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**Global pest list of *Citrus* spp.
pathogens and an examination
of evidence for seed
transmission**

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Executive Summary

This document was prepared by the Plant Epidemiology and Risk Analysis Laboratory (PERAL) of the Center for Plant Health Science and Technology (CPHST), USDA Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ) to identify citrus pathogens that occur anywhere in the world that may be seed transmitted.

This is the first comprehensive pest list of all quarantine pathogens associated with *Citrus* spp. present in commercial citrus producing countries around the world. In total, we identified 105 actionable pathogens associated with citrus somewhere in the world. Specifically, we identified 93 fungi, 9 bacteria and phytoplasmas, and 3 viruses and virus-like agents quarantine pests. Upon close examination, there is no evidence that any of these pathogens are able to cause disease through seed transmission. Based on the current evidence, citrus seed does not appear to be a pathway of introduction for any quarantine pathogens into the United States.

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1. Introduction

This document was prepared by the Plant Epidemiology and Risk Analysis Laboratory (PERAL) of the Center for Plant Health Science and Technology (CPHST), USDA Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ) to identify citrus pathogens occur anywhere in the world and determine if they are associated with the seed and are seed transmitted.

There are several regulations that indirectly prohibit the movement of citrus seeds. Title 7 of the Code of Federal Regulations 319, Part 56 (7 CFR § 319, 2014) provides regulatory authority for the importation of fruits and vegetables from foreign sources into the United States, while Title 7 of the Code of Federal Regulations 319, Part 37 (7 CFR § 319.37, 2015) provides regulatory authority for the importation of plants and propagative material from foreign sources. Quarantine 19 (7 CFR § 319.19, 2014, *Citrus Canker and Other Citrus Diseases*) prohibits the importation of citrus plants or plant parts except fruit into the United States. Quarantine 28 (7 CFR § 319.28, 2014, *Citrus Fruit*) prohibits the importation of citrus fruit and plants from most countries where certain diseases occur. Citrus fruit and plant parts are also subject to regulations that govern domestic interstate movement of regulated plant material from quarantined areas for Asian citrus psyllid, citrus greening, citrus canker, citrus black spot and sweet orange scab (7 CFR § 319.19, 2015; 7 CFR § 301.76, 2015; APHIS, 2013; APHIS, 2014).

In 2008, USDA APHIS issued the Federal Import Quarantine Order for Huanglongbing (HLB) Disease of Citrus and Citrus Variegated Chlorosis (CVC) (DA-2008-06) to restrict the importation of citrus seed to prevent the spread of the citrus diseases, HLB and CVC. This Federal Order prohibits the importation of citrus seeds from known host genera in the family Rutaceae due to the possibility that seeds for planting may be a pathway for the spread of HLB and CVC (APHIS, 2009). Advances in scientific research now indicate that neither disease is seed transmitted.

A comprehensive citrus pathogen list is needed at this time to identify quarantine pathogens that may follow the seed pathway and be able to cause disease through seed transmission.

2. Pathogens associated with citrus

The pest list is a compilation of all pathogens associated with *Citrus* spp. present in commercial citrus producing countries around the world (Table 1). We identified the generally affected plant part or parts, whether the quarantine pathogens are associated with the seed and if they are seed transmitted. We developed this pest list based on scientific literature and USDA port-of-entry pest interception data. Pests in shaded rows are quarantine pests that we consider reasonably likely to be seed transmitted (i.e. seed transmission resulting in disease development in new seedlings).

Please note that in the pest list (Table 1), we do not include non-quarantine pathogens. We examined each pathogen for its presence or absence in the United States, and the quarantine status of the pests with respect to the United States. Even if non-quarantine pests are able to follow the pathway (i.e. seed transmission), phytosanitary measures against these pests would not be justified because they already occur in the United States. Therefore, we do not provide information on plant part association and whether the pest is likely to be seed transmitted for these pathogens. For the list of non-quarantine pathogens previously described above, refer to Appendix B.

2.1 Pests considered but not included on the pest list

We considered the following pathogens but did not include them in Table 1 because they are classified as saprophytes. *Aureobasidium pullulans* (de Bary) G. Arnaud [= *Pellularia pollulans*], *Blakeslea trispora* Thaxt, *Chaetomium orientum* Saha, *Chaetothyrium spinigerum* (Höhn.) W. Yamam., *Ciferriusia psychotriae* Bat., *Diplodia indica* Diedicke, *Haplosporella cosmopolites* Muthappa, *Haplosporella hesperidica* Speg., *Hypocrea lixii* (Pat.), *Hypocrella aleyrodalis* (Webber), *Hysterium citricola* Tilak & R. Rao., *Illosporium citri* Muthappa, *Laschia delicata* Fr., *Phoma tropica* R. Schneid. & Boerema, *Pseudomonas fluorescens* (Trevisan) Migula, *Spegazzinia tessarthra* (Berk. & M.A. Curtis) Sacc. Syn: *Spegazzinia ornata* Sacc.,

We considered the following pathogens but did not include them in Table 1 due to their categorizations as wood decaying fungi. *Auricularia fuscusuccinea* (Mont.), *Corioloopsis polyzona* (Pers.) Ryvarden Syn: *Corioloopsis occidentalis* (Klotzsch) Murrill, *Coriolus fibula* (Fr.) Quél. Syn: *Polystictus fibula* var. *fibula* Bres., *Corticium confluens* (Fr.), *Daldinia eschscholzii* (Ehrenb.: Fr.) Rehm, *Hydnophlebia chrysorhiza* (Torr.) Parmasto, Eesti NSV Tead. Akad. Toim, *Kretzschmaria deusta* (Hoffm.) P.M.D. Martin Syn: *Ustulina deusta* (Hoffm.: Fr.) Lind., *Pycnoporus coccineus* (Fr.) Bondartsev & Singer, *Sporoschisma mirabile* Berk. & Broome

The following pathogens were not included in the pest list due to weak host-pathogen associations. *Calosphaeria fici* S.B. Kale, *Chromocreopsis cubispora* (Ellis & Holw.), *Colletotrichum cordylinicola* Phoulivong, L. Cai & K.D. Hyde, *Melanographium citri* (Gonz. Frag. & Cif.) M.B. Ellis, *Septobasidium bogoriense* Potouillard, *Trichoderma harzianum* Rifai.

Acrotheca caulium (Sacc.) Sacc, Syn: *Acrothecium caulium* Sacc. Reported on *C. limonia* (Mendes et al., 1998). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Atichia lopesii* Bat.** Syn: *Seurattia millardetii* (Racib.) Meeker, was reported on leaves of *C. limetta* in 1957 (Index Fungorum, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association

***Catinula citri* (Henn.) Bat. & J.L. Bezerra;** Syn: \equiv *Patellina citri* Henn., was reported on *C. aurantium* (Mendes and Urben, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Colletotrichum boninense* Moriwaki, Toy. Sato & Tsukib.** is present in Brazil (Tozze Júnior et al., 2010; Tozze Júnior and Massola Júnior, 2009). Huang et al. (2013) reported it in *C. boninense* complex isolates from citrus that was later recategorized as *Colletotrichum citricola*. *Colletotrichum citricola* has not been reported in Brazil nor the United States.

***Didymella aurantiiphila* Speg.** was reported by Wellman (1977) and no additional information was provided by the author on the biology of this pathogen. There is one report from 1920 citrus branches in Paraguay (Pettrak, 1920 citing Spegazzini, 1920). No additional records were reported.

***Diaporthe arctii* (Lasch) Nitschke,** has been intercepted once (PestID, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Elsinoe annonae* Bitanc. & Jenk,** has been intercepted once (PestID, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Phyllosticta hypoglossi* (Mont.) Allesch,** has been intercepted once (PestID, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Sphaceloma punicae* Bitanc. & Jenk.** has been intercepted once (PestID, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Leptosphaeria bondari* Bitanc. & Jenk.** is reported by Wellman (1977) infecting citrus in Brazil. Wellman (1977) did not provide additional information about the biology of this pathogen. *Leptosphaeria bondari* is considered a secondary parasite exaggerating injury from other infections (Wellman, 1977b). Bondar (1929) cited by Bittancourt in 1935 studied monospore cultures from the ascospore and conidial stages of *L. bondari*, of which the former yielded a *Hendersonia* (possibly the septate conidial form while only *Coniothyrium* was derived from the latter. Inoculations with both cultures gave inconclusive results. Bittancourt's opinion indicates that areolate spot, clearly diagnosed by Bondar (1929) is probably caused by a hitherto undescribed species of *Leptosphaeria* indigenous to South America, and as yet unknown

elsewhere (Bitancourt and Jenkins, 1935a). Therefore, this pest was not included in the pest list due to the uncertainty in the accurate pest identification.

***Nectria cancri f. aurantii* Av. -Sac.** is reported by Wellman (1977) causing twig canker of citrus in Brazil. Wellman (1977) does not provide additional information on this pathogen. *Nectria cancri f. aurantii* was first reported by Saccá in 1941 (Mycobank, 2014); this is the only record of this pest affecting citrus, no additional references have been found.

***Paranthostomella citri* Bat. & J.L. Bezerra.** Reported on stem of *C. sinensis* (Mendes and Urben, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Pellicularia koleroga* (Cooke)** Syn: *Corticium koleroga* (Cooke) Höhn. Syn: *Koleroga noxia* Donk. *P. koleroga* is not considered a pest of citrus. It affects coffee (Burt, 1918).

***Phaeosaccardinula guajavae* Bat. & A. F. Vital.** Reported on stem of *C. aurantium* (Mendes and Urben, 2013). This is the only record of the presence of this pathogen on citrus. No additional records have been found. We consider that this is not enough evidence of host-pathogen association.

***Phoma limonii* Thuem.** is reported by Wellman (1977b) causing leaf and green stem disease on citrus in BR and the U. S., [FL]. Wellman (1977) did not provide additional information about the biology of this pathogen. This is the only record of this pest infecting citrus since its description by Traverso (1905), no additional records are reported.

***Phoma puttemansii* Benbenatar** is reported by Wellman (1977) causing leaf and green stem disease Brazil and the United States, [FL]. Wellman (1977) did not provide additional information about the biology of this pathogen. *Phoma puttemansii* was reported for the first time by Benatar in 1936, since that time have not found additional records infecting citrus in Brazil (Benatar, 1937)

***Phyllosticta disciformis* Penz f. Brasiliensis Speg** is reported infecting citrus by Wellman (1977). Wellman (1977) did not provide additional information on the biology of this pathogen. Petch (1922) reported *P. disciformis* infecting *Citrus decumana* in Hakala, Ceylan in 1917. This is the only record of this pest infecting citrus.

