken et al., 2006)	Leaves (Alford, 2014; Carter, 1984; Steuer, 1984))	None.
INSECT: Lepidoptera: Nepticulidae: *Stigmella malella* (Stainton)	FR (Chambon, 1981; van Nieukerken et al., 2006), GE (Baufeld, 1991; Karisch et al., 2016), IT (CABI, 2021; Celli, 1971), NE (Gruys, 1980), UK (Carter, 1984; Robinson et al., 2010)	(Alford, 2014; Baufeld, 1991; CABI, 2024b; Carter, 1984; De Prins, 2010)	Leaves (Alford, 2014; Baufeld, 1991; CABI, 2024b; Carter, 1984; De Prins, 2010)	None.
INSECT: Lepidoptera: Nepticulidae: *Stigmella oxyacanthella* (Stainton)	BE, FR, NE (van Nieukerken, 1996), GE (Karisch et al., 2016)	(Steuer, 1984; van Nieukerken, 1996)	Leaves (Steuer, 1984; van Nieukerken, 1996)	None.
INSECT: Lepidoptera: Nepticulidae: *Stigmella*	BE, FR, NE (van Nieukerken, 1996), GE (Karisch et al., 2016; Steuer,	(Kollár, 2007)	Leaves (Alford, 2014; Steuer, 1984)	None.

plagicolella (Stainton)	1984), IT (Laštůvka and Laštůvka, 2005; Triberti and Braggio, 2010)			
INSECT: Lepidoptera: Noctuidae: *Acronicta psi* (L.)	**BE (De Prins, 2016), FR (Luque et al., 2007), GE, IT (CABI, 2024a), NE (van Asseldonk et al., 2016), UK (Carter, 1984; Leather, 1991; Plant et al., 2019; Robinson et al., 2010)**	**(Carter, 1984; Robinson et al., 2010)**	**Leaves, bark (Carter, 1984)**	**The larvae pupate and overwinter in bark crevices (Alford, 2014); therefore, this species could be on dormant trees.**
INSECT: Lepidoptera: Noctuidae: *Acronicta rumicis* (L.)	BE (Mazzei et al., 2019; Sierens et al., 2010), FR (Nowacki and Fibiger, 1996), GE (Karisch et al., 2016; Werno, 1994), IT (Bendazzi and Pezzi, 2019), NE (Cupedo, 2017), UK (Leather, 1991; Robinson et al., 2010)	(Alford, 2014; CABI, 2024a)	Leaves (Alford, 2014; CABI, 2024a)	None.
INSECT: Lepidoptera: Noctuidae: *Acronicta tridens* (Denis & Schiffermüller)	**BE, NE (Nowacki and Fibiger, 1996), FR (Mazzei et al., 2019), GE (Karisch et al., 2016; Werno, 1994), IT (Faniano and Zinetti, 2010)**	**(Alford, 2014; Velcheva, 2009)**	**Leaves, bark (Alford, 2014)**	**Overwinters as pupae in the cracks of the bark (Alford, 2014).**
INSECT: Lepidoptera: Noctuidae: *Agrotis segetum* (Denis & Schiffermüller)	BE, FR, GE, NE (CABI, 2024a), IT (Bendazzi and Pezzi, 2019; Teobaldelli, 1994), UK (Plant et al., 2019; Robinson et al., 2010)	(CABI, 2024a)	Leaves, roots, stems (generally, not *Malus* specifically, (CABI, 2024a); fruits (Alford, 2014)	Eggs are laid on plant residues or soil; larvae feed on foliage during day, then hide in soil. They also pupate in soil (CABI, 2024a). Root feeding is most likely on herbaceous hosts and is unlikely to occur on *Malus*.

INSECT: Lepidoptera: Noctuidae: *Allophyes oxyacanthae* (L.)	**BE (Werno et al., 2013), FR (Savourey, 2002), GE (Karisch et al., 2016; Werno, 1994b), IT (Bendazzi and Pezzi, 2019; Teobaldelli, 1994; Teobaldelli, 2017), NE (Griffioen, 2017)**	**(Alford, 2014; Velcheva, 2009)**	**Leaves, stems (Alford, 2014)**	**Eggs are laid singly or in small batches on the bark and overwinter on the tree (Alford, 2014); therefore, this species could be on dormant stock.**
INSECT: Lepidoptera: Noctuidae: *Amphipyra pyramidea* (L.)	BE (Nowacki and Fibiger, 1996), FR (Savourey, 2002), GE (Karisch et al., 2016; Werno, 1994), IT (Bendazzi and Pezzi, 2019; Faniano and Zinetti, 2010; Teobaldelli, 2017), NE (Griffioen, 2017; Meijer et al., 2012)	(CABI, 2024a; Velcheva, 2009)	Leaves (Alford, 2014)	None.
INSECT: Lepidoptera: Noctuidae: *Autographa gamma* (L.)	UK (Kimber, 2007; Plant et al., 2019)	(Robinson et al., 2010)	Leaves, fruit (Rashid, 1971)	None.
INSECT: Lepidoptera: Noctuidae: *Chrysodeixis chalcites* (Esper), syn. *Plusia chalcites* Esper	UK (Plant et al., 2019; Robinson et al., 2010)	(Robinson et al., 2010)	Leaves, fruit (Mahfudho, 2014; Swezey, 1937)	The golden twin spot moth is present in Hawaii (Swezey, 1937).
INSECT: Lepidoptera: Noctuidae: *Conistra vaccinii* (L.)	BE, FR, GE, NE (Nowacki and Fibiger, 1996), IT (Bendazzi and Pezzi, 2019; Faniano and Zinetti, 2010)	(Mattedi et al., 1997; Velcheva, 2009)	Leaves (Mattedi et al., 1997)	Adults overwinter, larvae feed on leaves, and pupation occurs in soil (Alford, 2014). Therefore, the pest is unlikely to be on dormant trees.
INSECT: Lepidoptera: Noctuidae:	**BE, NE (Nowacki and Fibiger, 1996), FR**	**(Velcheva, 2009)**	**Leaves (Alford, 2014)**	**Minor pest of fruit trees but mainly found on other broadleaf forest**

Cosmia pyralina (Denis & Schiffermüller)	**(Savourey, 2002), GE (Karisch et al., 2016), IT (Teobaldelli, 1994)**			**trees (Alford, 2014). Eggs overwinter on host plants (Alford, 2014); however, the egg-laying site is not reported. The pest could potentially be on dormant trees.**
INSECT: Lepidoptera: Noctuidae: _Cosmia trapezina_ (L.)	**GE, NE, UK (CABI, 2024a), IT (CABI, 2024a; Mattedi et al., 1997)**	**(Mattedi et al., 1997; Stastna and Psota, 2013; Velcheva, 2009)**	**Buds, flowers, leaves (hosts in general, (Alford, 2014)**	**Eggs overwinter on host plants (Alford, 2014); however, the egg-laying site is not reported. Therefore, the eggs could potentially be on dormant cuttings.**
INSECT: Lepidoptera: Noctuidae: _Diloba caeruleocephala_ (L.)	**BE, FR, GE, NE (Nowacki and Fibiger, 1996), IT (Greco et al., 2019; Raviglione et al., 2011), UK (Carter, 1984; Plant et al., 2019; Robinson et al., 2010)**	**(Alford, 2014; Bolu and Özgen, 2007; Carter, 1984; Velcheva, 2009; Velcheva, 2011)**	**Leaves, stems (Alford, 2014; Bolu and Özgen, 2007)**	**Eggs overwinter attached to the bases of young shoots, spurs, branches, or trunk and are covered with brown hairs from the female (Alford, 2014). Therefore, the eggs may be present on dormant trees.**
INSECT: Lepidoptera: Noctuidae: _Eupsilia transversa_ (Hufnagel)	BE, FR, GE (Nowacki and Fibiger, 1996), IT (Mattedi et al., 1997; Pinzari et al., 2010), NE (Meijer et al., 2012)	(Alford, 2014; Mattedi et al., 1997; Velcheva, 2009)	Leaves (Alford, 2014; Mattedi et al., 1997)	Minor pest of apple (Alford, 2014).
INSECT: Lepidoptera: Noctuidae: _Heliothis peltigera_ (Denis & Schiffermüller)	UK (Robinson et al., 2010)	(Robinson et al., 2010)	Leaves (Manjunath, 1976)	None.
INSECT: Lepidoptera: Noctuidae: _Lacanobia oleracea_ (L.)	BE, FR, GE, NE (Nowacki and Fibiger, 1996), IT (Bendazzi and Pezzi, 2019; Teobaldelli, 2017), UK (Robinson et al., 2010; Wilson et al., 2015)	(CABI, 2024a; Carter, 1984; Robinson et al., 2010)	Fruit, leaves (CABI, 2024a; Carter, 1984)	None.
INSECT: Lepidoptera: Noctuidae:	BE, FR, GE, NE (CABI, 2024a; Nowacki and Fibiger, 1996), IT	(Alford, 2014; CABI, 2024a; Carter, 1984)	Fruit, leaves (CABI, 2024a; Carter, 1984)	None.

Mamestra brassicae (L.)	(CABI, 2024a; Pinzari et al., 2010; Teobaldelli, 1994), UK (Carter, 1984; Robinson et al., 2010)			
INSECT: Lepidoptera: Noctuidae: *Melanchra persicariae* (L.)	BE, FR, GE, NE (Nowacki and Fibiger, 1996), IT (Pinzari et al., 2010)	(Alford, 2014; Carter, 1984)	Leaves (Alford, 2014; Carter, 1984)	Minor pest of apple (Alford, 2014).
INSECT: Lepidoptera: Noctuidae: *Naenia typica* (L.)	BE, FR, GE, NE (Nowacki and Fibiger, 1996), IT (Bendazzi and Pezzi, 2019)	(Alford, 2014; Carter, 1984)	Leaves (Alford, 2014; Carter, 1984)	Minor pest of apple (Alford, 2014).
INSECT: Lepidoptera: Noctuidae: *Orthosia cerasi* (Fabricius), syn. *O. stabilis* (Denis & Schiffermüller)	BE, FR, GE, NE (CABI, 2024a; Nowacki and Fibiger, 1996), IT (Bendazzi and Pezzi, 2019; Faniano and Zinetti, 2010)	(Alford, 2014; CABI, 2024a; Velcheva, 2009)	Fruit, leaves, buds, flowers, stems (Alford, 2014; CABI, 2024a; Meijer et al., 2012)	Eggs are laid on stems and branches in spring in clusters of 20-100. They hatch within two weeks. Larvae pupate in the soil (Alford, 2014; CABI, 2024a); therefore, no stages would be present on dormant trees.
INSECT: Lepidoptera: Noctuidae: *Orthosia cruda* (Denis & Schiffermüller)	BE (Nowacki and Fibiger, 1996), FR (Renou et al., 1991; Savourey, 2002), GE (Karisch et al., 2016; Werner, 1975), IT (Faniano and Zinetti, 2010; Pinzari et al., 2010), NE (Cuppen and Drost, 2005; Meijer et al., 2012)	(Alford, 2014; Velcheva, 2009)	Bark (Alford, 2014), leaves (Alford, 2014; Meijer et al., 2012)	A minor pest of apple but mainly associated with other forest trees. Eggs are laid on bark in spring (Alford, 2014) and would not be present on dormant trees.
INSECT: Lepidoptera: Noctuidae: *Orthosia gothica* (L.)	BE, NE (Nowacki and Fibiger, 1996), FR (Savourey, 2002), GE (Karisch et al., 2016; Werno, 1994), IT (Faniano and Zinetti, 2010; Pinzari et al., 2010)	(Alford, 2014; Mattedi et al., 1997; Velcheva, 2009)	Leaves, shoots, buds, fruitlets (Alford, 2014)	Larvae are external feeders. Eggs are laid in spring and hatch in about 10 days (Alford, 2014); therefore, they are unlikely to be on dormant cuttings.
INSECT: Lepidoptera: Noctuidae:	BE (Nowacki and Fibiger, 1996), FR (Renou et al., 1991; Savourey,	(Alford, 2014; Velcheva, 2009)	Leaves (Alford, 2014; Meijer et al.,	None.

Orthosia gracilis (Schiffermüller)	2002), GE (Karisch et al., 2016), IT (Pinzari et al., 2010; Teobaldelli, 2017), NE (Meijer et al., 2012)		2012), flowers (Alford, 2014)	
INSECT: Lepidoptera: Noctuidae: *Orthosia incerta* (Hufnagel)	BE (Nowacki and Fibiger, 1996), FR (Mazzei et al., 2019; Savourey, 2002), GE (Karisch et al., 2016; Werno, 1994), IT (Pinzari et al., 2010; Teobaldelli, 2017), NE (Cuppen, 2012b; Meijer et al., 2012)	(Alford, 1973; Carter, 1984; Mattedi et al., 1997; Velcheva, 2009)	Fruit (Alford, 2014), leaves (Alford, 2014; Carter, 1984; Meijer et al., 2012), shoots (Carter, 1984)	Young larvae feed in silk-spun shoots, while mature larvae feed fully exposed (Alford, 2014; Carter, 1984). Shoots spun with silk would be obvious and would not be harvested.
INSECT: Lepidoptera: Noctuidae: *Orthosia munda* (Denis & Schiffermüller), syn. *Anorthoa munda* (Denis & Schiffermüller), *Perigrapha munda* (Denis & Schiffermüller)	BE (Nowacki and Fibiger, 1996), FR (Savourey, 2002), GE (Karisch et al., 2016), IT (Faniano and Zinetti, 2010; Pinzari et al., 2010), NE (Meijer et al., 2012)	(Alford, 2014; Velcheva, 2009)	Leaves (Alford, 2014)	Apple is only an occasional host (Alford, 2014).
INSECT: Lepidoptera: Noctuidae: *Phlogophora meticulosa* (L.)	Widespread in Europe (Alford, 2014), FR (Savourey, 2002), GE (Werno, 1994), IT (Bendazzi and Pezzi, 2019; Teobaldelli, 2017)	(Alford, 2014)	Buds, flowers, leaves (Alford, 2014)	Apple is only an occasional host (Alford, 2014).
INSECT: Lepidoptera: Noctuidae: *Spodoptera littoralis* (Boisduval)	FR (Alford, 2014), IT (Lanzoni et al., 2012)	(CABI, 2024a; Mansour et al., 1981)	Leaves (CABI, 2024a; Mansour et al., 1981)	None.
INSECT: Lepidoptera: Noctuidae: *Spodoptera litura* (Fabricius)	FR (CABI, 2024a)	(CABI, 2024a; Thakur et al., 1974)	Leaves, buds (Thakur et al., 1974)	Egg masses are laid on leaves, where larvae then feed (Gupta et al., 2015; Thakur et al., 1974). Pupation takes place in

				the soil (Thakur et al., 1974).
INSECT: Lepidoptera: Notodontidae: *Phalera bucephala* L.	IT (CABI, 2024a; Cerretti and Tschorsnig, 2010; Pinzari et al., 2010)	(Alford, 1973)	Leaves (Alford, 1973; Carter, 1984)	None.
INSECT: Lepidoptera: Oecophoridae: *Diurnea fagella* (Denis & Schiffermüller)	BE, FR, GE, NE (Lvovsky, 1996), IT (Pinzari et al., 2010; Raviglione et al., 2011)	(Alford, 2014; Velcheva, 2009)	Leaves (Alford, 2014)	A minor pest of apple (Alford, 2014). Velcheva (2009) reported very low incidence in apple. Fagaceae appear to be the main hosts.
INSECT: Lepidoptera: Papilionidae: *Iphiclides podalirius* (L.)	BE (De Prins and Iversen, 1996), FR (Caterino et al., 2001; Nève, 2010), GE (Karisch et al., 2016), IT (Faniano and Zinetti, 2010; Teobaldelli, 2017), NE (De Prins and Iversen, 1996)	(Velcheva, 2009)	Leaves (Alford, 2014), stems (Weyh and Maschwitz, 1982)	Larvae can be attached to small branches encased in silk (Weyh and Maschwitz, 1982); however, this would be obvious, and infested branches would not be harvested for cuttings.
INSECT: Lepidoptera: Pieridae*: Aporia crataegi* L.	BE, FR, GE, NE (CABI, 2024a; De Prins and Iversen, 1996), IT (Faniano and Zinetti, 2010; Pinzari et al., 2010)	(Alford, 2014; CABI, 2024a; Velcheva, 2009)	Leaves, buds, flowers (Alford, 2014; CABI, 2024a)	Eggs, larvae, feeding, and pupation take place in summer. Third-instar larvae overwinter on trees in silken cocoons attached to leaves suspended from shoots.
INSECT: Lepidoptera: Pyralidae: *Cryptoblabes gnidiella* (Millière)	**FR (Cassarini, 2019), IT (CABI, 2024a; Ricciardi et al., 2021), UK (Carter, 1984; Plant et al., 2019; Robinson et al., 2010)**	**(CABI, 2024a; Carter, 1984; Robinson et al., 2010; Yehuda et al., 1991)**	**Leaves, flowers, fruit, stems (CABI, 2024a), bark, twigs (Carter, 1984)**	**Present in the United States in Hawaii (CABI, 2024a); (Robinson et al., 2010). Larvae feed on the bark of twigs and can pupate on its host plants (Carter, 1984).**
INSECT: Lepidoptera: Saturniidae: *Saturnia pavonia* (L.), syn. *Eudia pavonia* (L.)	BE, FR, GE, NE (CABI, 2024a; Schintlmeister, 1996a), IT (Bendazzi and Pezzi, 2019; Faniano and Zinetti, 2010), UK (CABI, 2024a; Plant et al., 2019)	(CABI, 2024a; Velcheva, 2009)	Leaves, stems (Alford, 2014; CABI, 2024a; Karisch et al., 2016)	Eggs are laid on stems in spring (Alford, 2014; CABI, 2024a). The moths overwinter in large conspicuous cocoons and would not be harvested with budwood sticks (Karisch et al., 2016).

INSECT: Lepidoptera: Saturniidae: *Saturnia pyri* (Denis and Schiffermüller)	BE (De Prins, 2016), FR (Deml and Dettner, 2002), GE (Sauer, 1986), IT (Durante and Pellegrino, 2019; Teobaldelli, 2017), NE (Schintlmeister, 1996a)	(CABI, 2024a; Savkovskii, 1981)	Leaves (Avidov and Harpaz, 1969; CABI, 2024a)	Eggs are laid on stems in spring, and pupation occurs away from the host trees (Avidov and Harpaz, 1969). This species is unlikely to be found on dormant trees.
INSECT: Lepidoptera: Sesiidae: *Synanthedon myopaeformis* (Borkhausen)	**BE (Bangels et al., 2008; Sierens et al., 2010), FR (Courtois, 1995; Laštůvka and Špatenka, 1996), GE (Karisch et al., 2016), NE (Laštůvka and Špatenka, 1996; Voerman et al., 1983), CAN (Jesperson, 2019), IT, UK (Carter, 1984; Robinson et al., 2010)**	**(Andreev et al., 2006; Ateyyat and Al-Antary, 2006; Jesperson, 2019; Sierens et al., 2010)**	**Bark (Alford, 2014; Carter, 1984; Jesperson, 2019)**	**Present in the continental United States (LaGasa, 2009), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. The species is an uncommon pest of apple, usually attacking old and neglected trees. Eggs are laid in bark crevices; larvae bore into bark and tunnel in the bark or wood and then pupate within the trees (Alford, 2014). Therefore, this pest could be on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Acleris cristana* (Denis & Schiffermuller)	BE, FR, GE, NE (Razowski, 1996), IT (Pinzari et al., 2010; Trematerra et al., 2018)	(Alford, 2014; Velcheva, 2009)	Leaves (Alford, 2014)	A minor pest of apple (Alford, 2014).
INSECT: Lepidoptera: Tortricidae: *Acleris holmiana* (L.), syn. *Croesia holmiana* (L.)	**BE (Razowski, 1996), FR (Chambon, 1999), GE (Karisch et al., 2016), IT (Pinzari et al., 2010), NE (Razowski, 1996)**	**(Alford, 2014; Carter, 1984; Velcheva, 2009; Velcheva, 2011)**	**Bark (Alford, 2014), leaves, fruitlets (Carter, 1984)**	**Present in the continental United States (Looney et al., 2016), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Eggs overwinter on the bark (Alford, 2014); therefore, they could be present on dormant trees.**
INSECT: Lepidoptera:	**BE (Groenen, 2003), FR**	**(Alford, 2014;**	**Leaves, bark, shoots, buds**	**Present in the continental United**

Tortricidae: *Acleris rhombana* (Denis & Schiffermüller)	**(Chambon and Fassotte, 1992), GE (Karisch et al., 2016), IT (Pinzari et al., 2010; Trematerra et al., 2018), NE (Beeke and De Jong, 1991), UK (Carter, 1984)**	**Carter, 1984; Miczulski and Koslinska, 1976; Sauphanor, 1981; Velcheva, 2011)**	**(Alford, 2014; Carter, 1984; Sauphanor, 1981)**	**States in Washington (Breedveld and Tanigoshi, 2007), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Eggs are laid on branches and buds where they overwinter (Alford, 2014; Dickler, 1991; Sauphanor, 1981). Therefore, the eggs could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Acleris variegana* (Denis & Schiffermüller)	FR (Chambon, 1999), GE (Karisch et al., 2016), IT (Pinzari et al., 2010; Trematerra et al., 2018), NE (Beeke and De Jong, 1991),	(Alford, 2014; Carter, 1984)	Leaves (Alford, 2014; Carter, 1984)	This species is present in the continental United States in Washington (LaGasa et al., 2003), but no records were found for Hawaii, Puerto Rico or the U.S. Virgin Islands.
INSECT: Lepidoptera: Tortricidae: *Adoxophyes orana* (Fischer von Röslerstamm), syn. *Capua reticulana* (Hübner)	BE, FR, GE (CABI, 2024a), IT (Pollini and Bariselli, 1997), NE (Beeke and De Jong, 1991), UK (Carter, 1984; Plant et al., 2019)	(Alford, 2014; Carter, 1984; Gilligan and Epstein, 2014; Miczulski and Koslinska, 1976; Pollini and Bariselli, 1997)	Fruit, leaves, buds, flowers, stems (Alford, 2014; Carter, 1984; Gilligan and Epstein, 2014; Soenen, 1947)	Larvae overwinter in conspicuous silken cocoons attached to dead leaves, mummified fruits, or branches (Alford, 2014). The silken structures would be obvious and removed at harvest.
INSECT: Lepidoptera: Tortricidae: *Ancylis achatina* (Denis & Schiffermüller)	BE, FR, GE (Razowski, 1996), IT (Pinzari et al., 2010), NE (Kuchlein and Ellis, 1997)	(Alford, 2014; Miczulski and Koslinska, 1976; Velcheva, 2009)	Leaves (Alford, 2014)	A minor pest of apple (Alford, 2014).
INSECT: Lepidoptera: Tortricidae: *Ancylis selenana* (Guenee)	Widely distributed in mainland Europe (Alford, 2014), FR (Chambon, 1999), GE (Razowski, 1996), IT (Pollini and Bariselli, 1997)	Alford, 2014; Carter, 1984; Pollini and Bariselli, 1997	Leaves (Alford, 2014; Carter, 1984)	Larvae overwinter in cocoons between dead leaves (Alford, 2014).

INSECT: Lepidoptera: Tortricidae: *Archips crataegana* (Hübner)	**BE (Razowski, 1996), FR (Chambon, 1999), GE (Karisch et al., 2016; Nässig, 2008), IT (Bendazzi and Pezzi, 2019), NE (Beeke and De Jong, 1991), UK (Plant et al., 2019; Robinson et al., 2010)**	**(Alford, 2014; Carter, 1984; Miczulski and Koslinska, 1976; Velcheva, 2009; Velcheva, 2011)**	**Leaves, branches, stems (Alford, 2014; Van der Geest and Evenhuis, 1991)**	**A minor pest of apple. Egg masses are laid on the trunks and main branches and covered with a hard, white substance that disguises them as bird droppings. This species overwinters in the egg stage (Alford, 2014); therefore, it could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Archips podana* Scopoli	**BE (Berwaerts et al., 2009), CAN (Gillespie, 1981), FR (Meyer et al., 2003), GE (Kienzle et al., 1997), IT (Boness, 1976), NE (Evenhuis and Vlug, 1983), UK (Carter, 1984; Plant et al., 2019; Robinson et al., 2010)**	**(Alford, 2014; Carter, 1984; Robinson et al., 2010)**	**Foliage, stems, branches, fruit (Alford, 2014)**	**This species is present in the continental United States in Washington (LaGasa et al., 2003), but no records were found for Hawaii, Puerto Rico or the U.S. Virgin Islands. The larvae pupate and overwinter in bark crevices (Carter, 1984), and therefore, it could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Archips rosana* (L.), syn. *A. rosanus* (L,)	**UK (Plant et al., 2019; Robinson et al., 2010)**	**(Alford, 2014; Carter, 1984; Robinson et al., 2010)**	**Foliage, stems, branches (Carter, 1984)**	**This species is present in the continental United States (CABI, 2024a), but no records were found for Hawaii, Puerto Rico or the U.S. Virgin Islands. Rose tortrix moths lay their eggs on bark where they overwinter (Carter, 1984), therefore, it could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Archips xylosteana* (L.)	**CAN (Hoebeke et al., 2008), BE, FR, GE, NE (Razowski, 1996), IT (Bendazzi and Pezzi, 2019; Pinzari et al., 2010), UK (Carter, 1984; Plant et al., 2019;**	**(Alford, 2014; Badra et al., 2019; Maharramova, 2011; Robinson et al., 2010; Velcheva, 2009)**	**Leaves, bark, stems (Alford, 2014; Carter, 1984; Maharramova, 2011)**	**Young larvae feed externally on new foliage and buds, causing important economic damage (Badra et al., 2019). Eggs are laid in masses on the bark of branches, where they overwinter (Hoebeke et al., 2008); therefore, it**

	Robinson et al., 2010)			**could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Argyrotaenia ljungiana* (Thunberg), syn. *A. pulchellana* (Haworth)	**BE, FR, GE (Razowski, 1996), IT (Trematerra et al., 2018), NE (Raemakers and Smits, 2009), UK (Carter, 1984)**	**(Alford, 2014; Bangels et al., 2008; Carter, 1984; Velcheva, 2009)**	**Fruit, leaves (Alford, 2014; Barbieux, 1993), bark, stems (Gilligan and Epstein, 2014; Ovsyannikova and Grichanov, 2009)**	**Pupae may overwinter in crevices of bark on trunks and branches (Gilligan and Epstein, 2014; Ovsyannikova and Grichanov, 2009), therefore it could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Cacoecimorpha pronubana* (Hübner)	**BE, CAN, FR, GE, IT, NE (CABI, 2024a), UK (Carter, 1984; Robinson et al., 2010)**	**(Carter, 1984; Nunes, 2021; Robinson et al., 2010)**	**Leaves (Alford, 2014; Carter, 1984)**	**Carnation tortrix moth larvae overwinter on host plants (Alford, 2014). This species is present in the continental United States in Washington (LaGasa et al., 2003) and categorized as non-quarantine for CONUS (ARM, 2024), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands.**
INSECT: Lepidoptera: Tortricidae: *Choristoneura diversana* (Hübner)	BE (De Prins, 2016), FR (Duflo and Maas, 2021), GE (Mey, 2019), IT (Trematerra et al., 2018), UK (Carter, 1984; Robinson et al., 2010)	(Carter, 1984; Robinson et al., 2010)	Leaves (Carter, 1984)	None.
INSECT: Lepidoptera: Tortricidae: *Choristoneura hebenstreitella* (Müller)	**BE, FR, GE (Razowski, 1996), IT (Pinzari et al., 2010), NE (Cuppen, 2012)**	**(Alford, 2014; Carter, 1984; Velcheva, 2009)**	**Bark, leaves (Carter, 1984)**	**First-instar larvae overwinter in cocoons on the bark (Carter, 1984); therefore, they could be on dormant trees and follow the pathway.**
INSECT: Lepidoptera: Tortricidae: *Clepsis spectrana* (Treitschke)	BE (Jansen, 2005), CAN (Dang et al., 1996), FR (Chambon, 1999), GE (Karisch et al., 2016;	CABI, 2019; Gilligan and Epstein, 2014; Robinson et al., 2010)	Fruit, leaves, flowers (Alford, 2014; Gilligan and Epstein, 2014)	Present in the continental United States (Gilligan and Epstein, 2014), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands.