Phytophthora boehmeriae has been reported in Brazil (CABI, 2013a; dos Santos and Luz, 2006; dos Santos et al., 2006). Frezzi (1941) reported *P. boehmeriae* (Sawada) as a pathogen causing brown rot on fruit of citrus in Argentina. Artificial inoculations on sweet oranges fruit yielded infections, but no infections occurred when the bases of the stems of sweet oranges, lemons, pomelos, Persian limes, and Lima Rangpur plants were inoculated (Frezzi, 1941). That is the only record of *P. boehmeriae* infecting orange fruits, and no subsequent records in the literature

further link this pathogen to citrus, either in the field or in trade. Moreover, the author indicates that the only plant part affected by this pathogen is the fruit. Because citrus is a widely cultivated plant and *P. boehmeriae* has a large global distribution and occurs in citrus areas (Farr and Rossman, 2013), any impacts or occurrence of *P. boehmeriae* in citrus would likely have been reported if it were a significant host. Thus, we found the single record of *P. boehmeriae* on citrus was insufficient evidence for a host association. If additional evidence of natural occurrence of this pathogen infecting citrus is reported, we may reevaluate the pest status of this fungus.

***Phytophthora humicola* (W. H. Ko & P. J. Ann)** has been isolated from citrus groves, but it does not infect citrus fruit (USDA-ARS, 2006)

Pseudomonas syringae* pv. *garcae . Citrus was artificially inoculated (Bradbury, 1986). Later work indicate that only coffee is susceptible to this bacteria species (Bradbury, 1986).

***Ramularia serratula* (Sacc.) Maia.** was reported on leaves of *C. aurantium* in 1960 by Maia (as cited in Mendes and Urben, 2013). This is the only record of the presence of this pathogen on citrus. This is not enough evidence of host-pathogen association.

***Septoria aurentiicola* Speg. Syn: = *Rhabdospora auantiicola* (Speg) Kuntze** is reported infecting citrus by Wellman (1977). Wellman (1977) did not provide additional information on the biology of this pathogen. Saccardo (1892) described *Septoria aurantiicola* infecting leaves of *Citrus aurantii* in Brazil. This is the only record of this reported on this commodity and the country.

***Setella citricola* Bat. & Peres.** Reported on leaves of *C. sinensis* in 1957 (Index of fungi, 1961-1970b). This is the only record of the presence of this pathogen on citrus. No additional records have been found. This is not enough evidence of host-pathogen association.

***Sirothyrium citri* Bitanc** is reported infecting citrus by Wellman (1977). Wellman (1977) did not provide additional information on the biology of this pathogen. Petrak (1944) list *S. citri* infecting leaves of *Citrus trifoliata* in Brazil in 1934. This is the only record of this pest infecting citrus.

***Solenoplea ceracea* Viégas.** Reported on leaves of *C. sinensis* in 1945 (Index of fungi, 1961-1970a). This is the only record of the presence of this pathogen on citrus. No additional records have been found. This is not enough evidence of host-pathogen association.

2.1.2 Organisms with non-actionable regulatory status

We found evidence of the organisms listed in Appendix B being associated with *Citrus* spp. in citrus producing countries; however, because these organisms have non-actionable regulatory status for the continental United States, we did not include them in Table 1 of this assessment.

2.2 Pest list

In Table 1, we list the actionable pests associated with citrus that occur in primary citrus producing countries.

Table 1. Actionable pathogen pests reported on *Citrus* spp. (in any country).

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
FUNGI						
<i>Alternaria interna</i> (McAlpine) Joly [Ascomycetes, Pleosporales]	AU (Simmons, 2007)	(Simmons, 2007)	Fruit (Simmons, 2007)	No evidence	NA	
<i>Alternaria limicola</i> E.G. Simmons & M.E. Palm [Ascomycetes: Pleosporales]	MX (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves, Fruit (Farr and Rossman, 2014)	No evidence	NA	
<i>Alternaria undulata</i> Roberts [Ascomycetes: Pleosporales]	AU (Farr and Rossman, 2014; Roberts, 2008)	(Farr and Rossman, 2014)	Fruit (CABI, 2012; Roberts, 2008)	No evidence	NA	
<i>Ascochyta citri</i> Penz. [Ascomycetes: Pleosporales]	BR, GR, IN, IR, IT, JP, MM, PG, VE (Farr and Rossman, 2014) CN (CASI, 1994)	(CASI, 1994)	Leaves (CASI, 1994)	No evidence	NA	
<i>Anthina brunnea</i> Sawada [Pezizomicoina: Incerta sedis]	CN, TW (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Roots (Petrak, 1930)	No evidence	NA	
<i>Anthina citri</i> Sawada [Pezizomicotina: Incerta sedis]	CN, TW (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Roots (Petrak, 1930)	No evidence	NA	
<i>Armillaria luteobubalina</i> Watling & Kile [Basidiomycetes: Agaricales]	AR (Coetzee et al., 2003), AU (Kile and Watling, 1988) CL (Farr and Rossman, 2014)	(Donovan, 2007)	Roots (Farr and Rossman, 2014)	No evidence	NA	
<i>Ascochyta citri</i> McAlpine [Ascomycetes: Pleosporales]	BR (Mendes and Urben, 2013) GR, IN, IR, IT, JP, MM,	(Mendes and Urben, 2013)	Leaves (Thaung, 2008)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
	PG, VE (Farr and Rossman, 2014)					
<i>Ascochyta corticola</i> McAlpine [Ascomycetes: Pleosporales]	AU, NZ (Farr and Rossman, 2014)	(CABI, 2012)	Stem (CABI, 2012)	No evidence	NA	
<i>Ascochyta pisi</i> (Lib.) [Ascomycetes, Incertae sedis]	AR, AT, AU, BG, BO, BR, CA, CL, CN, CR, CY, DO, ET, GE, GR, HT, IN, IT, JP, KE, KR, LY, MW, MX, NL, NP, PK, PL, PT, RW, SE, UA, VE, ZA, ZM, ZW (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves, Pod, Stem (Farr and Rossman, 2014)	No evidence	NA	
<i>Barriopsis iraniana</i> Abdollahz., Zare & A.J.L. Phillips [Dothideomycetes, Botryosphaeriales]	IR (Phillips et al., 2013)	(Phillips et al., 2013)	Stems (Phillips et al., 2013)	No evidence	NA	
<i>Calonectria reteaudii</i> (Bugnic.) C. Booth [Ascomycetes, Hypocreales]	AU, BR, HK, ID, IN, LA, LK, MG, MU, MY, PG, SB, TH, VN (Kang et al., 2001)	(Kang et al., 2001)	Leaves, Roots, Stem (Kang et al., 2001)	No evidence	NA	
<i>Ceratocystis radicicola</i> (Bliss) C. Moreau [Ascomycetes, Microascales]	AU, BE, BM, BR, ES, GB, GQ, GN, IN, KE, PE, PT, TZ, ZA (EPPO, 2014)	(Farr and Rossman, 2014)	Root, Stem (Farr and Rossman, 2014)	No evidence	NA	
<i>Chaetodiplodia citri</i> V. Tiwari & A.N. Rai [Ascomycetes: Incertae sedis]	IN (Maheswari et al., 2012)	(Maheswari et al., 2012)	Leaves (Farr and Rossman, 2014)	No evidence	NA	
<i>Cladosporium sclerotiophilum</i> Sawada [Dothideomycetes :]	TW (Farr and Rossman, 2014)	(Petraik, 1931)	Leaves (Petraik, 1931)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution ¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed? ²	Evidence of seed transmission? ³	Remarks
Capnodiales]						
<i>Colletotrichum boninense</i> Moriwaki, Toy. Sato & Tsukib. [Ascomycetes, Phyllachorales]	AU, BR, CH, CO, JP, KR, US, ZA, ZW (Farr and Rossman, 2014)	(Peng et al., 2012)	Leaves (Peng et al., 2012) Fruit (Farr and Rossman, 2014)	No evidence	NA	
<i>Colletotrichum citri</i> F. Huang, L. Cai, K.D. Hyde & H. Y. Li [Ascomycetes, Phyllachorales]	CN (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Peng et al., 2012) Stem (Farr and Rossman, 2014)	No evidence	NA	
<i>Colletotrichum citricola</i> Y.L. Yang, Z.Y. Liu, K.D. Hyde & L. Cai [Ascomycetes, Phyllachorales]	CN (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Farr and Rossman, 2014)	No evidence	NA	
<i>Colletotrichum foliicola</i> (Nishida) Sawada [Ascomycetes, Pezizomycotina]	CN, TW (Farr and Rossman, 2014)	(CASI, 1994)	Leaves (CASI, 1994)	No evidence	NA	
<i>Coniothyrium fusco-atrum</i> Penz. & Sacc. [Ascomycetes, Pleosporales] = <i>Coniothyrium cervinum</i> McAlpine [Ascomycetes, Pleosporales]	AU (Biosecurity Australia, 2006) IN (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Nakhutsrishvili, 1986), Branches (Penzig, 1882)	No evidence	NA	
<i>Coniothyrium paulense</i> Henn. [Ascomycetes, Pleosporales]	CN (CASI, 1994; Farr and Rossman, 2014)	(CASI, 1994)	Leaves (CASI, 1994)	No evidence	NA	
<i>Corynespora citricola</i> M.B. Ellis [Ascomycetes, Pleosporales]	AU, MX, JP (Farr and Rossman, 2014)	(Ellis, 1971)	Leaves (Ellis, 1971)	No evidence	NA	
<i>Cryptosporiopsis citri</i> P.R. Johnst. & Full.	AU, (Ray et al., 2008) TO, VU, WS	(Johnston and Fullerton,	Leaves (Ray et al., 2008)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
[Pezizomycotina:Helothiales]	(Johnston and Fullerton, 1988)	1988)				
<i>Cytospora citri</i> Magnaghi [Sordariomycetes : Diaporthales]	IN (Rao, 1969) GR, IN, TZ (Farr and Rossman, 2014)	(Rao, 1969)	Leaves (Rao, 1969)	No evidence	NA	
<i>Diaporthe citriasiana</i> Huang et al. [Ascomycetes, Diaporthales]	CN (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Stem (Farr and Rossman, 2014)	No evidence	NA	
<i>Diaporthe citrichinensis</i> Huang et al. [Ascomycetes, Diaporthales]	CN (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Dead wood (Farr and Rossman, 2014) Stems (Huang et al., 2001)	No evidence	NA	
<i>Diaporthe citrincola</i> Rehm [Ascomycetes, Diaporthales]	CN, CU, PH (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Stem, Fruit, Leaves (Farr and Rossman, 2014)	No evidence	NA	
<i>Diaporthe foeniculina</i> (Sacc.) Udayanga & Castlebury [Ascomycetes, Diaporthales]	ES, IT, PT, US (Farr and Rossman, 2014),	(Farr and Rossman, 2014)	Stems, Fruit, Leaves (Farr and Rossman, 2014)	No evidence	N/A	
<i>Diatrypella vulgaris</i> Trouillas, W.M. Pitt & Gubler [Ascomycetes, Xylariales]	AU (Farr and Rossman, 2014)	(Farr and Rossman, 2014; Trouillas et al., 2011)	Dead wood (Trouillas et al., 2011)	No evidence	NA	
<i>Dimerium scheffleri</i> (Henn.) Sacc. & D. Sacc. Syn: <i>Dimerosporium scheffleri</i> Henn.; <i>Porostigma scheffleri</i> (Henn.) Syd. & P. Syd	CN, TW (Farr and Rossman, 2014)	(CASI, 1994; Farr and Rossman, 2014)	Leaves (CASI, 1994)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution ¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed? ²	Evidence of seed transmission? ³	Remarks
[Ascomycetes, Incertae sedis]						
<i>Diplodia citrina</i> Diedike [Ascomycetes, Botryosphaeriales]	IN (Rao, 1969; Sydow et al., 1916)	(Rao, 1969; Sydow et al., 1916)	Branches (Rao, 1969)	No evidence	NA	
<i>Diplodia destruens</i> McAlpine [Ascomycetes, Botryosphaeriales]	AU, CH (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Farr and Rossman, 2014)	No evidence	NA	
<i>Diplodiella oospora</i> (Berk.) Sacc [Ascomycetes, Incertae sedis]	CN, TW, SU (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Stem (CASI, 1994)	No evidence	NA	
<i>Elsinoë australis</i> (Bitancourt & Jenk.) [Anamorph: <i>Sphaceloma australis</i> Bitancourt & Jenk.] [Ascomycetes, Myriangiales]	AU, BO, BR, ET, (Farr and Rossman, 2014) AR, AU, BO, BR, FJ, KR, PY, UY (EPPO, 2014) US (APHIS, 2013)	(Farr and Rossman 2014; Timmer et al., 2000)	Leaves, Fruit, Branches (Timmer et al., 2000)	No evidence	NA	Present in the United States and under official control. Regulated by Federal Order DA-2013-13 (APHIS, 2013).
<i>Endoxylina citricola</i> S.H. Ou [Ascomycetes, Xylariales]	CN (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (CASI, 1994), Stem (Teng, 1988)	No evidence	NA	
<i>Erysiphe quercicola</i> [= syn. <i>Oidium mangiferae</i>] S. Takam. & U. Braun [Ascomycetes, Erysiphales]	AU, BR, IR, JP, KR, MX, TH (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Fruit, Leaves (Farr and Rossman, 2014)	No evidence	NA	
<i>Eutypella citri</i> Sawada [Sordariomycetes; Xylariales]	TW (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Branches (Adesemoye and Eskalen, 2011)	No evidence	NA	
<i>Fusarium expansum</i> Schltld. [Ascomycetes, Hypocreales]	TT, ZA (Farr and Rossman, 2014)	(Baker, 1938b)	Fruit (Baker, 1938b)	No evidence	NA	This pathogen may occur as latent infections of citrus fruit