	Zimmermann, 2004), IT (Trematerra et al., 2018), NE (Gilligan and Epstein, 2014), UK (Carter, 1984; Robinson et al., 2010)			Larvae of the second generation hibernate in silken retreats on other host plants, and it seems likely that they would do so among the webbed leaves where they feed and pupate.
INSECT: Lepidoptera: Tortricidae: *Enarmonia formosana* Scopoli	**BE (CABI, 2024a), CAN (Dang and Parker, 1990), FR, GE (Jenner et al., 2004), GE (Karisch et al., 2016), NE (Huisman et al., 2004)**	**(Alford, 2014; CABI, 2024a; Carter, 1984)**	**Bark, stem (Alford, 2014; Carter, 1984)**	**Present in the continental United States (Looney et al., 2016; NAPIS), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Eggs are laid on branches or trunks in summer; larvae feed and pupate below the surface of the bark (Alford, 2014; Carter, 1984). Therefore, this species could be in dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Exapate congelatella* (Clerck)	**BE, GE (Razowski, 1996), FR (Chambon, 1999)**	**(Alford, 2014; Miczulski and Koslinska, 1976; Velcheva, 2009)**	**Leaves, buds, flowers, fruitlets, stems (Alford, 2014)**	**A minor pest of apple. Eggs are laid in fall or winter, either singly or in batches on the bark of shoots and twigs and hatch in the spring (Alford, 2014). Therefore, the eggs could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Grapholita funebrana* (Treitschke), syn. *Cydia funebrana* (Treitschke)	**BE, FR, GE, NE (CABI, 2024a; Razowski, 1996), IT (Rizzo et al., 2012; Trematerra et al., 2018), UK (CABI, 2024a)**	**(CABI, 2024a; Olszak and Pluciennik, 2001)**	**Fruit (Gilligan and Epstein, 2014; Olszak and Pluciennik, 2001), bark, stem (Carter, 1984; Halstead, 2007)**	**Larvae overwinter under bark on branches and trunks (Carter, 1984; Halstead, 2007). Therefore, this species could be in dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Grapholita*	**FR, GE (Razowski, 1996), IT (Gambon et al., 2009), NE**	**(CABI, 2024a; Stigter, 1995)**	**Bark, fruit (Gambon et al., 2009; Kopec and**	**Larvae overwinter under the bark of host plants (Gambon et al., 2009).**

***lobarzewskii* Nowicki, syn. *Cydia lobarzewskii* (Nowicki)**	**(Stigter, 1995), UK (Plant et al., 2019)**		**Przybylowicz, 2001; Stigter, 1995)**	
INSECT: Lepidoptera: Tortricidae: *Hedya nubiferana* Haworth	**BE, FR, GE (Razowski, 1996), IT (Bendazzi and Pezzi, 2019; Trematerra et al., 2018), NE (Cuppen and Drost, 2005), UK (CABI, 2024a; Dickler, 1991)**	**(CABI, 2024a; Carter, 1984; Chapman and Lienk, 1971; Maharramova, 2011; Miczulski and Koslinska, 1976; Velcheva, 2009)**	**Leaves, buds, flowers, stems (Chapman and Lienk, 1971), bark, bud scales (hosts in general (CABI, 2024a)**	**Present in the continental United States (Chapman and Lienk, 1971; Looney et al., 2016; Rings, 1992), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Overwinter as third-instar larvae in bark crevices and under bud scales (CABI, 2024a; Chapman and Lienk, 1971; Riolo et al., 2006)**
INSECT: Lepidoptera: Tortricidae: *Neosphaleroptera nubilana* (Hübner)	**BE, FR, GE (Razowski, 1996), IT (Pinzari et al., 2010; Trematerra, 1993), NE (Huisman et al., 2007)**	**(Alford, 2014)**	**Shoots (Alford, 2014)**	**Larvae feed, overwinter, and pupate within silk-spun shoots (Alford, 2014) and therefore could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Pammene argyrana* (Hübner)	**BE, FR, GE, NE (Razowski, 1996), IT (Trematerra et al., 2018)**	**(Alford, 2014; Carter, 1984)**	**Fruitlets, bark, stems (Alford, 2014; Carter, 1984)**	**Larvae overwinter in cocoons on trunks beneath bark flakes (Alford, 2014). Therefore, they could potentially be on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Pammene rhediella* (Clerck)	**BE, NE (Razowski, 1996), FR (Chambon, 1999; Razowski, 1996), GE (Karisch et al., 2016; Razowski, 1996; Schmidt, 1987), IT (CABI, 2024a; Forti and Ioriatti, 1990), NE (Markó et al., 2008; Stigter, 1995), UK (Carter, 1984)**	**(Alford, 2014; CABI, 2024a; Carter, 1984; Markó et al., 2008; Miczulski and Koslinska, 1976)**	**Flowers, fruitlets, leaves, bark (Alford, 2014; Forti and Ioriatti, 1990)**	**Larvae overwinter in cocoons in bark cracks (Forti and Ioriatti, 1990) or under loose bark (Alford, 2014) . Therefore, they could be on dormant trees.**

INSECT: Lepidoptera: Tortricidae: *Pammene spiniana* (Duponchel)	BE, FR, GE (Razowski, 1996), IT (Trematerra et al., 2018), NE (Huisman et al., 2013)	(Miczulski and Koslinska, 1976; Velcheva, 2009)	Leaves (Miczulski and Koslinska, 1976)	None.
INSECT: Lepidoptera: Tortricidae: *Pandemis cerasana* (Hübner)	**BE, FR, GE, NE (Razowski, 1996), CAN (CABI, 2024a), IT (Bendazzi and Pezzi, 2019; Trematerra et al., 2018), UK (Carter, 1984; Robinson et al., 2010)**	**(Alford, 2014; Gilligan and Epstein, 2014; Maharramova, 2011; Velcheva, 2009)**	**Fruit (Alford, 2014; Maharramova, 2011), leaves (Alford, 2014; Gilligan and Epstein, 2014; Maharramova, 2011), flowers (Alford, 2014)**	**Present in the continental United States (LaGasa et al., 2003; Looney et al., 2016), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Eggs are sometimes laid on branches, and some eggs overwinter on the trees (Alford, 2014); therefore, they could be present on dormant trees.**
INSECT: Lepidoptera: Tortricidae: *Ptycholoma lecheana* (L.)	BE, FR, GE, NE (Razowski, 1996), IT (Trematerra et al., 2018)	(Alford, 2014; CABI, 2024a; Carter, 1984; Velcheva, 2009)	Leaves, shoots, buds, flowers (Alford, 2014; Carter, 1984; Maharramova, 2011)	Pupae overwinter in silken cocoons on branches (Alford, 2014; Carter, 1984) and are likely to be seen and removed during harvest.
INSECT: Lepidoptera: Tortricidae: *Syndemis musculana* (Hübner)	BE, FR (Razowski, 1996), GE (Marktanner, 2005; Nässig, 2008), IT (Raviglione et al., 2011; Trematerra et al., 2018), NE (Cuppen, 2012b), UK (Carter, 1984; Robinson et al., 2010)	(Alford, 2014; Blommers et al., 1988; Carter, 1984; Velcheva, 2009)	Fruit, leaves (Alford, 2014; Blommers et al., 1988; Glen, 1982)	None.
INSECT: Lepidoptera: Yponomeutidae: *Argyresthia pruniella* (Clerck)	**BE, CAN, FR, GE, IT, NE (CABI, 2024a), UK (Robinson et al., 2010)**	**(Carter, 1984; Robinson et al., 2010)**	**Flowers, fruit, foliage (Alford, 2014; Carter, 1984)**	**Eggs are laid under bud scales or in sheltered locations on the host where they overwinter (Alford, 2014). Present in the continental United States (LaGasa and Looney, 2014), but no records were found for Hawaii, Puerto Rico,**

				or the U.S. Virgin Islands.
INSECT: Lepidoptera: Yponomeutidae: *Scythropia crataegella* (L.)	UK (Carter, 1984; Robinson et al., 2010)	(Carter, 1984; Robinson et al., 2010)	Leaves (Carter, 1984)	None.
INSECT: Lepidoptera: Yponomeutidae: *Swammerdamia pyrella* (de Villers)	UK (Carter, 1984; Robinson et al., 2010)	(Carter, 1984; Robinson et al., 2010)	Leaf surfaces (Kimber, 2007)	None.
INSECT: Lepidoptera: Ypsolophidae: *Ypsolopha scabrella* (L.)	Widely distributed in Europe (Alford, 2014). FR, GR (Baraniak, 1996), IT (Pinzari et al., 2010)	(Alford, 2014; Velcheva, 2011)	Leaves, bark (Alford, 2014)	A minor pest of cultivated apple. Pupation occurs on the ground or under loose bark (Alford, 2014), which is unlikely to be found on young trees.
INSECT: Lepidoptera: Zygaenidae: *Aglaope infausta* (L.)	**FR (Leraut, 2010), GE (Geier, 1995), IT (Schmitt and Seitz, 2004)**	**(Alford, 2014)**	**Leaves, bark, fruit (Alford, 2014; Carter, 1984)**	**Larvae overwinter on the bark of host plants in scale-like structures (Alford, 2014).**
INSECT: Orthoptera: Tettigoniidae: *Leptophyes punctatissima* (Bosc)	**Widely distributed in Europe (Alford, 2014). BE (Hoffmans et al., 1989), FR (Sardet and Defaut, 2004), GE (Rheinlaender et al., 2007), NE (Schouten et al., 2007)**	**(Alford, 2014)**	**Leaves, shoots, stems (Alford, 2014)**	**Eggs laid singly in shoots and stems in fall and hatch the following spring (Alford, 2014); therefore, they could be present on dormant trees.**
INSECT: Thysanoptera: Thripidae: *Thrips flavus* Schrank	**FR (Pizzol et al., 2012), GE (CABI, 2024a), IT (Canale et al., 2003; Marullo, 2001), UK (Collins, 2010; Speyer, 1951)**	**(CABI, 2024a; Pobozniak, 2008)**	**Flowers, fruitlets, stems (Alford, 2014; Pobozniak, 2008)**	***Thrips flavus* has been found to overwinter as adults on host plants (Lee et al., 2001).**
INSECT: Thysanoptera: Thripidae: *Thrips major* Uzel	FR (Pizzol et al., 2014), IT (CABI, 2024a; Canale et al., 2003; Gargani, 1996), NE (Vierbergen,	(Atakan, 2008; CABI, 2024a; Pobozniak, 2008)	Flowers (Alford, 2014; Pobozniak, 2008)	None.

	2001), UK (Collins, 2010; Speyer, 1951)			
INSECT: Thysanoptera: Thripidae: *Thrips meridionalis* (Priesner)	FR (Pizzol et al., 2014), IT (Gargani, 1996; Marullo, 2001)	(Alford, 2014)	Flowers, fruits, leaves (Alford, 2014)	None.
MITE: Prostigmata: Tetranychidae *Bryobia graminum* (Schrank)	**BE, FR, GE, IT, UK (Bolland et al., 1998), NE (Weeks and Breeuwer, 2001)**	**(Bolland et al., 1998; Jeppson et al., 1975)**	**Leaves, bark, trunk (Jeppson et al., 1975)**	**Clover mites overwinter as eggs, but all stages may be found throughout the winter on the lower parts of apple tree trunks (Alford, 2014; Jeppson et al., 1975).**
MITE: Acari: Tenuipalpidae: *Cenopalpus pulcher* (Canestrini & Fanzago)	**BE (Witters et al., 2003), FR (Gutierrez et al., 1989; Navajas et al., 1996), GE (Jeppson et al., 1975), IT (Pritchard and Baker, 1958), NE (Cuppen, 2012a), UK (Hatzinikolis and Emmanouel, 1987)**	**(Alford, 2014; Bajwa et al., 2001; CABI, 2024a; Jeppson et al., 1975; Navajas et al., 1996)**	**Leaves, bark (Alford, 2014; Jeppson et al., 1975), buds (Jeppson et al., 1975)**	**Present in the continental United States (Bajwa et al., 2001; Beard et al., 2015) and categorized as non-quarantine for CONUS in ARM (ARM, 2024), but no records were found for Hawaii, Puerto Rico or the U.S. Virgin Islands. A minor pest of apple trees (Alford, 2014). Females overwinter on the bark (Alford, 2014; Jeppson et al., 1975), and the mites also move to buds in winter, when the trees are bare (Jeppson et al., 1975). Therefore, they could be on dormant trees.**
MITE: Acari: Tetranychidae: *Amphitetranychus viennensis* (Zacher), syn. *Tetranychus viennensis* Zacher	**BE, FR, GE, IT, NE, UK (Bolland et al., 1998)**	**(Alford, 2014; Bolland et al., 1998; CABI, 2024a; Stojnić et al., 2014; Zhang et al., 1993)**	**Fruit, leaves, shoots, stems (CABI, 2024a)**	**Mated females overwinter in cracks in the bark of trunks and branches (Alford, 2014; Jeppson et al., 1975) and could therefore be present on dormant trees.**
MITE: Acari: Tetranychidae: *Eotetranychus*	**BE (Grissa-Lebdi et al., 2002), FR (Auger et al.,**	**(Alford, 2014; Bolland et**	**Leaves, bark (Alford, 2014;**	**Present in the continental United States (Jeppson et al.,**

***pruni* (Oudemans), syn. *Tetranychus pruni* Oudemans**	**2003; Navajas et al., 1992), NE (Bolland et al., 1998)**	**al., 1998; Jeppson et al., 1975; Shahrokhi and Nikkhoo, 1990)**	**Jeppson et al., 1975)**	**1975), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Fertilized females overwinter on the bark of host trees (Alford, 2014; Jeppson et al., 1975) and therefore could be present on dormant trees.**
MOLLUSK: Stylommatophora: Bradybaenidae: *Fruticicola fruticum* (O. F. Müller), syn. *Bradybaena fructicum* Müller	BE, FR, GE, NL (Bank, 2017), IT (Manganelli et al., 2005)	(Godan, 1983)	Fruit, leaves, bark (Godan, 1983)	The literature does not describe egg-laying sites in natural settings, but eggs were laid in the soil in the laboratory (Kuźnik-Kowalska et al., 2013), and this is likely also the case in the wild. This species overwinters in the soil and is only active during warm weather (Staikou et al., 1990); therefore, it is unlikely to be associated with dormant trees.
MOLLUSK: Stylommatophora: Geometridae: *Xeroplexa intersecta* (Poiret), syn. *Candidula intersecta* (Poiret), *Helix intersecta* Poiret	BE (Marquet, 1985), FR (Cabaret et al., 1997; Holyoak and Holyoak, 2014), GE (Holyoak and Holyoak, 2014), IT (CABI, 2024a; Morris, 2021), NE (Godan, 1983; Lever and Majoor, 1986)	(CABI, 2024b; White-McLean, 2019)	Fruit (Godan, 1983)	Present in the continental United States (APHIS, 2012; CABI, 2024b; White-McLean, 2019), but no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Horticultural plants can serve as pathways for snails (Cowie, 1990). This species, however, seems to be primarily associated with the fruit and therefore would not be present on dormant trees.
MOLLUSK: Stylommatophora: Helicidae: *Cornu aspersum* (O. F. Müller), syn. *Cantareus aspersus* (Müller) [per GBIF, 2021] *Helix aspersa*	BE (Gielens et al., 1987), CAN (Capinera, 2001), FR (Arnaud et al., 2003), GE (Godan, 1983), NE (Baalbergen et al., 2016); IT (CABI, 2024b; Manganelli	(CABI, 2024b; White-McLean, 2021)	Fruit, leaves, bark, flowers, roots, stems, whole plant, plants in general (CABI, 2024a)	Present in the continental United States and Hawaii (CABI, 2024b; Capinera, 2001). No action except to Florida, Alabama, Puerto Rico, the U.S. Virgin Islands, Guam, and the Northern Mariana Islands (ARM, 2024).

Müller [per White-McLean, 2021]	et al., 2005; Vitturi et al., 2005)			Egg-laying and hibernation take place in the soil (Bezemer and Knight, 2001; Gunn, 1924). Snails on stems would be obvious and be removed at harvest.
FUNGUS *Cadophora luteo-olivacea* (J.F.H. Beyma) T.C. Harr. & McNew	**IT (Amaral Carneiro et al., 2022; Spadaro et al., 2011b)**	**(Amaral Carneiro et al., 2022; Spadaro et al., 2011b)**	**Fruit (Amaral Carneiro et al., 2022; Spadaro et al., 2011b), twigs (Guinet et al., 2016)**	**Neither this species nor its genus is listed in ARM (ARM, 2024). It is present in the continental United States (Travadon et al., 2015), but we found no evidence of its presence in Hawaii or Puerto Rico.**
FUNGUS *Colletotrichum godetiae* Neerg.	**BE (Grammen, 2019), CAN (Munawar et al., 2024), IT (Amaral Carneiro and Baric, 2021; Zapparata et al., 2017), NE (Wenneker et al., 2016a), UK (Baroncelli et al., 2014)**	**(Amaral Carneiro and Baric, 2021; Grammen, 2019)**	**Fruit (Amaral Carneiro and Baric, 2021; Grammen, 2019), nuts, buds, and stems extrapolated from other plant hosts (Materatski et al., 2018; Varjas et al., 2021)**	**This species is not listed in ARM, but *Colletotrichum* sp. is considered quarantine for the continental United States, Hawaii, and Puerto Rico (ARM, 2024). It is present in the continental United States (Damm et al., 2012; McHenry and Aćimović, 2024), but we found no evidence of is presence in Hawaii or Puerto Rico.**
FUNGUS *Colletotrichum nymphaeae* (Pass.) Aa, syn. *Ovularia nymphaearum* (Allesch.) Bres. & Allesch.	**CAN (Ginns, 1986; Jayawardena et al., 2016), NE (Jayawardena et al., 2016)**	**(Moreira et al., 2019; Munir et al., 2016)**	**Fruit (Munir et al., 2016), leaves (Moreira et al., 2019), stems extrapolated from other plants host (Materatski et al., 2018)**	**This species is considered quarantine for Hawaii and Puerto Rico (ARM, 2024). We found no evidence of its presence in Hawaii or Puerto Rico.**
FUNGUS *Colletotrichum salicis* (Fuckel) Damm, P.F. Canon & Crous	**GE (Damm et al., 2012), IT (Amaral Carneiro and Baric, 2021), NE, UK (Damm et al., 2012)**	**(Amaral Carneiro and Baric, 2021)**	**Branches and stems extrapolated from other host plants (Damm et al., 2012), fruit**	**This species is not listed in ARM but *Colletotrichum* sp. is considered quarantine for the continental United States, Hawaii, and Puerto Rico (ARM,**

			(Amaral Carneiro and Baric, 2021)	**2024). It is present in the continental United States (Damm et al., 2012), but we found no evidence of its presence in Hawaii and Puerto Rico.**
FUNGUS *Dactylonectria pauciseptata* (Schroers & Crous) L. Lombard & Crous, syn. *Cylindrocarpon pauciseptatum* Schroers & Crous	CAN (Úrbez-Torres et al., 2014), IT (Yaseen et al., 2012)	(Tewoldemedhin et al., 2011b)	Roots (Tewoldemedhin et al., 2011b)	None.
FUNGUS *Dematophora necatrix* R. Hartig, syn. *Rosellinia necatrix* Berl. ex Prill.	FR (de Sousa et al., 1995; Guillaumin et al., 1982), GE (CABI, 2024a), IT (Fusco et al., 2022; Sorrentino et al., 2021), UK (Francis, 1985)	(Sutton et al., 2014)	Roots (Sutton et al., 2014)	*Rosellinia necatrix* is a quarantine pest for Hawaii only (ARM, 2024).
FUNGUS *Desarmillaria tabescens* (Scop.) R.A. Koch & Aime, syn. *Armillaria tabescens* (Scop.) Emel	IT, UK (Guillaumin et al., 1993)	(Momol et al., 2007)	Roots (Momol et al., 2007)	None.
FUNGUS *Diaporthe perniciosa* Marchal & É.J. Marchal	CAN (Ginns, 1986), UK (Kanematsu et al., 2000; Nawawi Bin Hoji Ayub and Swinburne, 1970)	(Ginns, 1986; Sutton et al., 2014)	Fruit and dead wood (Nawawi Bin Hoji Ayub and Swinburne, 1970)	None.
FUNGUS *Gymnosporangium yamadae* Miyabe ex G. Yamada	CAN (Hambleton et al., 2011)	(Hambleton et al., 2011; Zhao et al., 2020)	Fruit [rarely], leaves (Sutton et al., 2014; Yun et al., 2009)	None.
FUNGUS *Microcyclospora malicola* J. Frank, Schroers & Crous	GE (Frank et al., 2010)	(Frank et al., 2010)	Fruit (Frank et al., 2010)	None.
FUNGUS	GE (Frank et al., 2010)	(Frank et al., 2010)	Fruit (Frank et al., 2010)	None.

Microcyclospora pomicola J. Frank, B. Oertel, Schroers & Crous				
FUNGUS *Microcyclosporella mali* J. Frank, Schroers & Crous	GE (Frank et al., 2010)	(Frank et al., 2010)	Fruit (Frank et al., 2010)	None.
FUNGUS *Monilinia fructigena* Honey ex Whetzel	**BE (Côté et al., 2004), FR (Ioos and Frey, 2000), GE (Côté et al., 2004), IT (Abate et al., 2018), NE, UK (Côté et al., 2004)**	**(Van Leeuwen et al., 2000)**	**Fruit, flowers, stems extrapolated from other plant hosts (CABI, 2024a; Sutton et al., 2014; Van Leeuwen et al., 2000)**	**There is one verified report of this pest from the United States. It was collected from an experimental Maryland orchard which was destroyed (Batra and Harada, 1986; Cline, 2005). This pest is not currently present in the United States.**
FUNGUS *Neofusicoccum luteum* (Pennycook & Samuels) Crous, Slippers & A.J.L. Phillips	**GE (Fischer et al., 2016), IT (Linaldeddu et al., 2015)**	**(Delgado-Cerrone et al., 2016; Lazzizera et al., 2008)**	**Fruit, stems (Delgado-Cerrone et al., 2016)**	**This species is considered quarantine for Hawaii and Puerto Rico (ARM, 2024). We found no evidence of its presence in Hawaii or Puerto Rico.**
FUNGUS *Neofusicoccum ribis* (Slippers, Crous & M.J. Wingf.) Crous, Slippers & A.J.L. Phillips, syn. *Botryosphaeria ribis* Grossenb. & Duggar	**FR (CABI, 2024a; Farr and Rossman, 2024), GE (Cannon, 2017; Taylor and Hyde, 2003), IT (Venturella, 1991), NE (Crous, 2005; Youssef and Wenneker, 2021), UK (CABI, 2024a)**	**(Jurick et al., 2013)**	**Fruit (Jurick et al., 2013), stems [extrapolated from *Prunus* spp.] (Farr et al., 1989; Ye, 2005)**	***Neofusicoccum ribis* is non-quarantine for the continental United States, Hawaii, and Puerto Rico (ARM, 2024). However, its synonym, *Botryosphaeria ribis* is quarantine for Puerto Rico (ARM, 2024).**
FUNGUS *Neonectria candida* (Ehrenb.) Rossman, L. Lombard & Crous, syn. *Cylindrocarpon ehrenbergii* Wollenw., *C. obtusiusculum* (Sacc.) U. Braun,	GE (Castlebury et al., 2006), NE (Wenneker et al., 2016b), UK (Cabral et al., 2012; Castlebury et al., 2006)	(Castlebury et al., 2006; Lawrence et al., 2019)	Fruit (Cabral et al., 2012)	None.

N. ramulariae Wollenw.				
FUNGUS *Paradevriesia pseudoameriCAa* (J. Frank, B. Oertel, Schroers & Crous) Crous, syn. *Devriesia pseudoamericana* J. Frank, B. Oertel, Schroers & Crous	GE (Frank et al., 2010)	(Frank et al., 2010)	Fruit (Frank et al., 2010)	None.
FUNGUS *Phellinus alni* (Bondartsev) Parmasto	GE (Fischer and Binder, 1995)	(Fischer and Binder, 1995; Tomšovský et al., 2010)	Wood decay fungus extrapolated from other plant hosts (Sell, 2012; Tomšovský et al., 2010)	None.
FUNGUS *Phyllactinia mali* (Duby) U. Braun, syn. *Erysiphe guttata* var. *mespili* Castagne	**BE, FR, GE, IT, UK (Braun, 1995), CAN (CABI, 2024a)**	**(Braun, 1995; Heluta and Minter, 1998)**	**Buds, leaves (Braun, 1995; Heluta and Minter, 1998)**	**This species is not in ARM, but *Phyllactinia* sp. is uncategorized for the continental United States, Hawaii, and Puerto Rico. This species is present in the continental United States (Aime and Abbasi, 2022; CABI, 2024a). We found no evidence of its presence in Hawaii or Puerto Rico.**
FUNGUS *Ramularia mali* Videira & Crous	IT (Videira et al., 2015)	(Videira et al., 2015)	Fruit, leaves (Videira et al., 2015)	None.
FUNGUS *Venturia asperata* Samuels & Sivan., syn. *Fusicladium asperatum* K. Schub. & U. Braun	CAN (Schubert et al., 2003), IT (Turan et al., 2019)	(Turan et al., 2019; Zhou et al., 2021)	Fruit, leaves (Turan et al., 2019; Zhou et al., 2021)	None.
CHROMISTAN *Phytophthora cambivora* (Petri) Buisman	**BE (CABI, 2024a; Schmitz et al., 2009), CAN (Feau et al., 2022), FR (Jung et al., 2017;**	**(Saavedra et al., 2007; Tidball and Linderman, 1990)**	**Crowns, roots, stems (Sutton et al., 2014; Tidball and**	**This species is not in ARM, but *Phytophthora* sp. is quarantine for the continental United States, Hawaii, and**

	Vettraino et al., 2005), GE (Nechwatal et al., 2011), IT (Vettraino et al., 2005), NE (Schubert et al., 1999), UK (Brasier and Kirk, 2001)		**Linderman, 1990)**	**Puerto Rico. This species is present in the continental United States (McKeever and Chastagner, 2016; Saavedra et al., 2007). We found no evidence of its presence in Hawaii or Puerto Rico.**
CHROMISTAN *Phytophthora syringae* (Berk.) Kleb.	**CAN (Feau et al., 2022), FR (Ioos et al., 2006), GE (Jung et al., 2016), IT (Vettraino et al., 2005), NE (Schubert et al., 1999), UK (Henricot et al., 2004; Jung et al., 2016)**	**(Lolas et al., 2016; Tidball and Linderman, 1990)**	**Fruit, roots, stems (Lolas et al., 2016; Tidball and Linderman, 1990)**	**This species is not listed in ARM, but *Phytophthora* sp. is quarantine for the continental United States, Hawaii, and Puerto Rico. This species is present in the continental United States (Hulvey et al., 2010; Riley et al., 2024). We found no evidence of its presence in Hawaii or Puerto Rico.**
CHROMISTAN *Phytopythium vexans* (de Bary) Abad, de Cock, Bala, Robideau, Lodhi & Lévesque, syn. *Pythium vexans* de Bary	UK (Browne et al., 2023)	(Tewoldemedhin et al., 2011a; Zhou et al., 2022)	Roots (Jabiri et al., 2021)	None.
NEMATODE *Aphelenchoides varicaudatus* Ibrahim & Hooper	NE (USDANC, 2019)	(USDANC, 2019)	Roots (Ibrahim, 1994) (based on activity on rose)	None.
NEMATODE *Globodera rostochiensis* (Wollenweber) Behrens	CAN (Not widely distributed and under official control) (NAPPO, 2021a)	(Shahina and Erum, 2007)	Roots (Shahina and Erum, 2007)	Not widely distributed and under official control in the United States (NAPPO, 2021b)
NEMATODE *Meloidogyne mali* Itoh, Ohshima & Ichinoche, syn. *Meloidogyne ulmi* Palmisano & Ambrogioni	BE (Suwanngam and Wesemael, 2019), IT (Palmisano and Ambrogioni, 2000), NE (Janssen	(Itoh et al., 1969)	Roots (Itoh et al., 1969)	Present in the continental United States in New York (Eisenback et al., 2017).