Citrus spp. Pathogen Pest List

Pest Name	Distribution ¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed? ²	Evidence of seed transmission? ³	Remarks
						(Baker, 1938a), but more research is needed to fully understand the epidemiology of this pathogen in citrus.
<i>Fusarium limonis</i> Briosi [Sordariomycetes, Hypocreales]	IN (Rao, 1969) IT, JP, KN, PR, PT, VT (Farr and Rossman, 2014)	(Rao, 1969)	Seedling (Rao, 1969), Roots (Saccardo, 1886)	No evidence	NA	
<i>Ganoderma tropicum</i> (Jung.) Bres [Agaromycetees: polyporales]	CN, NZ, TW (Farr and Rossman, 2014)	(Lin, 1979)	Roots (Lin, 1979)	No evidence	NA	
<i>Gilmania sawadae</i> (Yamamoto.) Bat. & Cif Syn: <i>Chaetothyrium sawadae</i> W. Yamam. [as 'sawadai'] [Eurotiomycetes: Chaetothyriales]	JP, TW (Farr and Rossman, 2014)	(Yamamoto, 1957)	Leaves (Yamamoto, 1957)	No evidence	NA	
<i>Gloeosporium citri</i> Cke. & Mass. [Ascomycetes Helotiales]	IN (Rao, 1969) CN, TT, TW (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Fruit (Rao, 1969) Stem (McAlpine, 1895)	No evidence	NA	
<i>Hapalopilus placodes</i> (Kalchbr.) N. Walters & DaCosta = <i>Polyporus placodes</i> Kalchbr. [Agaricomycetes:	AU (Zealand, 2014)	(Biosecurity Australia, 2006)	Stem (Biosecurity Australia, 2006)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution ¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed? ²	Evidence of seed transmission? ³	Remarks
[Incertae sedis]						
<i>Helicobasidium mompa</i> Tanaka [= <i>Septobasidium mompa</i> (Tanaka) Racib] [Ustilaginomycetes : Incertae cedis]	CN, ID, JP, KR, MW, MY, TW, UG, ZA (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Roots (Farr and Rossman, 2014)	No evidence	NA	
<i>Heterochaete tenuicula</i> (Lév.) Pat. [Basidiomycetes, Auriculariales]	CH, PH, TH (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Branches (Sato et al., 2010)	No evidence	NA	
<i>Lasiodiplodia citricola</i> Abdollahzadeh, Javadi & A.J.L. Phillips	IR (Phillips 2013 US (FL) (Chen et al., 2013)	Phillips 2013	Stem (Abdollahzadeh et al., 2010)	No evidence	NA	
<i>Lasiodiplodia iraniensis</i> Abdollahz., Zare & A.J.L. Phillips,	IR (Phillips 2013; Abdollahzadeh et al. 2010) BR, CO (Farr and Rossman, 2014)	Abdollahzadeh et al. 2010	Branches (Abdollahzadeh et al. 2010)	No evidence	NA	
<i>Lasiodiplodia pseudotheobromae</i> A.J.L. Phillips, A. Alves & Crous [Ascomycetes, Dothideales]	BR, CD, CN, CR, IR, MG, NL, SR, UY, ZA (Farr and Rossman, 2014)	(Farr and Rossman, 2014; Alves et al., 2008)	Whole plant (Ismail et al., 2012)	No evidence	NA	
<i>Leptosphaeria bondari</i> Jenkins & Wehm [Ascomycetes: Pleosporales]	BR (Mendes and Urben, 2013) PR, VG (Farr and Rossman, 2014)	(Mendes and Urben, 2013)	Branches, Leaves (Bitancourt and Jenkins, 1935b)	No evidence	NA	
<i>Marasmiellus scandens</i> (Masse) Dennis & D.A. Reid [Basidiomycetes: Agaricales]	BR (Mendes and Urben, 2013) BN, FJ, MY (Farr and Rossman, 2014)	(Turner, 1971; Singh, 1980)	Leaves (Farr and Rossman, 2014)	No evidence	NA	
<i>Marasmius crinis-</i>	BR, CI, FJ,	(Farr and	Leaves,	No	NA	This pathogen