	et al., 2017b), UK (Prior et al., 2019)			
NEMATODE *Pratylenchus fallax* Seinhorst	BE (Bert, 2003; Nickle, 1991), CAN (Yu, 2008; Yu et al., 1997), GE (Decker, 1974), NE (Hoestra, 1968; Janssen et al., 2017a)	(Janssen et al., 2017b; PestID, 2019; Seinhorst, 1968)	Roots (Janssen et al., 2017b; Seinhorst, 1968)	Quarantine for Hawaii, Puerto Rico, and U.S. Territories; non-quarantine for the continental United States (ARM, 2024)
NEMATODE *Pratylenchus pratensis* (de Man) Filipjev	CAN (Yu, 2008), IT (Inserra et al., 1979), UK (Southey, 1959)	(Goodey et al., 1965; Poiras et al., 2013)	Roots (Poiras et al., 2013)	Quarantine for Hawaii, Puerto Rico, and U.S. Territories; non-quarantine for the continental United States (ARM, 2024)
BACTERIUM '*Candidatus* Phytoplasma mali' Seemüller and Schneider	**BE (CABI, 2024a; Olivier, 2010), FR (CABI, 2024a; Seemüller et al., 2003), GE (Seemüller et al., 2003), IT (CABI, 2024a; Casati et al., 2010), NE (CABI, 2024a)**	**(Sutton et al., 2014)**	**Within sieve tube elements (Sutton et al., 2014)**	None.
VIROID *Apscaviroid fossulamali*, syn. *Apscaviroid Apple dimple fruit viroid*	**IT (Di Serio et al., 1997)**	**(Di Serio et al., 1997)**	**Within plant tissues (CABI, 2024a)**	**None.**
VIROID *Apscaviroid pustulapyri*, syn. *Apscaviroid Pear blister canker viroid*	**CAN (Torchetti et al., 2012)**	**(Kaponi et al., 2012)**	**Systemic (CABI, 2024a)**	**Present in the continental United States only in research locations/quarantine stations (Lin et al., 2011). Not listed in ARM (2024).**
VIRUS *Coguvirus citri*, syn. *Coguvirus Citrus concave gum-associated virus*	**CAN (Xiao et al., 2022), IT (Minutolo et al., 2021), FR (Wright et al., 2018)**	**(Wright et al., 2018)**	**Buds, petals, leaves, young bark tissue (Minutolo et al., 2021; Wright et al., 2018)**	**Present in the continental United States (Wright et al., 2018). Categorized as non-quarantine for CONUS and quarantine for Hawaii and Puerto Rico (ARM, 2024).**
VIRUS *Foveavirus* Apple green crinkle associated virus,	**CAN (James et al., 2013), FR, GE, IT, UK (CABI, 2024a)**	**(James et al., 2013; Sutton et al., 2014)**	**Leaves (James et al., 2013), phloem**	**Present in the continental United States (CABI, 2024a; Sutton et al., 2014); no**

syn. Apple green crinkle agent (unknown etiology)			**(Sutton et al., 2014)**	**records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. Quarantine pest for the continental United States (ARM, 2024).**
VIRUS *Rubodvirus mali* syn. Apple rubbery wood virus 1; Apple rubbery wood disease agent [unknown etiology]; Apple rubbery wood phytoplasma	**CAN (Xiao et al., 2022), GE (Rott et al., 2018), IT (Minutolo et al., 2023)** **Apple rubbery wood disease: UK (Bertaccini et al., 2001), FR, NE (EPPO, 2024)**	**(Rott et al., 2018; Sutton et al., 2014)**	**Phloem (Sutton et al., 2014)**	**For some of the international distribution of apple rubbery wood disease, it is unclear which virus is present. *Rubodvirus mali* has been detected in the United States (Rott et al., 2018). It is a quarantine pest for the continental United States (ARM, 2024).**
VIRUS *Rubodvirus prosserense* syn. Apple rubbery wood virus 2; Apple rubbery wood disease agent [unknown etiology]; Apple rubbery wood phytoplasma	**CAN (Rott et al., 2018; Xiao et al., 2022), GE (Rott et al., 2018), FR (Svanella-Dumas et al., 2005), IT (Minutolo et al., 2023)** **Apple rubbery wood disease: UK (Bertaccini et al., 2001), NE (EPPO, 2024)**	**(Rott et al., 2018; Sutton et al., 2014)**	**Phloem (Sutton et al., 2014)**	**For some of the international distribution of apple rubbery wood disease, it is unclear which virus is present. *Rubodvirus prosserense* has been detected in the United States (Rott et al., 2018). It is a non-quarantine pest for the continental United States, and a quarantine pest for Hawaii and Puerto Rico (ARM, 2024).**

2.2. Notes on pests identified in the pest list

Ostrinia nubilalis (Hübner): Egg masses are laid in the underside of leaves (Jentsch, 2021), although surrounding weed hosts are the primary source of shoot infestation by larvae (Eaton, 2011; MacCreary and Milliron, 1952; Weires and Straub, 1982). Larvae tunnel into shoots of young trees and fruit to feed (Weires and Straub, 1982). Small holes with frass deposits on the outside of shoots are left at the site of larval entry, usually near the axil of a leaf. Shoot tunneling by larvae causes death of the portion distal of the feeding site or predisposes the shoot to breakage (CABI, 2024a; Weires and Straub, 1982). Larvae migrate away from the feeding site during the handling and shipment to market of infested plant products (Caffrey and Worthley, 1930), and seem to overwinter elsewhere than apple shoots (Weires and Straub, 1982). *Ostrinia nubilalis* larvae are highly unlikely to follow the pathway.

2.3. Pests considered but not included on the pest list

2.3.1. Pathogens with non-quarantine status

We found evidence of pathogens that are associated with *Malus* spp. unrooted cuttings and are present in the export area; however, they are not of quarantine significance for the PRA area (see Appendix).

2.3.2. Quarantine pests considered but not included on the pest list

The following pathogens have weak evidence for association with *Malus* spp.: *Alternaria brassicae*, *Cladosporium pseudocladosporioides*, *Diplococcium asperum*, *Neocosmospora metavorans*, and *Paraconiothyrium fuscomaculans* (Farr and Rossman, 2024). We found no primary references associating these fungi with disease on apple.

The moth *Dicallomera fascelina* (L.) [syn. *Calliteara fascelina* L., *Gynaephora fascelina* (L.)] [Lepidoptera: Erebidae (formerly Lymantriidae)] is reported from Belgium, France, Germany, Italy, and the Netherlands (Karisch et al., 2016; Raviglione et al., 2014; Schintlmeister, 1996b; Tips and Halflants, 1978) and was found in the canopy of apple trees in Bulgaria (Velcheva, 2009). However, we found no additional evidence that this species completes its life cycle on this host; therefore, we did not include this pest in Table 1.

The moth *Orgyia recens* (Hübner) (Lepidoptera: Erebidae) is reported from Belgium, France, Germany, and the Netherlands (Cupedo, 2017; Karisch et al., 2016; Schintlmeister, 1996b; Tips and Halflants, 1978), and CABI (2024a) lists *Malus domestica* as a host; however, we found no direct evidence of a host association in the literature. Therefore, we did not include this pest on Table 1.

The Asian longhorned beetle (ALB), *Anoplophora glabripennis* (Motschulsky) [Coleoptera: Cerambycidae], is reported from France (with a restricted distribution (NAPPO, 2019b)), Germany (where it is under eradication (NAPPO, 2019a)), and Italy (Favaro et al., 2015). Records of *Malus* spp. as hosts are limited. One report lists *Malus* as only an adult feeding host (Wang et al., 2000); another classifies *Malus* as a resistant host, where resistance was defined as 0-5% plant damage rate or where ALB may oviposit but cannot complete their life history (Wang et al., 2009); another includes one questionable oviposition record from the U.S. (Wang et al., 2016). Additionally, ALB completes development in hosts that are 2cm or larger in diameter (Morewood et al., 2003; Morewood et al., 2004), and are rarely, if ever, intercepted on budwood (Saccaggi and Pieterse, 2013). Because there are no validated records of infestation on *Malus* spp., we did not include this pest on Table 1.

The fungus *Diplodia malorum* Fuckel is reported from Germany (Phillips, 2012) based on a specimen collected in 1870. No additional records were found. It is reported from *Malus* spp. (Hanifeh, 2013; Phillips, 2012); however, this fungus is found in association with dead, dying, or compromised trees/fruit (Hanifeh, 2013; McAlpine, 1902; Saccardo, 1884) and is not likely to be associated with commercially produced cuttings.

Neonectria coccinea (Pers. : Fr.) Rossman & Samuels: There are reports of this pathogen being present in Canada, France, Germany, Italy, the Netherlands, the United Kingdom, and the United

States (Farr and Rossman, 2024). However, it has been determined that *N. coccinea sensu stricto* is restricted to *Fagus* spp. hosts in Europe and Asia, whereas reports in North America should be identified as *Neonectria faginata* (M.L. Lohman, A.M.J. Watson & Ayers) Castl. & Rossman (Farr and Rossman, 2024; Hirooka et al., 2013).

2.3.3. Organisms identified only to the genus level

In commodity risk assessments, the taxonomic unit for pests selected for evaluation beyond the pest categorization stage is usually the species (IPPC, 2021). Generally, we do not assess risk for organisms identified only to the genus level, especially if the genus is reported in the PRA area. Many genera contain multiple species, and we cannot know if the unidentified species occurs or is regulated in the PRA area. Because the organism has not been fully identified, we cannot properly assess the likelihood and consequences of its introduction. However, if the genus is absent from the PRA area or is actionable at U.S. ports of entry, the genus can be regulated as a quarantine pest.

We identified no quarantine genera that could follow the commodity pathway.

3. Summary

We determined the following 96 quarantine pests have a reasonable likelihood of following the commodity import pathway (Table 2).

Table 2. Pests that can follow the commodity import pathway.

Pest type	Taxonomy	Species names
Insect	Coleoptera: Buprestidae	*Agrilus sinuatus* (Olivier)*
Insect	Coleoptera: Cerambycidae	*Anoplophora chinensis* (Förster)
Insect	Coleoptera: Curculionidae	*Anthonomus pyri* Kollar
Insect	Diptera: Cecidomyiidae	*Resseliella oculiperda* (Rübsaamen)
Insect	Hemiptera: Aphididae	*Dysaphis devecta* (Walker)
Insect	Hemiptera: Aphididae	*Dysaphis pyri* (Boyer de Fonscolombe)
Insect	Hemiptera: Aphididae	*Pterochloroides persicae* (Cholodkovsky)
Insect	Hemiptera: Aphididae	*Rhopalosiphum oxyacanthae* (Schrank)*
Insect	Hemiptera: Cicadellidae	*Alnetoidia alneti* (Dahlbom)
Insect	Hemiptera: Cicadellidae	*Cicadella viridis* (L.)
Insect	Hemiptera: Cicadellidae	*Edwardsiana crataegi* (Douglas)
Insect	Hemiptera: Cicadellidae	*Typhlocyba quercus* (F.)
Insect	Hemiptera: Coccidae	*Ceroplastes japonicus* Green
Insect	Hemiptera: Coccidae	*Ceroplastes rubens* Maskell
Insect	Hemiptera: Coccidae	*Ceroplastes rusci* (L.)*
Insect	Hemiptera: Coccidae	*Eulecanium ciliatum* (Douglas)
Insect	Hemiptera: Coccidae	*Eulecanium tiliae* (L.)*
Insect	Hemiptera: Coccidae	*Palaeolecanium bituberculatum* (Signoret)
Insect	Hemiptera: Coccidae	*Sphaerolecanium prunastri* (Boyer de Fonscolombe)*
Insect	Hemiptera: Coccidae	*Takahashia japonica* (Cockerell)
Insect	Hemiptera: Diaspididae	*Diaspidiotus marani* (Zahradnik)

Pest type	Taxonomy	Species names
Insect	Hemiptera: Diaspididae	*Diaspidiotus pyri* (Lichtenstein)
Insect	Hemiptera: Diaspididae	*Melanaspis inopinata* (Leonardi)
Insect	Hemiptera: Diaspididae	*Suturaspis archangelskyae* (Lindinger)
Insect	Hemiptera: Miridae	*Apolygus spinolae* (H. Meyer-Dür)
Insect	Hemiptera: Miridae	*Blepharidopterus angulatus* (Fallen)
Insect	Hemiptera: Miridae	*Lygocoris rugicollis* (Fallén)
Insect	Hemiptera: Miridae	*Orthotylus marginalis* Reuter
Insect	Hemiptera: Monophlebidae	*Icerya seychellarum* (Westwood)
Insect	Hemiptera: Pseudococcidae	*Pulvinaria regalis* (Canard)
Insect	Hemiptera: Psyllidae	*Cacopsylla mali* (Schmidberger)
Insect	Hemiptera: Psyllidae	*Cacopsylla melanoneura* (Foerster)
Insect	Hemiptera: Psyllidae	*Cacopsylla pyri* (L.)
Insect	Hemiptera: Tingidae	*Stephanitis pyri* (Fabricius)
Insect	Hymenoptera: Cephidae	*Janus compressus* (Fabricius)
Insect	Lepidoptera: Agonoxenidae	*Blastodacna atra* (Haworth)
Insect	Lepidoptera: Coleophoridae	*Coleophora hemerobiella* (Scopoli)
Insect	Lepidoptera: Cossidae	*Cossus cossus* L.
Insect	Lepidoptera: Erebidae	*Euproctis similis* (Fuessly)
Insect	Lepidoptera: Erebidae	*Lymantria monacha* L.
Insect	Lepidoptera: Geometridae	*Erannis defoliaria* (Clerck)
Insect	Lepidoptera: Geometridae	*Pasiphila rectangulata* (L.)*
Insect	Lepidoptera: Lasiocampidae	*Gastropacha quercifolia* (L.)
Insect	Lepidoptera: Lasiocampidae	*Malacosoma neustria* (L.)
Insect	Lepidoptera: Lyonetiidae	*Leucoptera malifoliella* (Costa)
Insect	Lepidoptera: Noctuidae	*Acronicta psi* (L.)
Insect	Lepidoptera: Noctuidae	*Acronicta tridens* (Denis & Schiffermüller)
Insect	Lepidoptera: Noctuidae	*Allophyes oxyacanthae* (L.)
Insect	Lepidoptera: Noctuidae	*Cosmia pyralina* (Denis & Schiffermüller)
Insect	Lepidoptera: Noctuidae	*Cosmia trapezina* (L.)
Insect	Lepidoptera: Noctuidae	*Diloba caeruleocephala* (L.)
Insect	Lepidoptera: Pyralidae	*Cryptoblabes gnidiella* (Millière)
Insect	Lepidoptera: Sesiidae	*Synanthedon myopaeformis* (Borkhausen)*
Insect	Lepidoptera: Tortricidae	*Acleris holmiana* (L.)*
Insect	Lepidoptera: Tortricidae	*Acleris rhombana* (Denis & Schiffermüller)*
Insect	Lepidoptera: Tortricidae	*Archips crataegana* (Hübner)
Insect	Lepidoptera: Tortricidae	*Archips podana* Scopoli*
Insect	Lepidoptera: Tortricidae	*Archips rosana* (L.)*
Insect	Lepidoptera: Tortricidae	*Archips xylosteana* (L.)
Insect	Lepidoptera: Tortricidae	*Argyrotaenia ljungiana* (Thunberg)
Insect	Lepidoptera: Tortricidae	*Cacoecimorpha pronubana* (Hübner)*
Insect	Lepidoptera: Tortricidae	*Choristoneura hebenstreitella* (Müller)
Insect	Lepidoptera: Tortricidae	*Enarmonia formosana* Scopoli*
Insect	Lepidoptera: Tortricidae	*Exapate congelatella* (Clerck)
Insect	Lepidoptera: Tortricidae	*Grapholita funebrana* (Treitschke)
Insect	Lepidoptera: Tortricidae	*Grapholita lobarzewskii* Nowicki
Insect	Lepidoptera: Tortricidae	*Hedya nubiferana* Haworth*
Insect	Lepidoptera: Tortricidae	*Neosphaleroptera nubilana* (Hübner)
Insect	Lepidoptera: Tortricidae	*Pammene argyrana* (Hübner)

Pest type	Taxonomy	Species names
Insect	Lepidoptera: Tortricidae	*Pammene rhediella* (Clerck)
Insect	Lepidoptera: Tortricidae	*Pandemis cerasana* (Hübner)*
Insect	Lepidoptera: Yponomeutidae	*Argyresthia pruniella* (Clerck)*
Insect	Lepidoptera: Zygaenidae	*Aglaope infausta* (L.)
Insect	Orthoptera: Tettigoniidae	*Leptophyes punctatissima* (Bosc)
Insect	Thysanoptera: Thripidae	*Thrips flavus* Schrank
Mite	Prostigmata: Tetranychidae	*Bryobia graminum* (Schrank)
Mite	Acari: Tenuipalpidae	*Cenopalpus pulcher* (Canestrini & Fanzago)*
Mite	Acari: Tetranychidae	*Amphitetranychus viennensis* (Zacher)
Mite	Acari: Tetranychidae	*Eotetranychus pruni* (Oudemans)*
Fungus	Leotiomycetes: Helotiales	*Cadophora luteo-olivacea* (J.F.H. Beyma) T.C. Harr. & McNew*
Fungus	Ascomycetes: Phyllachorales	*Colletotrichum godetiae* Neerg.
Fungus	Sordariomycetes: Glomerellales	*Colletotrichum nymphaeae* (Pass.) Aa*
Fungus	Sordariomycetes: Glomerellales	*Colletotrichum salicis* (Fuckel) Damm, P.F. Canon & Crous
Fungus	Ascomycetes: Helotiales	*Monilinia fructigena* Honey ex Whetzel
Fungus	Dothideomycetes: Botryosphaeriales	*Neofusicoccum luteum* (Pennycook & Samuels) Crous, Slippers & A.J.L. Phillips
Fungus	Dothideomycetes: Botryosphaeriales	*Neofusicoccum ribis* (Slippers, Crous & M.J. Wingf.) Crous, Slippers & A.J.L. Phillips
Fungus	Ascomycetes: Erysiphales	*Phyllactinia mali* (Duby) U. Braun*
Chromistan	Leotiomycetes: Helotiales	*Phytophthora cambivora* (Petri) Buisman
Chromistan	Ascomycetes: Phyllachorales	*Phytophthora syringae* (Berk.) Kleb.*
Bacterium	Mollicutes: Acholeplasmatales	'*Candidatus* Phytoplasma mali'
Viroid	Pospiviroidae	*Apscaviroid fossulamali*
Viroid	Pospiviroidae	*Apscaviroid pustulapyri*
Virus	Phenuiviridae	*Coguvirus citri**
Virus	Betaflexiviridae	*Foveavirus* Apple green crinkle associated virus
Virus	Phenuiviridae	*Rubodvirus mali*
Virus	Phenuiviridae	*Rubodvirus prosserense**

*This applies only to Hawaii or the U.S. territories.