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
<i>equi</i> F. Muell. ex Kalchbr. [Basidiomycetes: Agaricales]	GH, IN, JP, MY, PG, TT, VU (Farr and Rossman, 2014)	Rossmann, 2014)	Branches (Farr and Rossman, 2014)	evidence		has aerial rhizomorphs and is typically found in tree canopies and around fallen litter (Cairney, 1991)
<i>Massaria citricola</i> Syd. [Dothimycetes; Pleosporales]	CN (CASI, 1994)	(CASI, 1994)	Leaves, Stem (CASI, 1994)	No evidence	NA	
<i>Melanomma citricola</i> Syd. P. Syd. & E.J. Butler [Dothimycetes; Pleosporales]	IN (Rao, 1969)	(Rao, 1969)	Stem (Rao, 1969)	No evidence	NA	
<i>Microdiplodia heteroclita</i> Gonz. Frag. [Dothimycetes; Botryosphaerales]	AU (Biosecurity Australia, 2006) ES (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Biosecurity Australia, 2006)	No evidence	NA	
<i>Micropeltis duoseptata</i> Bat. [Ascomycetes: Incertae sedis]	BR (Mendes and Urben, 2013; Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Cyberliber, 1972)	No evidence	NA	
<i>Mycena citricolor</i> (Berk. & Curtis) Sacc. [Basidiomycetes, Agaricales]	BR, CO, CU, HT, MX, PA, PR, TT, VE, VG (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves, Stem, Fruit (Mariau, 2001)	No evidence	NA	
<i>Mycosphaerella horii</i> K. Hara Syn; <i>Phyllosticta curvispora</i> Hori, <i>Phyllosticta nakayamai</i> Hara [Ascomycetes, Mycosphaerellales]	CN, CU, FJ, JP, NI, PA, TW, US, VE, WS (Farr and Rossman, 2014)	(Farr and Rossman, 2014; Kishi, 1998)	Leaves (Amador, n.d.; Tanaka, 1917; Morton, 1987; (Kishi, 1998)	No evidence	NA	
<i>Mycosphaerella</i>	AR (Timmer	(Farr and	Leaves, Fruit,	No	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
<i>loefgreni</i> (Noack) Syn: = <i>Septoria loefgreni</i> [Ascomycetes: Capnodiales]	et al., 2000) BR (Mendes and Urben, 2013; Noack, 1900; Blanchard, 1930)	Rossmann, 2014)	Branches (de Coll et al., 2000)	evidence		
<i>Mycosphaerella tilakii</i> Tomilin <i>Mycosphaerella citricola</i> Tilak [Dothideomycetes: Capnodiales]	IN (Rao, 1969)	(Rao, 1969)	Leaves (Rao, 1969)	No evidence	NA	
<i>Nectria heterosperma</i> Kalchbr. & Cooke [Sordariomycetes: Hypocreales]	IN (Rao, 1969) MM (Thaung, 2007)	(Thaung, 2007)	Stems (Thaung, 2007)	No evidence	NA	
<i>Neofabraea citricarpa</i> (L. Zhu, H.Y. Li & K.D. Hyde) P.R. Johnst. ≡ <i>Cryptosporiopsis citricarpa</i> L. Zhu, H.Y. Li & K.D. Hyde [Ascomycetes, Helotiales]	CN (Farr and Rossmann, 2014)	(Farr and Rossmann, 2014)	Leaves (Farr and Rossmann, 2014), Branches (Zhu et al., 2012)	No evidence	NA	
<i>Pellicularia alba</i> (Dast.) Dastur (Syn = <i>Corticium album</i> Dastur [Agaricomycetes: Cantharellales]	IN (Rao, 1969)	(Rao, 1969)	Stems (Rao, 1969)	No evidence	NA	
<i>Perenniporia ochroleuca</i> (Berk.) Ryvarden [syn: <i>Fomitopsis ochroleuca</i> (Berk.) Imazeki] [Agaricomycetes: polyporales]	AU, ES, GR, JP, PT (Farr and Rossmann, 2014)	(Biosecurity Australia, 2006)	Stems, Roots (Biosecurity Australia, 2006)	No evidence	NA	
<i>Pestalotiopsis citri</i> (Mundk. & Khesw.) Ershad & Roohib	IN (Rao, 1969; Mundkur and Kheswala, 1942)	(Rao, 1969; Mundkur and Kheswala, 1942)	Leaves (Rao, 1969; Mundkur and Kheswala, 1942)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution ¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed? ²	Evidence of seed transmission? ³	Remarks
Syn: <i>Pestalotia citri</i> Mundk. & Khesw. [Sordariomycetes: Xylariales]						
<i>Phellinus noxius</i> (Corner) G. Cunn. 1965 [Basidiomycetes: Hymenochaetales]	AU, CN, GH, ID, IN, JP, MY, NG, NZ, PG, PR, TW, TZ (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Roots (Farr and Rossman, 2014; Hodges and Tenorio, 1984)	No evidence	NA	
<i>Phoma macrophoma</i> McAlp. [Dothideomycetes: Pleosporales]	AU, IN (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Branches (CABI, 2012) Stems (Rao, 1969)	No evidence	NA	
<i>Phoma nainiensis</i> Bilgrami [Dothideomycetes: Pleosporales]	IN (Rao, 1969)	(Rao, 1969)	Leaves (Rao, 1969)	No evidence	NA	
<i>Phyllosticta arethusa</i> Bubák [Ascomycetes: Dothideales]	AU, IT (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (CABI, 2012)	No evidence	NA	
<i>Phyllosticta beltranii</i> Penzig [Ascomycetes: Dothideales]	KR, JP (Kishi, 1998) IT, CN (Farr and Rossman, 2014)	(Kishi, 1998)	Leaves (Index Information Center, 2001; Kishi, 1998; NIAST, 2008)	No evidence	NA	
<i>Phyllosticta citricarpa</i> McAlpine Teleomorph: <i>Guignardia citricarpa</i> (Kiely) = <i>P. citricola</i> ; <i>Phoma citricarpa</i> [Ascomycetes, Dothideales]	AR, AU, BR, CN, CU, JP, MM, UY, ZA, ZW (Farr and Rossman, 2014) US (APHIS, 2013)	(Kiely, 1948; Kotze, 1963)	Fruit, Leaves, Stem (Kiely, 1948; Kotze, 1963) Branches (CABI, 2012)	No evidence	NA	Present in Florida and under official control. Regulated by Federal Order DA-2014-29 (APHIS, 2014).
<i>Phyllosticta citrichinaensis</i> X.H. Wang, K.D. Hyde, and H. Y. Li [Ascomycetes, Dothideales]	CN (Farr and Rossman, 2014; Wang et al., 2012)	(Farr and Rossman, 2014; Wang et al., 2012)	Leaves, Stem, Fruit, Branches (Farr and Rossman, 2014; Wang et al., 2012)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
<i>Phyllosticta citriasiana</i> Wulandari, Crous, and Gruyter [Ascomycetes, Dothideales]	CN (Wang et al., 2012) TH, VT (Farr and Rossman, 2014)	(Farr and Rossman, 2014; Wang et al., 2012)	Leaves, Stem, Fruit, Branches (Farr and Rossman, 2014; Wang et al., 2012)	No evidence	NA	
<i>Phyllosticta disciformis</i> Penz. [Ascomycetes, Dothideales]	IN (Rao, 1969), IT, JP, UA (Farr and Rossman, 2014)	(Rao, 1969)	Leaves (Rao, 1969)	No evidence	NA	
<i>Phyllosticta limonum</i> Lucas & Da Camara [Ascomycetes, Dothideales]	AU (McAlpine, 1899), IN (Rao, 1969)	(Rao, 1969)	Leaves (Rao, 1969)	No evidence	NA	
<i>Phyllosticta scabiosa</i> McAlpine [Ascomycetes, Dothideales]	AU (Biosecurity Australia, 2006)	(Biosecurity Australia, 2006)	Stem (Biosecurity Australia, 2006)	No evidence	NA	
<i>Physalospora rhodina</i> (Berk. & Curtis) Cooke [Ascomycetes, Dothideales]	AU, BR, CD, CI, CN, CO, CR, CU, DO, GH, HN, ID, IL, IN, JM, KR, MG, MX, PA, PE, SV, TT, TW, TZ, UG, US, WS (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Fruit, Leaves, Stem (Farr and Rossman, 2014)	No evidence	NA	
<i>Plenodomus tracheiphilus</i> (Petri) Gruyter, Aveskamp & Verkley) ≡ <i>Phoma tracheiphila</i> (Petri) L.A. Kantsch. & Gikaschvili [Dothideomycetes: Pleosporales]	AL, AT, BE, CY, DZ, EG, FR, GE, GR, IL, IQ, IT, LB, LY, RU, SY, TN, TR, YE (EPPO, 2014) IL, IT (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves, Stem (Farr and Rossman, 2014)	No evidence	NA	
<i>Pleospora disrupta</i> McAlpine, [Dothideomycetes, Pleosporales]	AU, GR, ZA (Farr and Rossman, 2014)	(McAlpine, 1899)	Leaves (McAlpine, 1899)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
<i>Pseudocercospora citri</i> (T. Carvalho & O. Mendes) Crous & U. Braun [Ascomycetes, Mycosphaerellales]	CN, DO (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Braun et al., 2003)	No evidence	NA	
<i>Pyrenochaeta destructiva</i> McAlpine [Ascomycetes, Pleosporales]	AU (Watson, 1971)	(Watson, 1971)	Leaves (Watson, 1971)	No evidence	NA	
<i>Pythium spinosum</i> Sawada (= <i>Globisporangium spinosum</i> (Sawada) Uzuhashi, Tojo & Kakish.) [Oomycota, Peronosporales]	AU, BG, CN, IN, JP, KR, MU, NL, TW, US, ZA (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Roots, Crown, Seedlings (Farr and Rossman, 2014)	No evidence	NA	
<i>Rhynchodiplodia citri</i> Briosi & Farnetti [Incertae sedis, Incertae sedis]	IN (Rao, 1969, 1906), IT (Saccardo, 1906)	(Rao, 1969)	Fruit (Rao, 1969)	No evidence	NA	
<i>Rigidoporus hypobrunneus</i> (Petch) Corner, Beih. [Agaricomycetes: polyporales]	TH (Choeyklin et al., 2011)	Choeyklin et al., 2011)	Roots (Choeyklin et al., 2011)	No evidence	NA	
<i>Rosellinia bunodes</i> (Berk. & Broome) Sacc. [Ascomycetes: Xylareales]	BR, CO, CR, CU, GT, ID, IN, JM, LK, MX, MY, PE, PG, PH, PR, SG, SV, TT, TW, VG (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Roots, Stem (Farr and Rossman, 2014)	No evidence	NA	
<i>Rosellinia pepo</i> Pat. [Ascomycetes: Xylareales]	BR, DO, GP, JM, LC, MX, PG, PR, SV, TT, VG (Farr	(Forzza et al., 2010)	Roots, Stems (Farr and Rossman, 2014)	No evidence	NA	

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
	and Rossman, 2014)					
<i>Ruggieria glaucescens</i> (Trabut) nob., n. comb. = <i>Cytosporina citriperda</i> Campan [Ascomycetes, Incertae sedis]	DZ, IT, MA, UR (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Fruit (Farr and Rossman, 2014)	Yes (Campanile, 1922)	Not known	See section 2.3 for more information.
<i>Septobasidium citricolum</i> Sawada ≡ <i>Septobasidium citricola</i> Sawada [Pucciniomycetes Septobasidiales]	IN (Rao, 1969) JP, TW (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves, Stem (Rao, 1969)	No evidence	NA	
<i>Septoria arethusa</i> (Penz.) [Ascomycetes: Mycosphaerellales]	AR (Wellman, 1977a) IT (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Leaves (Wellman, 1977a)	No evidence	NA	
<i>Septoria cattanei</i> Coletta-Filho, 2005 Texira, 2005 (Alb. et Schw.) [Sordariomycetes: Microascales]	IN (Rao, 1969)	(Rao, 1969)	Leaves (Rao, 1969)	No evidence	NA	
<i>Sphaceloma fawcettii</i> var. <i>scabiosa</i> (McAlpine & Tryon) Jenkins [Ascomycetes, Myriangiales]	BO, BR, CN, DO, HT, IN, JP, PG, SL, TW, US, ZA (Farr and Rossman, 2014)	(Farr and Rossman, 2014)	Fruit, Leaves, Branches (Farr and Rossman, 2014)	No evidence	NA	
<i>Sporocybe hybrida</i> Mason [Dothideomycetes: Pleosporales]	IN (Rao, 1969)	(Rao, 1969)	Roots (Rao, 1969)	No evidence	NA	
<i>Trichurus gorgonifer</i> Bainier [Sordariomycete: Mycroascales]	IN (Rao, 1969) CY, KY (Farr and Rossman, 2014)	(Rao, 1969)	Fruit (Rao, 1969)	No evidence	NA	
<i>Uredo citri</i> Cooke [Pucciniomycetes: Pucciniales]	IN (Rao, 1969)	(Rao, 1969)	Leaves (Rao, 1969)	No evidence	NA	

BACTERIA AND PHYTOPLASMAS

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
<i>Candidatus</i> Liberobacter asiaticus Jagoueix et al. 1994. (Citrus greening)	BR (Texeira et al., 2005), CN (Ding et al., 2008), BD, BT, BZ, CR, CU, DO, ET, GP, HN, ID, IN, IR, JM, JP, KH, Laos, LK, MX, MY, NP, PH, PK, PR, PY, SA, TH, TW, VG (EPPO, 2014) US (7 CFR 301.76, 2015)	(Texeira et al., 2005; Timmer et al., 2000)	Vascular tissues and part plants including seed (Tatineni et al., 2008) Branches, Seeds, Fruit, Roots (Timmer et al., 2000)	Yes (Tatineni et al., 2008; Timmer et al., 2000)	No evidence	Present in the United States and under official control. Regulated by 7 CFR 301.76 (7 CFR 7 CFR § 301.76, 2015). See section 2.3
<i>Candidatus</i> Liberibacter americanus Tixeira et al.	BR (Coletta-Filho et al., 2005; Texeira et al., 2005)	(Coletta-Filho et al., 2005; Texeira et al., 2005)	Whole Plant (Coletta-Filho et al., 2005; Texeira et al., 2005)	Yes (EPPO, 2014; Teixeira et al., 2008; Van Vuuren et al., 2011)	No evidence	See section 2.3
<i>Candidatus</i> Liberibacter africanus	ZA (Pietersen et al., 2010), BI, CF, CM, ET, KE, KM, MG, MU, MW, RE, RW, SA, SH, SO, SZ, TZ, UG, YE, ZW (EPPO, 2014)	(Pietersen et al., 2010)	Whole Plant (Pietersen et al., 2010)	Yes (Van Vuuren et al., 2011)	No evidence	See section 2.3
‘ <i>Candidatus</i> Phytoplasma asteris’ Lee et al.	AU (Jomantiene et al., 2011), CU (Acosta et al., 2011), ID (Boa et al., 2010), IR (Vali-Sichani et al., 2014), KR (Back et al., 2010) MM (Win et al., 2014) MX (Santos-	(Chen et al., 2009)	Whole plant (Chen et al., 2009)	No evidence	NA	Strains of ‘ <i>Ca.</i> Phytoplasma asteris’ occur in the United States (Lee et al., 2004), but we found no evidence of a ‘ <i>Ca.</i> P. asteris’ strain in the United States infecting

Citrus spp. Pathogen Pest List

Pest Name	Distribution ¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed? ²	Evidence of seed transmission? ³	Remarks
	Cervantes et al., 2007), MY (Naderali et al., 2013), TR (Caglayan et al., 2013) AR, AU, BM, BY, CA, CN, CO, CS, DE, ES, FR, GB, GT, HU, IN, IT, JP, PE, PL, RO, SU, US, VC (EPPO, 2014)					citrus. The biological properties of the ‘ <i>Ca. P. asteris</i> ’ Huanglongbing associated strain, such as host range, pathogenicity, and insect vector(s) remain to be determined (Chen et al., 2009).
<i>Candidatus</i> Phytoplasma aurantifolia	AE, IN, IR, OM (EPPO, 2014), CN (Xia et al., 2013), ID (Harling et al., 2009), JP (Naito et al., 2007), MX (Ochoa-Sánchez et al., 2009), CU (Arocha et al., 2006), GB (Reeder et al., 2009)	(EPPO, 2014)	Leaves (Garnier et al., 1991), Whole plant (generally found in phloem tissues) (Bertaccini and Duduk, 2009)	Yes (Faghihi et al., 2011)	No evidence	
Pigeon pea, witches-broom phytoplasma (16Sr IX)	BR (Teixeira et al., 2008)	(Teixeira et al., 2008)	Whole plant (Teixeira et al., 2008)	Yes, aborted seed (Teixeira et al., 2008)	No evidence	
<i>Xanthomonas axonopodis</i> pv. <i>aurantifolii</i> (Vauterin, et al.) [Syn. <i>X. campestris</i> pv. <i>Aurantifolii</i> (Hasse) Dye] (Citrus canker B)	AR, BR, MX (Khodakarami an and Swings, 2011)	(Timmer et al., 2000)	Leaves, Fruit, Branches (Timmer et al., 2000)	No evidence	NA	
<i>Xanthomonas citri</i>	AF, AR, BD,	(Timmer et	Stems, Leaves,	No	NA	Present in the

Citrus spp. Pathogen Pest List

Pest Name	Distribution¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed?²	Evidence of seed transmission?³	Remarks
subsp. <i>citri</i> (ex Hasse 1915) Gabriel <i>et al.</i> 1989 [Syn. <i>X. axonopodis</i> pv. <i>citri</i> (Vauterin, <i>et al.</i>), <i>X. campestris</i> pv. <i>citri</i> (Hasse) Dye] (Citrus canker A)	BO, BR, CN, ET, FJ, FM, GA, ID, IN, IR, JP, KH, KR, LK, MG, MV, MY, NP, OM, PG, PH, PK, PW, PY, SB, SG, TH, TW, VG, VN (EPPO, 2014) US (7 CFR	al., 2000)	Fruit (Timmer <i>et al.</i> , 2000)	evidence (See section 2.3)		United States and under official control. Regulated by 7 CFR 319.19 (7 CFR 7 CFR § 319.19, 2015)
<i>Xylella fastidiosa</i> (Wells, <i>et al.</i>) Citrus variegated chlorosis strain (Syn.: Pecosita, declinamiento, fruta bolita)	AR, BR, CA, CR, IN, IT, MX, PY, TR, TW, US, VE (EPPO, 2013)	(Timmer <i>et al.</i> , 2000)	Branches, Fruit, Roots (Timmer <i>et al.</i> , 2000)	Yes (Li <i>et al.</i> , 2009)	No evidence (Hartung <i>et al.</i> , 2014; Coletta-Filho <i>et al.</i> , 2014; Cordeiro, 2014)	
VIRUSES AND VIRUS-LIKE AGENTS						
<i>Citrus yellow mosaic virus</i>	IN (Ahlawat and Pant, 2003, Bhaskara Reddy and Ahlawat, 2009)	(Ahlawat and Pant, 2003; Bhaskara Reddy and Ahlawat, 2009)	Whole plant (Chung and Blansky, 2012)	No evidence	NA	
<i>Citrus Yellow Vein Clearing Virus</i>	CN (Chen <i>et al.</i> , 2014; Zhou and Li, 2010) IN(Ahlawat and Pant, 2003) PK(Bové, 1995; Grimaldi and Catara, 1996) TR (Catara <i>et al.</i> , 2008; Önelge <i>et al.</i> , 2010; Önelge <i>et al.</i> , 2011)	(Bové, 1995, Chen <i>et al.</i> , 2014; Alshami <i>et al.</i> , 2003)	Whole plant (Bové, 1995 Chen <i>et al.</i> , 2014; Alshami <i>et al.</i> , 2003)	No evidence	NA	
<i>Satsuma dwarf nepovirus</i> [Secoviridae:	JP (Brunt <i>et al.</i> , 1996), CN (Cui, 1991)	(Brunt <i>et al.</i> , 1996)	Whole plant (Brunt <i>et al.</i> , 1996)	No Evidence	N/A	See section 2.3

Pest Name	Distribution ¹	Host status for <i>Citrus</i> spp.	Plant part(s) association	Associated with the seed? ²	Evidence of seed transmission? ³	Remarks
Sadwavirus]	IR, KR, TR (EPPO, 2014)					

¹ Distribution country code list is provided in Appendix A

² Evidence that the pathogen is associated with the seed of *Citrus* spp.

³ Evidence that the pathogen is seed transmitted (infected seed could result in disease development in new seedlings).

2.3 Notes on pests identified in the pest list

***Candidatus Liberibacter* species** (*'Candidatus Liberibacter asiaticus'*, *'Candidatus Liberibacter americanus'*, and *'Candidatus Liberibacter africanus'*) - Little research on seed transmission is available for most *Candidatus Liberibacter* species that infect citrus, with the exception of *'Candidatus Liberibacter asiaticus'* and *'Candidatus Liberibacter africanus.'* In general, the ability of *Candidatus Liberibacter* to cause disease through seed transmission is not definitively known. The first studies examining the possibility that citrus greening (causal agents: *'Ca. L. asiaticus'*, *'Ca. L. americanus'*, *'Ca. L. africanus'*) could be transmitted via seeds were based on visual observations, as molecular diagnostics were unavailable at the time. Observations revealed that some seedlings derived from seed collected from apparently CG-affected fruit, produced stunted chlorotic seedlings (e.g. Tirtawidjaja, 1981). PCR detection protocols for *'Ca. L. asiaticus'* (i.e. Li et al., 2006) led to advancements in seed transmission research. Using PCR protocols, *'Ca. L. asiaticus'* was confirmed as present in the seed coat but not in the embryo of the seed (e.g. Li et al., 2009; Tatineni et al., 2008). A series of experiments using different PCR techniques detected DNA of *'Ca. L. asiaticus'* in seedlings derived from seeds of infected fruit. These studies also reported atypical symptoms in some plants and indicated a variable rate of seed transmission (1 to 41%) (e.g. Shatters, 2008; Duan, 2009, Duan, 2010; Benyon et al., 2008, Benyon et al., 2009; Graham et al., 2008). These early studies likely lead to the USDA APHIS Federal Import Quarantine Order that prohibits the importation of citrus seeds due to the possibility that seeds for planting may be a pathway for the spread of HLB (APHIS, 2009). None of the above studies were able to confirm citrus greening disease in any of the experimental seedlings. Research continued to progress and several additional studies examining seedlings derived from seeds of infected fruit also detected DNA of *'Ca. L. asiaticus'* in seedlings at low rates (0.3 to 7.1 %) and reported atypical symptoms, but concluded that the *'Ca. L. asiaticus'* was likely transient, the abnormal growth pattern observed in seedlings was not indicative of citrus greening, (e.g. Hartung et al., 2010; Albrecht and Bowman, 2009; Shokrollah et al., 2009; Hilf, 2011; Graham et al., 2011). A study by Van Vuuren et al. (2011) examining the *'Ca. L. africanus'* strain of citrus greening also did not detect seed transmission with that species. It appears that a large population of *Candidatus Liberibacter* cells in seed coats is not sufficient to lead to infection of the embryo on its own. There is no vascular continuity between maternal seed tissue and the developing embryo. A path by which *Candidatus Liberibacter* would colonize

the developing embryo remains undefined. Based on the above evidence, it is unlikely that any *Candidatus Liberibacter* species are able to cause disease through seed transmission.

***Ruggieria glaucescens* (Trabut) nob. n. comb. = *Cytosporina citriperda* Campan.** This postharvest disease is reported to infect fruit of tangerine (Camopanelii, 1922; EuroMedCitrusNet, 2007). Campanelli (1922) described this pest causing damage on fruit of *Citrus reticulata* in the markets in Rome, Italy. Symptoms on infected fruit are characterized by the presence of blackish-brown, depressed spot on skin areas on fruits, 3-15 mm in diameter. Several spot may coalesce infecting the whole fruit. Fungal structures (picnidia) appear in the infected areas of fruits that under high relative humidity could produce numerous conidia (Camopanelii, 1922; EuroMedCitrusNet, 2007). In some cases, the infection reaches the center of the fruit and may affect the seeds, though this rarely occurs (Camopanelii, 1922). Since its original description in 1922, no additional records of *C. citriperda* have been reported in any part of the world and no evidence reported of seed transmission.

Satsuma dwarf virus- Brunt et al. (1996) reports that *Satsuma dwarf virus* (SDV) is associated with seeds. However, we found no evidence in the current literature of SDV associating with seed or seed transmission. SDV is readily transmitted by grafting through infected budwood, as well as possibly soil (Koizumi et al., 1988; Lee, 2015). No vectors have yet been reported or confirmed in the literature (Lee, 2015).