The following pest can follow the commodity pathway. However, it was not assessed because it was previously determined to pose an unacceptable risk to the PRA area and domestic regulations are in place. This pest is a candidate for risk mitigation.

Pest type	Scientific name	Code of Federal Regulation
Insect	Lepidoptera: Erebidae	*Lymantria dispar* (L.)

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5. Appendix: Pathogens with non-quarantine status

We found evidence that the organisms listed below are associated with *Malus* spp. unrooted cuttings and are present in Belgium (BE), Canada (CAN), France (FR), Germany (GE), Italy (IT), the Netherlands (NE) and the United Kingdom (UK); however, none are of quarantine significance for the United States (ARM, 2024), or as defined by ISPM No. 5 (IPPC, 2023). Although we did not intensively evaluate the evidence, we provide references supporting each pest's potential presence in Belgium, Canada, France, Germany, Italy, the Netherlands and the United Kingdom, presence in United States (if applicable), and association with *Malus* spp. If any of the organisms are **not** present in the United States, we also provided justification for their non-quarantine status. Unless otherwise noted, these organisms are non-actionable at U.S. ports of entry (ARM, 2024).

Organism	**In BE, CAN, FR, GE, IT, NE, or UK**	**In U.S.**	**Host Association**	**Notes**
AGENT OF UNKNOWN ETIOLOGY: Apple chat fruit agent	BE, FR, GE, IT, NE, UK (CABI, 2024a)	(CABI, 2024a)	(CABI, 2024a; Sutton et al., 2014)	N/A
AGENT OF UNKNOWN ETIOLOGY Apple ringspot disease	FR, GE, IT (CABI, 2024a)	(CABI, 2024a)	(CABI, 2024a)	Presumed to be caused by a virus (Smith, 2009). Thought to be a combined infection of *Apple chlorotic leaf spot virus* and *Apple stem pitting virus* (Németh, 1986), both of which occur in the United States (CABI, 2024a; Sutton et al., 2014).
BACTERIUM '*Candidatus* Phytoplasma asteris' 16Sr1-B	BE, CAN, FR, GE, IT, UK (CABI, 2024a)	(CABI, 2024a)	(Jomantiene and Davis, 2005)	The pest is established in the United States and is not under official control.
BACTERIUM *Erwinia amylovora* (Burrill) Winslow et al.	BE, CAN, FR, GE, IT, NE, UK (CABI, 2024a)	(CABI, 2024a)	(Sutton et al., 2014)	N/A
BACTERIUM *Pseudomonas cichorii* (Swingle) Stapp	BE, CAN, FR, GE, IT (CABI, 2024a), UK (EPPO, 2024)	(CABI, 2024a)	(Bradbury, 1986)	The pest is established in the United States and is not under official control.
BACTERIUM *Pseudomonas syringae* pv. *papulans* (Rose) Dhanvantari	CAN (CABI, 2024a); UK (Dhanvantari, 1977)	(CABI, 2024a)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
BACTERIUM *Pseudomonas syringae* pv. *syringae* van Hall, syn. *Pseudomonas syringae* van Hall	BE, CAN, FR, GE (CABI, 2024a), IT (Giovanardi et al., 2018), NE (Bayram, 2017; CABI, 2024a), UK (CABI, 2024a)	(CABI, 2024a)	(Sutton et al., 2014)	N/A
BACTERIUM *Pseudomonas viridiflava* (Burkholder) Dowson	BE, FR, GE (CABI, 2024a), IT (Balestra et al., 2008; Moretti et al., 2011), NE (CABI, 2024a), UK (Billing, 1970; CABI, 2024a; FERA, 2021)	(CABI, 2024a)	(Alimi et al., 2011)	Reported in the continental United States (CABI, 2024a); no records were found for Hawaii, Puerto Rico, or the U.S. Virgin Islands. This pest is not regulated by Hawaii or the U.S. territories for shipments coming from the U.S. mainland.
BACTERIUM *Rhizobium radiobacter* (Beijerinck & van Delden) Young et al., syn. *Agrobacterium tumefaciens* (Smith & Townsend) Conn	CAN, UK (CABI, 2024a)	(CABI, 2024a)	(Bradbury, 1986)	N/A
BACTERIUM *Rhizobium rhizogenes* (Riker et al.) Young et al., syn. *Agrobacterium rhizogenes* (Riker et al.) Conn	CAN, FR (CABI, 2024a), IT (Weller et al., 2004)	(CABI, 2024a)	(Sutton et al., 2014)	N/A
CHROMISTAN *Globisporangium acanthophoron* (Sideris) Uzuhashi, Tojo & Kakish., syn. *Pythium acanthophoron* Sideris	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Lévesque et al., 1998)	The pest is established in the United States and is not under official control.
CHROMISTAN *Globisporangium debaryanum* (R. Hesse) Uzuhashi, Tojo & Kakish., syn. *Pythium debaryanum* R. Hesse	BE (CABI, 2024a), CAN (Farr and Rossman, 2024), FR, GE, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Farr and Rossman, 2024)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
CHROMISTAN *Globisporangium irregulare* (Buisman) Uzuhashi, Tojo & Kakish., syn. *Pythium irregulare* Buisman	BE (CABI, 2024a), CAN (Farr and Rossman, 2024), FR, GE (CABI, 2024a), IT (Gilardi et al., 2018), NE (CABI, 2024a), UK (CABI, 2024a; Humphreys-Jones, 1975)	(Farr and Rossman, 2024)	(Braun, 1991)	The pest is established in the United States and is not under official control.
CHROMISTAN *Globisporangium ultimum* (Trow) Uzuhashi, Tojo & Kakish., syn. *Pythium ultimum* Trow; *Pythium ultimum* var. *ultimum* Trow	CAN (Farr and Rossman, 2024), IT (CABI, 2024a), UK (Hatami et al., 2013)	(Farr and Rossman, 2024)	(Lévesque et al., 1998; Shivas, 1989)	N/A
CHROMISTAN *Phytophthora cactorum* (Lebert & Cohn) J. Schröt.	CAN (Farr and Rossman, 2024); BE, FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
CHROMISTAN *Phytophthora cryptogea* Pethybr. & Laff.	CAN (Farr and Rossman, 2024); BE, FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Erwin and Ribeiro, 1996)	N/A
CHROMISTAN *Phytophthora drechsleri* Tucker	CAN (Farr and Rossman, 2024), IT (Pane et al., 2005), UK (Jones and Baker, 2007)	(Farr and Rossman, 2024)	(Erwin and Ribeiro, 1996; Sutton et al., 2014)	The pest is established in the United States and is not under official control.
CHROMISTAN *Phytophthora megasperma* Drechsler	CAN, FR, UK (Farr and Rossman, 2024); IT (CABI, 2024a)	(Farr and Rossman, 2024)	(Erwin and Ribeiro, 1996; Sutton et al., 2014)	N/A
FUNGUS *Alternaria alternata* (Fr.: Fr.) Keissl., syn. *Alternaria mali* Roberts	CAN, FR, GE, IT, NE (Farr and Rossman, 2024); UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Armillaria mellea* (Vahl: Fr.) P. Kumm.	CAN (Farr and Rossman, 2024), FR, GE (CABI, 2024a), IT (Bragaloni et al., 1997), UK (Drakulic et al., 2017; Guillaumin et al., 1993)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	The pest is established in the United States and is not under official control.
FUNGUS *Athelia rolfsii* (Curzi) C.C. Tu & Kimbr., syn. *Sclerotium rolfsii* Sacc.	BE (CABI, 2024a), CAN (Farr and Rossman, 2024), FR, GE, IT, NE (CABI, 2024a)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Aureobasidium pullulans* (de Bary) G. Arnaud	CAN (Farr and Rossman, 2024), GE (Gostinčar et al., 2019)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Bjerkandera adusta* (Willd.: Fr.) P. Karst., syn. *Polyporus adustus* (Willd.: Fr.) Fr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Bergdahl and French, 1985)	N/A
FUNGUS *Botryosphaeria dothidea* (Moug.: Fr.) Ces. & De Not.	BE , CAN, FR (Farr and Rossman, 2024), GE (Langer and Bußkamp, 2023), IT (De Corato and Trupo, 2007; Lazzizera et al., 2008), UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Botrytis cinerea* Pers.: Fr., syn. *Botryotinia fuckeliana* (de Bary) Whetzel	BE (CABI, 2024a), CAN (Farr and Rossman, 2024), FR, GE, IT (CABI, 2024a), NE (Farr and Rossman, 2024), UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Butlerelfia eustacei* Weresub & Illman, syn. *Corticium centrifugum* (Lév.) Bres.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Cadophora malorum* (Kidd & Beaumont) W. Gams, syn. *Phialophora malorum* (Kidd & Beaumont) McColloch	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.
FUNGUS *Catunica adiposa* (E.J. Butler) C. Mayers & T.C. Harr., syn. *Ceratocystis adiposa* (E.J. Butler) C. Moreau	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Cerrena unicolor* (Bull.: Fr.) Murrill	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Chondrostereum purpureum* (Pers.: Fr.) Pouzar	CAN (Farr and Rossman, 2024), IT (Venturella, 1991), NE (CABI, 2024a), UK (Willoughby et al., 2015)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Cladosporium cladosporioides* (Fresen.) G.A. De Vries	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Grabowski, 2007)	N/A
FUNGUS *Cladosporium herbarum* (Pers.: Fr.) Link	CAN, FR (Farr and Rossman, 2024), GE (Bensch et al., 2012)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Cladosporium macrocarpum* Preuss	CAN, FR (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Coleophoma empetri* (Rostr.) Petr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Colletotrichum acutatum* J.H. Simmonds	CAN (Farr and Rossman, 2024); BE, FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Colletotrichum dematium* (Pers.: Fr.) Grove	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Colletotrichum fioriniae* (Marcelino & Gouli) Pennycook	CAN, IT (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Munir et al., 2016)	N/A
FUNGUS *Colletotrichum fructicola* Prihastuti, L. Cai & K.D. Hyde	CAN, IT (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Munir et al., 2016)	N/A
FUNGUS *Colletotrichum gloeosporioides* (Penz.) Penz. & Sacc., syn. *Glomerella cingulata* (Stoneman) Spauld. & H. Schrenk	CAN (Farr and Rossman, 2024); FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Colletotrichum theobromicola* Delacr., syn. *Colletotrichum fragariae* A.N. Brooks	CAN (CABI, 2024a)	(Farr and Rossman, 2024)	(Munir et al., 2016)	N/A
FUNGUS *Coriolopsis gallica* (Bull.: Fr.) Ryvarden, syn. *Trametes hispida* Bagl.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Dilley and Covey Jr., 1980)	N/A
FUNGUS *Crepidotus fulvotomentosus* Sacc.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Cylindrocarpon didymum* (Harting) Wollenw.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Dugan and Grove, 1994)	The pest is established in the United States and is not under official control.
FUNGUS *Cytospora ceratosperma* (Tode) G.C. Adams & Rossman, syn. *Valsa ceratosperma* (Tode) Maire	CAN (Farr and Rossman, 2024), UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Cytospora chrysosperma* (Pers. : Fr.) Fr., syn. *Valsa sordida* Nitschke	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Cytospora cincta* Sacc., syn. *Leucostoma cinctum* (Fr.: Fr.) Höhn.; *Valsa cincta* (Fr.: Fr.) Fr.	CAN (Farr and Rossman, 2024), IT (Romanazzi et al., 2012), UK (Cannon et al., 1985)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Cytospora leucosperma* (Pers. : Fr.) Fr., syn. *Cytospora ambiens* Sacc.; *Valsa ambiens* (Pers. : Fr.) Fr.	CAN, FR (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Cytospora leucostoma* (Pers.) Sacc., syn. *Leucostoma persoonii* (Nitschke) Höhn.; *Valsa leucostoma* (Pers.: Fr.) Fr.	CAN, FR (Farr and Rossman, 2024), GE (MyCoPortal Database, 2024), IT (Venturella, 1991), UK (Cannon et al., 1985)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Dactylonectria macrodidyma* (Halleen, Schroers & Crous) L. Lombard & Crous, syn. *Cylindrocarpon macrodidymum* Schroers, Halleen & Crous	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Tewoldemedhin et al., 2011b)	The pest is established in the United States and is not under official control.
FUNGUS *Daldinia gelatinosa* Y.M. Ju, J.D. Rogers & F. San Martín	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Stadler et al., 2014)	The pest is established in the United States and is not under official control.
FUNGUS *Daldinia vernicosa* (Schwein.) Ces. & De Not.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Dilley and Covey Jr., 1980)	The pest is established in the United States and is not under official control.
FUNGUS *Dendrothele griseocana* (Bres.) Bourdot & Galzin	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Diaporthe eres* Nitschke	CAN (Farr and Rossman, 2024); FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ali et al., 2020)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Didymella macrostoma* (Mont.) Qian Chen & L. Cai, syns.: *Phoma macrostoma* var. *macrostoma* Mont.; *Phoma pomi* Schulzer & Sacc.	CAN, IT, UK (Farr and Rossman, 2024); GE, NE (USDA Fungal Database, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Didymella pomorum* (Thüm.) Qian Chen & L. Cai, syns.: *Phoma pomorum* Thüm.; *Phoma pomorum* var. *pomorum* Thüm.	CAN, IT, UK (Farr and Rossman, 2024); NE (USDA Fungal Database, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Diplocarpon coronariae* (Ellis & Davis) Wöhner & Rossman, syns.: *Diplocarpon mali* Harada & Sawamura; *Marssonina coronaria* (Ellis & Davis) Davis	CAN (Farr and Rossman, 2024); IT (Oberhänsli et al., 2020); FR, GE (USDA Fungal Database, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Diplocarpon mespili* (Sorauer) B. Sutton, syn. *Fabraea maculata* Atk.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Diplodia mutila* (Fr.: Fr.) Mont., syn. *Botryosphaeria stevensii* Shoemaker	CAN (Farr and Rossman, 2024), GE, IT (Venturella, 1991), UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Sutton et al., 2014; Úrbez-Torres et al., 2016)	N/A
FUNGUS *Diplodia sapinea* (Fr.) Fuckel, syn. *Sphaeropsis sapinea* (Fr.: Fr.) Dyko & B. Sutton	BE (CABI, 2024a), CAN, FR (Farr and Rossman, 2024), GE (CABI, 2024a)	(Farr and Rossman, 2024)	(Inderbitzin et al., 2010)	N/A
FUNGUS *Diplodia seriata* De Not., syn. *Botryosphaeria obtusa* (Schwein.) Shoemaker	CAN (Farr and Rossman, 2024); BE, FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014; Úrbez-Torres et al., 2015)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Epicoccum nigrum* Link, syn. *Phoma epicoccina* Punith., Tulloch & J.G. Leach	CAN (Farr and Rossman, 2024); GE, IT (CABI, 2024a)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Eutypa lata* var. *lata* (Pers.: Fr.) Tul. & C. Tul., syn. *Eutypa lata* (Pers.: Fr.) Tul. & C. Tul.	CAN (Farr and Rossman, 2024), FR, GE, IT, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Havenga et al., 2019)	N/A
FUNGUS *Exidia recisa* Fr.: Fr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Flammulina velutipes* (Curtis: Fr.) Singer	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Fomitopsis pinicola* (Sw.: Fr.) P. Karst.	CAN (Farr and Rossman, 2024), FR, GE, IT (CABI, 2024a), UK (Smith et al., 2001)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Fusarium acuminatum* Ellis & Everh., syn. *Gibberella acuminata* Wollenw.	CAN (Farr and Rossman, 2024), IT (CABI, 2024a; Logrieco et al., 1992), UK (Romero, 1990)	(Farr and Rossman, 2024)	(USDA ARS, 1960)	N/A
FUNGUS *Fusarium avenaceum* (Fr.: Fr.) Sacc., syn. *Gibberella avenacea* R.J. Cook	BE, CAN, FR, GE, IT (CABI, 2024a), UK (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Cheng et al., 2019)	N/A
FUNGUS *Fusarium lateritium* Nees: Fr.	CAN, IT, UK (Farr and Rossman, 2024); BE, FR, GE, NE (USDA Fungal Database, 2024)	(Farr and Rossman, 2024)	(Vitale et al., 2011)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Fusarium oxysporum* Schltdl.: Fr.	CAN (Farr and Rossman, 2024), FR (Edel-Hermann et al., 2012; Skovgaard and Rosendahl, 1998), IT (Amatulli et al., 2010), NE (CABI, 2024a; Farr and Rossman, 2024), UK (Basler, 2016)	(Farr and Rossman, 2024)	(Ginns, 1986)	While it is unspecified which *forma specialis* is present on apple in CA (Ginns, 1986), it is likely the same as what is established and not under official control on apple in the United States (Helton and Dilbeck, 1985; USDA ARS, 1960).
FUNGUS *Fusarium roseum* Link: Fr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Fusarium tricinctum* (Corda) Sacc., syn. *Gibberella tricincta* El-Gholl, McRitchie, Schoult. & Ridings	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Cheng et al., 2019)	The pest is established in the United States and is not under official control.