Xanthomonas citri* subsp. *citri- Under natural conditions there is no mechanism for Xcc bacteria to infect the seed and no records of seed transmission (Gottwald and Graham, 2000). Infections are confined to the epidermis of the fruit and do not reach the internal tissue where the seeds reside (Gottwald and Graham, 2000). There are no reports of Xcc infecting seeds of citrus (Timmer et al., 2000). However, in commercial operations seed extraction methods can contaminate seeds with Xcc bacteria (Graham et al., 2010; Graham et al., 2012). While the bacteria are unable to infect the seeds, it can contaminate the seed coat (Graham et al., 2012). Xcc bacteria can survive on surfaces within for long periods of time (Cubero et al., 2011). Xcc contaminated seeds are reported to cause canker outbreaks in nurseries (Graham et al., 2012). When the contaminated seed germinates new citrus tissue may come into contact with the bacteria contaminating the seed coat and initiate a new infection.

3. Conclusion

This document presents a comprehensive citrus pathogen list to identify quarantine pathogens that may follow the citrus seed pathway and cause disease. This pest list is a compilation of all pathogens associated with *Citrus* spp. present in commercial citrus producing countries around the world. In total we identified 105 actionable pathogens associated with citrus somewhere in the world. Specifically we identified 93 fungi, 9 bacteria and phytoplasmas, and 3 viruses and virus-like agents quarantine pests. Upon close examination, there is no evidence that any of these pathogens are able to cause disease through seed transmission. Based on the current evidence

citrus seed does not appear to be a pathway of introduction for any quarantine pathogens into the United States.

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6. Appendix

A. ISO Country Codes for Distribution

AF	Afghanistan
AM	Armenia
AR	Argentina
AT	Austria
AU	Australia
BB	Barbados
BD	Bangladesh
BE	Bangladesh
BG	Bulgaria
BN	Brunei Darussalam
BO	Bolivia
BR	Brazil
BT	Bhutan
BZ	Belize
CA	Canada
CD	Congo
CH	Chile
CI	Côte d'Ivoire
CN	China
CO	Colombia
CR	Costa Rica
CS	Czechoslovakia
CU	Cuba
CY	Cyprus
DE	Germany
DK	Denmark
DO	Dominican Republic
ES	Spain
ET	Ethiopia
FJ	Fiji
FR	France
FM	Federated States of Micronesia
GA	Gabon
GB	United Kingdom of GB and Ireland

GE	Georgia
GH	Ghana
GP	Guadeloupe
GR	Greece
GT	Guatemala
HN	Honduras
HT	Haiti
HU	Hungary
ID	Indonesia
IL	Israel
IN	India
IR	Iran
IT	Italy
JM	Jamaica
JP	Japan
KE	Kenya
KH	Cambodia
KR	Korea
LK	Sri Lanka
LY	Libya
MG	Madagascar
MM	Myanmar
MU	Mauritius
MW	Malawi
MX	Mexico
MV	Maldives
MY	Malaysia
NG	Nigeria
NI	Nicaragua
NL	Netherlands
NO	Norway
NP	Nepal
NZ	New Zealand
OM	Oman
PA	Panama

PE	Peru
PG	Papua New Guinea
PH	Philippines
PK	Pakistan
PL	Poland
PR	Puerto Rico
PT	Portugal
PW	Palau
PY	Paraguay
RO	Romania
RW	Rwanda
SA	Saudi Arabia
SB	Solomon Islands
SE	Sweden
SG	Singapore
SL	Sierra Leone
SO	Somalia
SU	USSR
SV	El Salvador
TH	Thailand
TR	Turkey
TT	Trinidad and Tobago
TW	Taiwan
TZ	Tanzania
UA	Ukraine
UG	Uganda
US	United States
UY	Uruguay
VE	Venezuela
VG	British Virgin Islands
YU	Yugoslavia
ZA	South Africa
ZM	Zambia
ZW	Zimbabwe

B. Pests with non-actionable regulatory status

Amphisphaeria citri Henn., Lichen forming fungi, not a pathogen (Wang and He, 2007).

Hypocrella aleyrodis (Webber) Sawada. Anamorph: *Aschersonia aleyrodis* Webber. With exception of Brazil all other strains were isolated from insects (Liu et al., 2006). *Hypocrella aleyrodis* is not a plant pathogen (Liu et al., 2006). The genus *Aschersonia* is not reportable.

Hypocrea lixii (Pat.) Anamorph: *Trichoderma harzianum* Rifai. is not a plant pathogen (Elad et al., 1980; Elad et al., 1982).

Kretzschmaria deusta (Hoffm.) P.M.D. Martin Syn: *Ustulina deusta* (Hoffm.) Lind. is a Wood decaying fungi, not a plant pathogen (Skellern, 2013).

We considered the following pathogens but did not include them in Table 2 due to their categorizations as sooty molds. *Aithaloderma citri* (Briosi & Pass.) Woron. (syn: *Capnodium citri* (Pers.) Berk. & Desm.), *Blakeslea trispora* Thaxt, *Capnodium brasiliense* Puttemans, *Capnodium citri* Berk. & Desm. [= *Limacinia citri* (Briosi & Pass.)], *Capnodium salicinum* Mont. [Anamorph: *Fumagospora capnodioides* G. Arnaud., *Ceramothyrium aurantii* Bat. & H. Maia Syn: ≡ *Limacinia aurantii* Henn., *Ceramothyrium citricola* Bat. & Nascim., *Chaetoscorias vulgaris* Yamamoto, *Chaetothyrium echinulatum* Yamamoto, *Chaetothyrium setosum* (Zimm.) Hansf. [= *Limacinia setosa* (Zimm.) Sacc. & D. Sacc., = *Hypocapnodium setosum* (Zimm.) Speg.], *Fumiglobus citrinus* (Bat. & Cif.) D.R. Reynolds & G.S. Gilbert, *Limacinia aurantii* P. Henn., *Limacinia penzigi* Sacc., *Meliola butleri* Syd. & P. Syd., *Meliola citricola* (Syd. & P. Syd.), *Morfea alaskensis* var. *minor* Bat. & J.L. Bezerra. Syn: *uantennaria alaskensis* (Sacc. & Scalia) Speg., *Myriangium floridanum* (Ellis & L.D. Galloway) Rehm., *Paropodia intermedia* Cif. & Bat., *Pseudomonas fluorescens* (Trevisan) Migula, *Scorias citrina* (Hara) Yamamoto Syn: *Antennella citrina* Hara., *Tripospermum pes-gallinae* Cif., Bat. & Nascim.

Table 2. Pathogens of citrus with non-actionable regulatory status.

Organism	Evidence in United states and/or other notes
FUNGI	
<i>Albonectria rigidiuscula</i> (Berk. & Broome) Rossman & Samuels	Junqueira et al., 2001; Farr and Rossman, 2015; PestID, 2015
<i>Alternaria alternata</i> (Keissl) [Ascomycetes: Pleosporales]	Farr and Rossman, 2015; Farr and Rossman, 2015; PestID, 2015
<i>Alternaria brassicae</i> (Berk.) Sacc. (Deutermycotina: Hyphomycetes)	CABI, 2012; Farr and Rossman, 2015; PestID, 2015
<i>Alternaria citri</i> (Ellis & N. Pierce)	Farr and Rossman, 2015; PestID, 2015
<i>Alternaria citrimacularis</i> E.G. Simmons	Farr and Rossman, 2015; Andrew et al., 2009

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<i>Alternaria tenuissima</i> (Nees & T. Nees : Fr.) Wiltshire	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Armillaria mella</i> (Vahl: Fr) P. Kumm.	Farr and Rossman, 2015; Williams et al., 1989
<i>Armillaria tabescens</i> (Scop.)	CABI, 2012; Farr and Rossman, 2015 Non-actionable based on distribution.
<i>Aschersonia placenta</i> Berk. [Teleomorph; <i>Hypocrella aleyrodis</i> (Webber) Sawada]	CASI, 1994; Genus is non-reportable PestID, 2015
<i>Aspergillus aculeatus</i> Iizuka Syn.: <i>Aspergillus</i> <i>japonicus</i> var. <i>aculeatus</i> (Iizuka) Al-Musallam	Mendes and Urben, 2013; Doster et al., 1996; Gold et al., 1973. The genus is not actionable PestID, 2015
<i>Aspergillus flavus</i> Link	CABI, 2012; French, 1989. The genus is not actionable PestID, 2015
<i>Aspergillus melleus</i> Yukawa Syn: <i>A. quercinus</i> (Bainier) Thom & Church; <i>Sterigmatocystis</i> <i>quercina</i> Bainier	Mendes and Urben, 2013; Bayman et al., 2002; Doster and Michailides, 1994; Doster et al., 1996 The genus is not actionable PestID, 2015
<i>Aspergillus niger</i> (Tiegh.)	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013. The genus is not actionable PestID, 2015
<i>Athelia rolfsii</i> (Curzi) Tu & Kimbr. [= <i>Corticium</i> <i>rolfsii</i>] [Anamorph: <i>cerotium rolfsii</i> (Sacc.) Syn <i>Sclerotium rolfsii</i> Sacc.]	CABI, 2012; Farr and Rossman, 2015; PestID, 2015; Mendes and Urben, 2013
<i>Atichia glomerulosa</i> (Ach.) Stein Syn: <i>Collema</i> <i>glomerulosum</i> Ach. Syn <i>Seuratia millardetti</i> <i>Auricularia polytricha</i> (Mont.) Sacc.	Farr and Rossman, 2015; Mendes and Urben, 2013. Non-actionable based on distribution. Magowski, W., 1988; Duncan, 1972; Reinking, 1921 Non-actionable based on distribution
<i>Bionectria ochroleuca</i> (Schwein) Schroers & Samuels [= <i>Nectria ochroleuca</i>] [Anamorph: <i>Clonostachys rosea f. rosea</i> (Link: Fr.) Schroers et al.]	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Botrytis cinerea</i> (Pers. Fr.) [Teleomorph: <i>Botryotinia fuckeliana</i> (de ary) Whetzel]	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Botryodiplodia theobromae</i> Pat. Syn.: <i>Diplodia</i> <i>natalensis</i> Pole Evans Teleomorph: <i>Physalospora rhodina</i> Berk. & M.A. Curtis	Abbot, 1931; CABI, 2012; C.M.I., 1985, PestID, 2015
<i>Botryosphaeria dothidea</i> (Moug.) Ces. & De Not [Syn. <i>B. ribis</i>) Grossenb. & Dugar); Anamorph <i>Fusicoccum aesculi</i> Corda]	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Botryosphaeria parva</i>	CABI, 2012; PestID, 2015
<i>Botryosphaeria ribis</i> Grossenb. & Duggar	CABI, 2012; Farr and Rossman, 2015; PestID, 2015
<i>Botryosphaeria quercuum</i> (Schwein.)	Farr and Rossman, 2015; PestID, 2015

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<i>Botryosphaeria ribis</i> Grossenb. & Duggar [Anamorph <i>Neofusicoccum ribis</i> (Slippers, Crous & M. J. Wingfield) Crous, Slippers & A. J. L. Phillips]	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Botryosphaeria rhodina</i> (Cooke) Arx [anamorph: <i>Lasiodiplodia theobromae</i> (Pat.) Griffon & Maubl.] (syn: <i>Physalospora rhodina</i> Cooke; <i>Diplodia natalensis</i> Pole-Evans)	Pinruan et al., 2007; Phipps and Porter, 1998; Wright and Harmon, 2009; Farr and Rossman, 2015; French, 1989 Non-actionable based on distribution
<i>Botryotinia fuckeliana</i> (de Bary) Whetzel (Ascomycetes: Sclerotiniaceae) Anamorph: <i>Botrytis cinerea</i>	Dongo, 1972, PestID, 2015
<i>Ceratobasidium anceps</i> (Bres. & Syd.) H.S. Jacks.	Farr and Rossman, 2015; Mendes and Urben, 2013 Non-actionable based on distribution
<i>Ceratocystis fimbriata</i> Ellis & Halst.	CABI, 2012; Montoya and Wingfield, 2006, PestID, 2015
<i>Cercospora aurantia</i> Heald & F.A. Wolf	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Cercospora penzigii</i> Sacc.	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Chalara elegans</i> Nag Raj & W.B. Kendr. Anamorph <i>Thielaviopsis basicola</i> (Berk. & Broome) Farraris	Farr and Rossman, 2015; MAPA, 2012; PestID, 2015
<i>Cladosporium citri</i> Masee	Farr and Rossman, 2015; PestID, 2015
<i>Cladosporium cladosporioides</i> (Fresen.) G.A. De Vries	CABI, 2012; Farr and Rossman, 2015; PestID, 2015
<i>Cladosporium herbarum</i> (Pers.: Fr.) Link Syn : = <i>Cladosporium epiphyllum</i> (Pers.: Fr.) Fr.	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Cladosporium oxysporum</i> Burk. & M.A. Curtis	CABI, 2012; Farr and Rossman, 2015; PestID, 2015
<i>Clonostachys rosea</i> f. <i>rosea</i> (Link: Fr.) Schroers et. al. 1999	Manoch et al., 1986; Samuels, 1976; Peregrine and Ahmad, 1982; PestID, 2015
<i>Cochliobolus lunatus</i> R.R. Nelson & Haasis Anamorph: <i>Curvularia lunata</i> (Wakker) Boedijn	CABI, 2012; Mendes and Urben, 2013; PestID, 2015
<i>Cochliobolus pallescens</i> (Tsuda & Ueyama) Sivan. Synonym: <i>Pseudocochliobolus pallescens</i> Tsuda & Ueyama, Anamorph: <i>Curvularia pallescens</i> Boedijn)	Wu et al., 2008; Piekun, 1996; Farr and Rossman, 2015; PestID, 2015
<i>Colletotrichum acutatum</i> (Simmonds ex Simmonds) [Teleomorph: <i>Lomerella acutata</i> Guerber & J.C. Correll]	CABI, 2012; Farr and Rossman, 2015; PestID, 2015
<i>Colletotrichum crassipes</i> (Speg.) Arx	CABI, 2012; Farr and Rossman, 2015, Martínez- Culebras et al., 2000, PestID, 2015
<i>Colletotrichum coccodes</i> (Wallr.) S. Hughes. [=	Gotlieb et al., 1987

<i>Gloeosporium foliicola</i> (Nishida) Sawada [as ' <i>foliicolum</i> ']	
<i>Colletotrichum fructicola</i> Prihastuti, L. Cai & K.D. Hyde	Peng et al., 2012; Farr and Rossman, 2015; Weir et al., 2012 Non-actionable based on distribution
<i>Colletotrichum gloeosporioides</i> (Penz.) Penz. & Sacc. In Penz. [Teleomorph: <i>Glomerella cingulata</i> (Stoneman) Spauld. & H. Schrenk] Syn: <i>Gloeosporium spegazzinii</i> Sacc., in Index Fungorum	PestID, 2015
<i>Colletotrichum karstii</i> Y.L. Yang, Zuo Y. Liu, K.D. Hyde & L. Cai	CABI, 2012; Damm et al., 2012; Farr and Rossman, 2015 Non-actionable based on distribution
<i>Colletotrichum musae</i> (Berk & M.A.Curtis) Arx Syn.: <i>Gloeosporium musarum</i>	Abbot, 1931; Farr and Rossman, 2015; PestID, 2015
<i>Colletotrichum siamense</i> Prihastuti, L. Cai & K.D. Hyde	Farr and Rossman, 2015; Weir et al., 2012 Non-actionable based on distribution
<i>Colletotrichum truncatum</i> (Schwein.) Andrus & W.D. Moore) Synonym: <i>Colletotrichum capsici</i> (Syd.) E.J. Butler & Bisby	Farr and Rossman, 2015; PestID, 2015
<i>Coniothecium citri</i> McAlpine	CASI, 1994 Listed as non-reportable PestID, 2015
<i>Corioloropsis occidentalis</i>	Farr and Rossman, 2015; PestID, 2015
<i>Corticium centrifugum</i> (Lév.) Bres. Synonym: <i>Fibulorhizoctonia centrifuga</i> (Lév.) G.C. Adams & Kropp	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Corticium rolfsii</i> Curzi	See <i>Athelia rolfsii</i>
<i>Corticium salmonicolor</i> Berk. & Broome Syn.: <i>Erythrimum salmonicolor</i> Berk. & Broome) Burds	See <i>Phanerochaete salmonicolor</i>
<i>Crinula caliciiiformis</i> Fr. Teleomorph: <i>Holwaya mucida</i> (Schulz -er) Korf & Abawi,	Freire, 1978; Freire, 2005; Farr and Rossman, 2015; Mendes and Urben, 2013; Ruch, 2004 Non-actionable based on distribution
<i>Cylindrocladium citri</i> (H. Fawc. & L.J. Klotz) Boedijn & Reitsma. ≡ <i>Calonectria citri</i> (H.S. Fawc. & Klotz) L. Lombard, M.J. Wingf. & Crous	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Curvularia geniculata</i> (Tracy & Earle) Boedijn	Lumyong et al., 2003; Mankin, 1969; Huguenin, 1966, PestID, 2015
<i>Curvularia lunata</i> (Wakker) Boedijn	Farr and Rossman, 2015; PestID, 2015
<i>Daldinia concentrica</i> (Bolton) Syn; <i>Hypoxylon concentricum</i> (Bolton: Fr.) Grev.	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Daldinia eschscholzii</i> (Ehrenb.)	Farr and Rossman, 2015; Rao, 1969 Non-actionable based on distribution

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<i>Diaporthe arctii</i> (Lasch) Nitschke	CABI, 2012; Farr and Rossman, 2015; MAPA, 2012; PestID, 2015
<i>Diaporthe citri</i> F.A. Wolf [Anamorph: <i>Phomopsis citri</i> H.Fawc. non (Sacc.) Traverso & Spessa]	CABI, 2012; Farr and Rossman, 2015; MAPA, 2012; Mendes and Urben, 2013; PestID, 2015
<i>Diaporthe faginea</i> (Curr.) Sacc. Syn: = <i>Diaporthe medusaea</i> Nitschke [Anamorph: <i>Phomopsis rudis</i> (Fr.: Fr.) Höhn.]	Mendes and Urben, 2013; de Melo and Andrade, 2007 ; Farr and Rossman, 2015; PestID, 2015
<i>Dothiorella gregaria</i> Sacc. [Teleomorph: <i>Botryosphaeria ribis</i> Grossenb. & Duggar]	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Dothidea tetraspora</i> Berk. & Broome var. <i>citricola</i> Sacco Synonym: <i>Dothidea collecta</i> (Schwein.) Ellis & Everh.	CASI, 1994; Farr and Rossman, 2015- as <i>D. collecta</i> (see Ellis, 1892 for synonymy) Non-actionable based on distribution
<i>Elsinoë fawcetti</i> (Bitancourt & Jenk.) [Anamorph: <i>Sphaceloma fawcettii</i> var. <i>fawcettii</i> Jenkins]	CABI, 2012; Farr and Rossman, 2015; MAPA, 2012; Mendes and Urben, 2013; PestID, 2015
<i>Erysiphe quercicola</i> S. Takam. & U. Braun [Anamorph: <i>Oidium mangiferae</i> Berthet]	PestID, 2015
<i>Erythrimum salmonicolor</i> (Berk. & Broome) Burdsall [= <i>Corticium salmonicolor</i> Berk. & Broome; anamorph: <i>Necator decret</i> Masee]	See <i>Phanerochaete salmonicolor</i>
<i>Eutypa lata</i> (Pers.: Fr.) Tul. & C. Tul.	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Eutypella citricola</i> Speg	Farr and Rossman, 2015; Hanlin, 1992; Mendes and Urben, 2013 Non-actionable based on distribution
<i>Eutypella leprosa</i> (Pers. ex Fr.) Berl.	Mendes and Urben, 2013; Diaz et al., 2011; Farr and Rossman, 2015; Vasilyeva and Stephenson, 2006; Trouillas et al., 2010 Non-actionable based on distribution
<i>Fusarium concolor</i> Reink	CASI, 1994; Farr and Rossman, 2015; Roberts, 1986 Non-actionable based on distribution
<i>Microdochium dimerum</i> (Penz.) Arx Syn: <i>Fusarium dimerum</i> Penz.	Farr and Rossman, 2015; Schroers, 2009 Non-actionable based on distribution
<i>Fusarium fujikuroi</i> Nirenberg ≡ <i>Gibberella fujikuroi</i> (Sawada) Ito	Farr and Rossman, 2015; PestID, 2015
<i>Fusarium lateritium</i> Nees: Fr. [Teleomorph: <i>Gibberella baccata</i> (Wallr.) Sacc.]	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Fusarium moniliforme</i> J. Sheld.	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Fusarium orthoceras</i> Appel & Wollenw	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Fusarium oxysporum</i> f. sp. <i>vasinfectum</i> (G.	Farr and Rossman, 2015; PestID, 2015