FUNGUS *Ganoderma applanatum* (Pers.) Pat.	CAN, FR (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Gloeodes pomigena* (Schwein.) Colby	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Gloeophyllum trabeum* (Pers.: Fr.) Murrill	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Gonatobotrys simplex* Corda	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Grandinia quercina* (Fr.: Fr.) Jülich, syn. *Hyphodontia quercina* (Fr.: Fr.) J. Erikss.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Gymnopilus spectabilis* (Fr.: Fr.) A.H. Sm.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Gymnosporangium clavipes* Cooke & Peck	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Gymnosporangium cornutum* Arthur ex F. Kern	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Parmelee, 1971)	N/A
FUNGUS *Gymnosporangium globosum* (Farl.) Farl.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Gymnosporangium juniperi-virginianae* Schwein.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	The pest is established in the United States and is not under official control.
FUNGUS *Gymnosporangium libocedri* (Henn.) F. Kern	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.
FUNGUS *Gymnosporangium nelsonii* Arthur	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	The pest is established in the United States and is not under official control.
FUNGUS *Gymnosporangium nootkatense* Arthur	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Heterobasidion parviporum* Niemelä & Korhonen	CAN (CABI, 2024a)	(CABI, 2024a; Farr and Rossman, 2024)	(Sedlák and Tomšovský, 2014)	The pest is established in the United States and is not under official control.
FUNGUS *Hymenochaete corrugata* (Fr. : Fr.) Lév.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Hypholoma fasciculare* (Huds.: Fr.) P. Kumm., syn. *Nematoloma fasciculare* (Huds.: Fr.) P. Karst.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Dilley and Covey Jr., 1980)	The pest is established in the United States and is not under official control.
FUNGUS *Hypsizygus ulmarius* (Bull.: Fr.) Redhead, syn. *Pleurotus ulmarius* (Bull.: Fr.) P. Kumm.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(USDA ARS, 1960)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Ilyonectria destructans* (Zinssm.) Rossman, L. Lombard & Crous, syn. *Cylindrocarpon destructans* (Zinssm.) Scholten	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Tewoldemedhin et al., 2011b)	N/A
FUNGUS *Ilyonectria liriodendri* (Halleen, Rego & Crous) P. Chaverri & C. Salgado, syn. *Cylindrocarpon liriodendri* J.D. MacDon. & E.E. Butler	CAN (Farr and Rossman, 2024), IT (Carlucci et al., 2017)	(Farr and Rossman, 2024)	(Cabral et al., 2012; Tewoldemedhin et al., 2011b)	The pest is established in the United States and is not under official control.
FUNGUS *Irpex lacteus* (Fr.: Fr.) Fr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Lasiodiplodia theobromae* (Pat.) Griffon & Maubl.	CAN (Farr and Rossman, 2024), FR, GE, IT (CABI, 2024a)	(Farr and Rossman, 2024)	(Delgado-Cerrone et al., 2016)	N/A
FUNGUS *Lenzites betulina* (L.: Fr.) Fr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Monilinia fructicola* (G. Winter) Honey	CAN (Farr and Rossman, 2024); IT (Abate et al., 2018; Martini et al., 2013); FR, GE, NE (CABI, 2024a)	(Farr and Rossman, 2024)	Duchoslavová et al., 2007; (Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Monilinia laxa* (Aderh. & Ruhland) Honey	CAN (Farr and Rossman, 2024); IT, UK (Abate et al., 2018); BE, FR, GE, NE (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Mucor piriformis* A. Fisch.	CAN (Farr and Rossman, 2022)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Mycosphaerella pomi* (Pass.) Lindau, syn. *Cylindrosporium pomi* C. Brooks	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Nectria cinnabarina* (Tode: Fr.) Fr., syn. *Tubercularia vulgaris* Tode: Fr.	CAN, NE (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Neocosmospora solani* (Mart.) L. Lombard & Crous, syn. *Fusarium solani* (Mart.) Sacc.	CAN (Farr and Rossman, 2024), IT (Sandoval-Denis et al., 2018), UK (Pegg and Parry, 1983)	(Farr and Rossman, 2024)	(Ginns, 1986; Helton and Dilbeck, 1985)	N/A
FUNGUS *Neofabraea malicorticis* (Cordley) H. Jacks., syn. *Cryptosporiopsis curvispora* (Peck) Gremmen; *Cryptosporiopsis malicorticis* (Cordley) Nannf.; *Pezicula malicorticis* (Cordley) Nannf.	CAN, IT, UK (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Neofabraea perennans* Kienholz	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Neofusicoccum parvum* (Pennycook & Samuels) Crous, Slippers & A.J.L. Phillips, syn. *Botryosphaeria parva* Pennycook & Samuels	CAN, IT (Farr and Rossman, 2024), FR (USDA Fungal Database, 2024), UK (FERA, 2021)	(Farr and Rossman, 2024)	(Delgado-Cerrone et al., 2016)	N/A
FUNGUS *Neonectria ditissima* (Tul. & C. Tul.) Samuels & Rossman, syn. *Cylindrocarpon heteronema* (Berk. & Broome) Wollenw.; *Nectria galligena* Bres.; *Neonectria galligena* (Bres.) Rossman & Samuels	BE (CABI, 2024a), CAN (Farr and Rossman, 2024), FR, GE, NE (CABI, 2024a), IT (Venturella, 1991), UK (CABI, 2024a)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Nigrospora oryzae* (Berk. & Broome) Petch	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Nigrospora sphaerica* (Sacc.) E.W. Mason	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Ochropsora ariae* (Fuckel) Ramsb.	GE (CABI, 2024a), FR (INPN, 2022), UK (Helfer, 2005)	(CABI, 2024a)	(Helfer, 2005)	This pest is not regulated by Hawaii or Puerto Rico for shipments coming from the U.S. mainland.
FUNGUS *Oxyporus populinus* (Schumach.: Fr.) Donk	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Paraconiothyrium fuckelii* (Sacc.) Verkley & Gruyter, syns.: *Kalmusia coniothyrium* (Fuckel) Huhndorf; *Leptosphaeria coniothyrium* (Fuckel) Sacc.	CAN, FR, IT, UK (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(USDA ARS, 1960)	N/A
FUNGUS *Penicillium aurantiogriseum* Dierckx, syn. *Penicillium martensii* Biourge	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(USDA ARS, 1960)	N/A
FUNGUS *Penicillium expansum* Link	BE (CABI, 2024a), CAN (Farr and Rossman, 2024), FR, IT, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Penicillium griseofulvum* Dierckx, syn. *Penicillium urticae* Bainier	CAN, IT (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Spadaro et al., 2011a)	N/A
FUNGUS *Penicillium solitum* Westling	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Basson et al., 2019)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Pestalotia hartigii* Tubeuf, syn. *Truncatella hartigii* (Tubeuf) Steyaert	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Pezicula alba* E.J. Guthrie, syn. *Neofabraea vagabunda* (Desm.) P.R. Johnst.), *Phlyctema vagabunda* Desm.	IT, UK (CABI, 2024a)	(CABI, 2024a)	(Farr and Rossman, 2024)	N/A
FUNGUS *Pezicula corticola* (C.A. Jorgensen) Nannf., syns.: *Cryptosporiopsis corticola* (Edgerton) Nannf.; *Myxosporium corticola* Edgerton	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Phacidiopycnis pyri* (Fuckel) Weindlm., syn. *Potebniamyces pyri* (Berk. & Broome) Dennis	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.
FUNGUS *Phaeoacremonium iranianum* L. Mostert, Gräfenhan, W. Gams & Crous	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Havenga et al., 2019)	The pest is established in the United States and is not under official control.
FUNGUS *Phaeoacremonium minimum* (Tul. & C. Tul.) D. Gramaje, L. Mostert & Crous, syn. *Phaeoacremonium aleophilum* W. Gams, Crous, M.J. Wingf. & Mugnai	CAN (Farr and Rossman, 2024), GE, IT (CABI, 2024a)	(Farr and Rossman, 2024)	(Havenga et al., 2019)	The pest is established in the United States and is not under official control.
FUNGUS *Phellinopsis conchata* (Pers.: Fr.) Y.C. Dai, syn. *Phellinus conchatus* (Pers.: Fr.) Quél.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Phellinus ferruginosus* (Schrad.: Fr.) Pat., syn. *Poria ferruginosa* (Schrad.: Fr.) P. Karst.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Dilley and Covey Jr., 1980)	The pest is established in the United States and is not under official control.
FUNGUS *Phellinus igniarius* (L.: Fr.) Quél.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Phlebia tremellosus* (Schrad.: Fr.) Nakasone & Burds., syn. *Merulius tremellosus* Schrad.: Fr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Phlyctema vagabunda* Desm., syns.: *Neofabraea alba* (E.J. Guthrie) Verkley; *Phlyctaena vagabunda* Desm.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Pholiota adiposa* (Fr.: Fr.) P. Kumm., syn. *Pholiota aurivella* (Fr.) P. Kumm.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Pholiota squarrosa* (Vahl) P. Kumm	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Phoma herbarum* var. *herbarum* Westend., syn. *Pyrenochaeta mali* M.A. Sm.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Phyllosticta arbutifolia* Ellis & G. Martin, syn. *Phyllosticta solitaria* Ellis & Everh.	CAN (CABI, 2024a; Ginns, 1986)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Pleurotus dryinus* (Pers.: Fr.) P. Kumm.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Podosphaera clandestina* (Wallr. : Fr.) Lév.	BE (CABI, 2024a), CAN, FR (Farr and Rossman, 2024) GE (MyCoPortal Database, 2024), IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Podosphaera leucotricha* (Ellis & Everh.) E.S. Salmon	CAN (Farr and Rossman, 2024); BE, FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Polyporus varius* Fr.: Fr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Postia caesia* (Schrad.: Fr.) P. Karst., syn. *Tyromyces caesius* (Schrad.: Fr.) Murrill	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Psathyrella candolleana* (Fr.) Maire	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Ramularia macrospora* Fresen.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(USDA ARS, 1960)	N/A
FUNGUS *Rhizoctonia solani* J.G. Kühn, syn. *Thanatephorus cucumeris* (A.B. Frank) Donk	BE (CABI, 2024a), CAN (Farr and Rossman, 2024); FR, GE, IT, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(USDA ARS, 1960)	N/A
FUNGUS *Rhizopus stolonifer* (Ehrenb.: Fr.) Vuill.	CAN (Farr and Rossman, 2024), FR, IT (CABI, 2024a)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Sarcodontia setosa* (Pers.) Donk, syn. *Hydnum setosum* Pers.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Schizophyllum commune* Fr.: Fr.	CAN, FR (Farr and Rossman, 2024), IT (Venturella, 1991), UK (Holden, 2021)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Schizothyrium pomi* (Mont.) Arx, syn. *Leptothyrium pomi* (Mont.) Sacc.	CAN, FR (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Sclerotinia sclerotiorum* (Lib.) de Bary	CAN (Farr and Rossman, 2024); BE, FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Scytinostroma galactinum* (Fr.) Donk, syn. *Corticium galactinum* (Fr.) Burt	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.
FUNGUS *Sphaeropsis malorum* Berk.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Sphaeropsis pyriputrescens* C.L. Xiao & J.D. Rogers	CAN (Sholberg et al., 2009)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Sporocadus lichenicola* Corda, syns.: *Clethridium corticola* (Fuckel) Shoemaker & E. Müll.; *Discostroma corticola* (Fuckel) I. Brockmann; *Seimatosporium lichenicola* (Corda) Shoemaker & E. Müll.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Stemphylium vesicarium* (Wallr.) E.G. Simmons, syn. *Pleospora herbarum* (Pers.: Fr.) Rabenh.	CAN (Farr and Rossman, 2024); BE, FR, GE, IT, NE, UK (CABI, 2024a)	(Farr and Rossman, 2024)	(Ginns, 1986; Sutton et al., 2014)	N/A
FUNGUS *Stereum rugosum* Pers.: Fr., syn. *Haematostereum rugosum* (Pers.: Fr.) Pouzar	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Stigmina pallida* (Ellis & Everh.) M.B. Ellis	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Thelonectria lucida* (Höhn.) P. Chaverri & C. Salgado, syn. *Cylindrocarpon lucidum* Booth	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Braun, 1991)	The pest is established in the United States and is not under official control.
FUNGUS *Trametes hirsuta* (Wulfen: Fr.) Quél., syn. *Coriolus hirsutus* (Wulfen: Fr.) Quél.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Trametes versicolor* (L.: Fr.) Pilát, syn. *Coriolus versicolor* (L.: Fr.) Quél.	CAN, GE (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Trichoderma deliquescens* (Sopp) Jaklitsch, syn. *Gliocladium viride* Matr.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014; USDA ARS, 1960)	N/A
FUNGUS *Trichoderma harzianum* Rifai	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Sutton et al., 2014)	N/A
FUNGUS *Trichoderma koningii* Oudem.	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	N/A
FUNGUS *Trichothecium roseum* (Pers.: Fr.) Link	CAN (Farr and Rossman, 2024), IT (Venturella, 1991), UK (Eschen et al., 2010)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Truncatella angustata* (Pers.) S. Hughes	CAN, IT, UK (Farr and Rossman, 2024); FR, NE (CABI, 2024a)	(Farr and Rossman, 2024)	(Havenga et al., 2019)	N/A
FUNGUS *Valdensia heterodoxa* Peyronel, syn. *Valdensinia heterodoxa* Peyronel	CAN (Farr and Rossman, 2024)	(Norvell and Redhead, 1994)	(Ginns, 1986)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
FUNGUS *Venturia inaequalis* (Cooke) G. Winter, syns.: *Coniosporium mali* Dearn. & W.R. Foster; *Fusicladium pomi* (Fr.: Fr.) Lind; *Spilocaea pomi* Fr.: Fr.	CAN, IT, UK (Farr and Rossman, 2024), BE, FR, GE, NE (CABI, 2024a)	(Farr and Rossman, 2024)	Ginns, 1986; Sutton et al., 2014	N/A
FUNGUS *Venturia pyrina* Aderh., syn. *Fusicladium pyrorum* (Lib.) Fuckel	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Schubert et al., 2003)	N/A
FUNGUS *Verticillium albo-atrum* Reinke & Berthold	BE (CABI, 2024a), CAN (Farr and Rossman, 2024), FR, GE (CABI, 2024a)	(Farr and Rossman, 2024)	(Dykstra, n.d.)	N/A
FUNGUS *Volutella citrinella* (Cooke & Massee) Seifert, syn. *Stilbella flavescens* Estey	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
FUNGUS *Xylobolus subpileatus* (Berk. & M.A. Curtis) Boidin	CAN (Farr and Rossman, 2024)	(Farr and Rossman, 2024)	(Ginns, 1986)	The pest is established in the United States and is not under official control.
NEMATODE *Helicotylenchus dihystera* (Cobb) Sher	CAN, IT, UK (CABI, 2024a)	(CABI, 2024a)	(Zafar et al., 2022)	N/A
NEMATODE *Helicotylenchus pseudorobustus* (Steiner) Golden	CAN, IT, NE, UK (CABI, 2024a)	(CABI, 2024a)	(Zafar et al., 2022)	N/A
NEMATODE *Longidorus elongatus* (de Man) Micoletzky	CAN (CABI, 2024a), IT, UK (Xu and Zhao, 2019)	(CABI, 2024a)	(Širca and Urek, 2009)	N/A
NEMATODE *Meloidogyne hapla* Chitwood	CAN, IT, UK (CABI, 2024a)	(CABI, 2024a)	(Sutton et al., 2014)	N/A
NEMATODE *Meloidogyne incognita* (Kofoid & White) Chitwood	CAN, IT (CABI, 2024a), UK (Tesařová et al., 2003)	(CABI, 2024a)	(Sutton et al., 2014; Zafar et al., 2022)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
NEMATODE *Pratylenchus crenatus* Loof	CAN (Ferris, 2019; Yu, 2008), IT (Castillo et al., 2010; Inserra et al., 1979), UK (Corbett, 1970a; Ibrahim et al., 1995)	(Ferris, 2019)	(Sutton et al., 2014; Yu, 2008)	N/A
NEMATODE *Pratylenchus neglectus* (Rensch) Filipjev & S. Stekhoven	CAN, GE (CABI, 2024a; Yu, 2008); IT (Di Vito et al., 2000), NE (Hoestra, 1968), UK (Boag, 1983; Ibrahim et al., 1995)	(CABI, 2024a)	(Sutton et al., 2014; Yu, 2008)	N/A
NEMATODE *Pratylenchus penetrans* (Cobb) Filipjev & Schuurmans Stekhoven	BE, CAN, FR, GE, IT, NE, UK (CABI, 2024a; Yu, 2008)	(CABI, 2024a)	(Sutton et al., 2014; Yu, 2008; Zafar et al., 2022)	N/A
NEMATODE *Paratylenchus projectus* Jenkins	NE (found on *Malus* from) (USDA-PEQ, 2019)	(Ferris, 2022; Jenkins, 1956)	(USDA-PEQ, 2019)	N/A
NEMATODE *Pratylenchus scribneri* Steiner	IT (CABI, 2024a)	(CABI, 2024a)	(Goodey et al., 1965; Islam et al., 1996)	N/A
NEMATODE *Pratylenchus thornei* Sher & Allen	CAN (CABI, 2024a; Yu, 2008), IT (CABI, 2024a), NE (Hoestra, 1968), UK (Corbett, 1970b)	(CABI, 2024a)	(Söğüt and Devran, 2011)	N/A
NEMATODE *Pratylenchus vulnus* Allen & Jensen	CAN, NE, UK (CABI, 2024a), IT (Castillo et al., 2010)	(CABI, 2024a)	(Chihani-Hammas et al., 2018; Sutton et al., 2014)	N/A
NEMATODE *Trichodorus primitivus* (de Man)	CAN (CABI, 2024a; Pedram et al., 2010), IT, UK (CABI, 2024a)	(CABI, 2024a)	(Nickle, 1991)	N/A

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
NEMATODE *Trichodorus viruliferus* Hooper	BE, FR, GE (CABI/EPPO, 2005), IT (CABI/EPPO, 2005; Roca and Lamberti, 1984), NE (CABI/EPPO, 2005), UK (Cooke, 1984)	(Weingartner and Shumaker, 1990)	(Pitcher and McNamara, 1970; Pitcher and Flegg, 1965)	The pest is established in the United States and is not under official control.
NEMATODE *Xiphinema americanum* Cobb	CAN, UK (CABI, 2024a)	(CABI, 2024a)	(Vrain, 1979)	N/A
NEMATODE *Xiphinema diversicaudatum* (Micoletzky) Thorne	IT, NE, UK (CABI, 2024a)	(CABI, 2024a)	(CABI, 2024a)	N/A
NEMATODE *Xiphinema index* Thorne & Allen	FR, GE, IT (CABI, 2024a)	(CABI, 2024a)	(CABI, 2024a; Sutton et al., 2014)	N/A
NEMATODE *Xiphinema rivesi* Dalmasso	CAN, IT (CABI, 2024a)	(CABI, 2024a)	(Wojtowicz et al., 1982)	N/A
VIROID *Apscaviroid cicatricimali*, syn. *Apscaviroid Apple scar skin viroid*	FR, restricted distribution (CABI, 2024a; Desvignes et al., 1998), IT (CABI, 2024a; Kyriakopoulou et al., 2001)	(Hadidi et al., 1991)	(Sutton et al., 2014)	Non-quarantine pest for the continental United States, Hawaii, and Puerto Rico (ARM, 2024)
VIROID *Hostuviroid impedihumuli*, syn. *Hostuviroid Hop stunt viroid*	CAN, FR, GE, IT (CABI, 2024a)	(CABI, 2024a; Eastwell and Nelson, 2007; Kunta et al., 2007; Osman et al., 2012)	(Kaponi et al., 2010)	The pest is established in the United States and is not under official control.
VIRUS *Capillovirus mali*, syn. *Capillovirus Apple stem grooving virus*	BE, CAN, FR, GE, NE, IT, UK (CABI, 2024a)	(CABI, 2024a)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.
VIRUS *Cheravirus avii*, syn. *Cheravirus Cherry rasp leaf virus, Nepovirus Cherry rasp leaf virus*	CAN (CABI, 2024a)	(CABI, 2024a)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
VIRUS *Cucumovirus CMV*, syn. *Cucumovirus Cucumber mosaic virus*	BE, CAN, FR, NE, UK (CABI, 2024a), IT (Davino et al., 2012)	(CABI, 2024a)	(Hu et al., 2016)	N/A
VIRUS *Dianthovirus dianthi*, syn. *Dianthovirus Carnation ringspot virus*	CAN, FR, GE, NE (CABI, 2024a), IT (Faccioli and Marani, 1967), UK (Hollings and Stone, 1965)	(CABI, 2024a)	(Kleinhempel et al., 1979)	The pest is established in the United States and is not under official control.
VIRUS *Foveavirus mali*, syn. *Foveavirus Apple stem pitting virus*	BE, CAN, FR, GE, NE, UK (CABI, 2024a)	(CABI, 2024a)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.
VIRUS *Idaeovirus rubi*, syn. *Idaeovirus Raspberry bushy dwarf virus*	CAN (CABI, 2024a)	(CABI, 2024a)	(Richardson, 1990)	The pest is established in the United States and is not under official control.
VIRUS *Ilarvirus ApMV*, syn. *Ilarvirus Apple mosaic virus*	BE, CAN, FR, GE, IT, NE, UK (CABI, 2024a)	(CABI, 2024a)	(Sutton et al., 2014)	N/A
VIRUS *Ilarvirus PNRSV*, syn. *Ilarvirus Prunus necrotic ringspot virus*	BE, CAN, FR, GE, NE, IT, UK (CABI, 2024a)	(CABI, 2024a; Pethybridge et al., 2002; USDA APHIS, 2003; Uyemoto et al., 1989)	(Celik and Ertunc, 2019; Chandel et al., 2008)	The pest is established in the United States and is not under official control.
VIRUS *Nepovirus avii*, syn. *Nepovirus Cherry leaf roll virus, Nepovirus Cherry leafroll virus*	BE, CAN, FR, GE, NE, IT (CABI, 2024a)	(CABI, 2024a; Eastwell and Howell, 2010; USDA APHIS, 2003)	(Woo, 2012)	The pest is established in the United States and is not under official control.
VIRUS *Nepovirus lycopersici*, syn. *Nepovirus Tomato ringspot virus*	CAN, FR, IT, NE, UK (CABI, 2024a), GE [under eradication] (CABI, 2024a; Health, 2019)	(CABI, 2024a; Caprile et al., 2021)	(Sutton et al., 2014)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
VIRUS *Nepovirus nicotianae*, syn. *Nepovirus Tobacco ringspot virus*	CAN (CABI, 2024a)	(CABI, 2024a; French, 1989; Lockhart, 2005)	(Lana et al., 1983)	The pest is established in the United States and is not under official control.
VIRUS *Pelamoviroid malleusmali*, syn. *Pelamoviroid Apple hammerhead viroid*	CAN (Messmer et al., 2017)	(Szostek et al., 2018)	(Messmer et al., 2017; Szostek et al., 2018)	N/A
VIRUS *Potexvirus flavitrifolii*, syn. *Potexvirus Clover yellow mosaic virus*	CAN (CABI, 2024a)	(CABI, 2024a)	(Welsh et al., 1973)	The pest is established in the United States and is not under official control.
VIRUS Tobacco necrosis virus	BE, CAN, FR, GE, NE, IT, UK (CABI, 2024a)	(CABI, 2024a; Uyemoto and Gilmer, 1972)	(Uyemoto and Gilmer, 1972)	Strains of this virus have been placed into *Alphanecrovirus nicotianae* syn. *Alphanecrovirus Tobacco necrosis virus A* and *Betanecrovirus nicotianae* syn. *Betanecrovirus Tobacco necrosis virus D*. It is unclear which species infects apple; however, the report on apple is from New York (Uyemoto and Gilmer, 1972), suggesting the causal virus is established in the United States and is not under official control.
VIRUS *Tobamovirus tabaci*, syn. *Tobamovirus Tobacco mosaic virus*	CAN, FR, GE (CABI, 2024a), IT (Conti and Masenga, 1977), UK (MacNell, 1963)	(CABI, 2024a)	(Allen, 1969; Lemoine and Morand, 1993; Richardson, 1990)	N/A
VIRUS *Tombusvirus lycopersici*, syn. *Tombusvirus Tomato bushy stunt virus*	CAN (Allen, 1969; CABI, 2024a), GE (CABI, 2024a), IT (Nawaz et al., 2014), UK (EPPO, 2024)	(CABI, 2024a; Gerik et al., 1990; UGA, 2022)	(Allen, 1969; Kegler and Kegler, 1980; Richardson, 1990)	The pest is established in the United States and is not under official control.

Organism	In BE, CAN, FR, GE, IT, NE, or UK	In U.S.	Host Association	Notes
VIRUS *Trichovirus mali*, syn. *Trichovirus Apple chlorotic leafspot virus*	BE, CAN, FR, GE, NE, IT (CABI, 2024a)	(CABI, 2024a; Hadidi et al., 2011)	(Németh, 1986; Sutton et al., 2014)	The pest is established in the United States and is not under official control.