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F.ATK.) W. C. Snyder & H. N. Hansen	
<i>Fusarium oxysporum</i> var. <i>aurantiacum</i> (Link) Wollenw.	CASI, 1994; Farr and Rossman, 2015 Non-actionable based on distribution
<i>Fusarium oxysporum</i> (Schlechtendahl) f. sp. <i>citri</i>	Farr and Rossman, 2015; PestID, 2015
<i>Fusarium roseum</i> Link: Fr.	Farr and Rossman, 2015; PestID, 2015
<i>Fusarium sambucinum</i> Fuckel Teleomorph: <i>Gibberella pulicaris</i> (Fr.: Fr.) Sacc.	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Fusarium scirpi</i> Lamb. et Fautr.	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Fusarium solani</i> (Mart.) Sacc. [Teleomorph: <i>Haematonectria haematococca</i> (Berk. & Broome) Samuels & Rossman]	PestID, 2015
<i>Galactomyces geotrichum</i> (E. E. Butler & L. J. Petersen) Redhead & Malloch [Anamorph: <i>Geotrichum candidum</i> Link]	Farr and Rossman, 2015; MAPA, 2012; Mendes and Urben, 2013; PestID, 2015
<i>Ganoderma applanatum</i> (Pers.) Pat. [= <i>Elfvigia applanata</i> (Person) Karsten]	PestID, 2015
<i>Ganoderma lucidum</i> (Curtis) P. Karst.	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013 Non-actionable based on distribution
<i>Geotrichum candidum</i> Link (Saccharomycetes: Saccharomycetales)	Farr and Rossman, 2015; PestID, 2015
<i>Geotrichum citri-aurantii</i> (Ferraris) E.E. Butler	Farr and Rossman, 2015 The genera is not actionable PestID, 2015
<i>Gibberella avenacea</i> R.J. Cook; [Anamorph: <i>Fusarium avenaceum</i> (Fr.: Fr.) Sacc.]	CASI, 1994; Farr and Rossman, 2015; PestID, 2015
<i>Gibberella baccata</i> (Wallr.) Sacc. Anamorph: <i>Fusarium lateritium</i> Nees : Fr.	Farr and Rossman, 2015; Mendes and Urben, 2013; Okalebo et al., 2011; PestID, 2015
<i>Gibberella subglutinans</i> (E. Edwards) P.E. Nelson, Toussoun & Marasas [Anamoprph: <i>Fusarium subglutinans</i> (Wollenw. & Reinking) P.E. Nelson, Toussoun & Mara]	PestID, 2015
<i>Gliocladium roseum</i> Bainier	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Globisporangium debaryanum</i> (R. Hesse) Uzuhashi, Tojo & Kakish <i>Pythium debaryanum</i> (Auct. non.) R. Hesse	Manoch et al., 1986; Mueller and Sinclair, 1986; Peregrine and Ahmad, 1982; PestID, 2015
<i>Globisporangium splendens</i> (Hans Braun) Uzuhashi, Tojo & Kakish. Synonym: <i>Pythium splendens</i> Hans Braun)	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Gloeodes pomigena</i> (Schwein.) Colby	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Gloeosporium citricola</i> Cooke & Masee	see <i>Colletotrichum gloeosporioides</i>

≡ <i>Gloeosporium spegazzinii</i> Sacc.	
<i>Gloeosporium foliicolum</i> Nishida Synonym: <i>Colletotrichum coccodes</i> (Wallr.) S. Hughes	CASI, 1994; Farr and Rossman, 2015 No reportable as <i>Colletotrichum coccodes</i> PestID, 2015
<i>Gloeosporium limetticola</i> R.E. Clausen	Current name: <i>Glomerella cingulata</i> (Stoneman) Spauld. & H. Schrenk, in Schrenk & Spaulding Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Glomerella cingulata</i> (Stoneman) Spauld. & H. Schrenk [Anamorph: <i>Colletotrichum gloeosporioides</i> (Penz.) Penz. & Sacc. in Penz.]	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Guignardia bidwellii</i> (Ellis) Viala & Ravaz [Anamorph: <i>Phyllosticta ampelicida</i> (Engelm) Aa.]	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Guignardia mangiferae</i> (A. J. Roy) [Anamorph: <i>Phyllosticta apitalensis</i> = <i>Phoma citricarpa</i> McAlpine var. <i>mikan</i> Hara]	CABI, 2012; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Haematonectria haematococca</i> (Berk. & Broome) Samuels & Rossman. Syn: ≡ <i>Nectria haematococca</i> Berk. & Broome Anamorph: <i>Fusarium solani</i> (Mart.) Sacc	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Haematonectria ipomoeae</i> Halst.) Samuels & Nirenberg	Farr and Rossman, 2015; French, 1989 Non-actionable based on distribution
<i>Hendersonia citri</i> McAlpine	CASI, 1994; Genus <i>Hendersonia</i> is non-reportable PestID, 2015
<i>Hendersonia socia</i> McAlpine	CASI, 1994 Genus <i>Hendersonia</i> is non-reportable PestID, 2015
<i>Hypoxylon serpens</i> (Pers.: Fr.) J. Kickx fil.	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Khuskia (Nigrospora) oryzae</i> H.J. Huds.	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Lasiodiplodia theobromae</i> (Pat.) Griffon & Maubl. [= <i>Botryodiplodia theobromae</i> Pat.; Teleomorph: <i>Botryosphaeria rhodina</i> (Berk & M.A. Curtis) Arx]	Farr and Rossman, 2015; PestID, 2015
<i>Macrophomina phaseolina</i> (Tassi) Goid [Syn: <i>M. phaseoli</i> (Maubl.) F. S. Ashby]	Farr and Rossman, 2015; PestID, 2015
<i>Mucor alboater</i> Naumov, Synonym: <i>Mucor piriformis</i> A. Fisch.	CASI, 1994; Farr and Rossman, 2015-under <i>M. piriformis</i> The genera is not actionable PestID, 2015
<i>Mycena citricolor</i> (Berk. & Curtis)	CABI, 2012; PestID, 2015
<i>Mycosphaerella citri</i> (Whiteside) [Anamorph: <i>Stenella citri-grisea</i> (F. E. Fisher)]	Farr and Rossman, 2015; Mendes and Urben, 2013 The genera belong to the Capnodiaceae

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	family causing sooty mold (Index Fungorum, 2013c; Farr and Rossman, 2015) PestID, 2015
<i>Mycosphaerella horii</i> Hara	Farr and Rossman, 2015; MAPA, 2012; CABI, 2012; Mendes and Urben, 2013; PestID, 2015
<i>Mycosphaerella lageniformis</i> (Rehm)	Mendes and Urben, 2013; Farr and Rossman, 2015; PestID, 2015
<i>Mycosphaerella pinodes</i> (Berk. & Bloxam) Vestergr. (= <i>Didymella inodes</i> (Berk. & Bloxam) Petr.; anamorph: <i>Ascochyta pinodes</i> L.K. Jones)	Farr and Rossman, 2015; PestID, 2015
<i>Mycosphaerella tassiana</i> (de Not.) [= <i>Cladosporium herbum</i>]	Farr and Rossman, 2015; PestID, 2015
<i>Myrothecium roridum</i> Tode:Fr.	PestID, 2015
<i>Myrothecium verrucaria</i> (Alb. & Schwein.)	Farr and Rossman, 2015; PestID, 2015
<i>Nectria haematococca</i> (Berk & Broome) Samuels & Rossman [Anamorph: <i>Fusarium solani</i> (Mart.) Sacc.]	Buangsuwon et al., 1978, cited in Richardson, 1990; Anonymous, 1960; White and Downing, 1947; PestID, 2015
<i>Nematospora coryli</i> Peglion [= <i>Eremothecium coryli</i> (Peglion) Kurtzman]	Farr and Rossman, 2015; PestID, 2015
<i>Neofusicoccum parvum</i> (Pennycook & Samuels) Crous, Ippers & A.J.L. Phillips, ≡ <i>Fusicoccum parvum</i> Pennycook & Samuels, [Teleomorph: <i>Botryosphaeria parva</i> Pennycook & Samuels]	PestID, 2015
<i>Neosetophoma samararum</i> (Desm.) Gruyter, Aveskamp & Verkley Syn: ≡ <i>Phoma samararum</i> Desm.	Chile Diaz et al., 2011, Adesemoye, 2011; Farr and Rossman, 2015 Non-actionable based on distribution
<i>Nothopatella lecanidium</i> Sacc. Synonym: <i>Botryodiplodia lecanidion</i> (Speg.) Petr. & Syd.	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Oidium citri-aurantii</i> Ferraris; Synonym: <i>Geotrichum citri-aurantii</i> (Ferraris) E.E. Butler	Farr and Rossman, 2015; PestID, 2015
<i>Oidium tingitaninum</i> (C. N. Carter)	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Ophionectria coccicola</i> (Ellis & Everh.) Berk. & Vogl. Synonym: <i>Podonectria coccicola</i> (Ellis & Everh.) Petch	Farr and Rossman, 2015; PestID, 2015
<i>Ovatisporangium vexans</i> (de Bary) Uzuhashi, Tojo & Kakish. Synonym: <i>Pythium vexans</i> de Bary	Farr and Rossman, 2015; PestID, 2015
<i>Penicillium citrinum</i> Sopp Syn: <i>Penicillium steckii</i> K.M. Zalessky	Farr and Rossman, 2015 The genera is not actionable PestID, 2015
<i>Penicillium crustaceum</i> Stoll	Farr and Rossman, 2015; Mendes and Urben, 2013 The genera is not actionable PestID, 2015
<i>Penicillium digitatum</i> (Pers.:Fr.) Sacc.	Farr and Rossman, 2015

	The genera is not actionable PestID, 2015
<i>Penicillium diversum</i> Raper & Fennell	Farr and Rossman, 2015 Genus is non-reportable PestID, 2015
<i>Penicillium expansum</i> Link	Farr and Rossman, 2015; CABI, 2012; MAPA, 2012; Mendes and Urben, 2013 The genera is not actionable PestID, 2015
<i>Penicillium fructigenum</i> Takeuchi	Genus is non-reportable PestID, 2015
<i>Penicillium italicum</i> (Wehmer)	Farr and Rossman, 2015 The genera is not actionable PestID, 2015
<i>Penicillium ulaiense</i> (Hseih, Su & Tzean) Eurotiales]	CABI, 2012; Farr and Rossman, 2015; PestID, 2015
<i>Penicillium viridicatum</i> Westl.	CASI, 1994; Farr and Rossman, 2015 The genera is not actionable PestID, 2015
<i>Peniophora cinerea</i> (Basidiomycetes: Russulales)	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Periconia byssoides</i> (Pers. & Schweinitz)	Carrillo, 1995; Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Pestalotia guepini</i> Desm.	CASI, 1994; Farr and Rossman, 2015 Non-actionable based on distribution
<i>Pestalotiopsis neglecta</i> (Thüm.) Steyaert Synonym: <i>Pestalotia neglecta</i> Thüm.	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Phanerochaete salmonicolor</i> (Berk. & Br.) Juhlich Syn: ≡ <i>Erythricium salmonicolor</i>) ≡ <i>Corticium salmonicolor</i> Berk. & Broome	CABI, 2012; Farr and Rossman, 2015; Wang et al., 2008; Cooke, 1982; Peregrine and Ahmad, 1982 Non-actionable based on distribution
<i>Phoma exigua</i> (Sacc)	MAPA, 2012; Farr and Rossman, 2015; CABI, 2012; Mendes and Urben, 2013 Non-actionable based on distribution
<i>Phoma pinodella</i> (L.K. Jones) Morgan- Jones & K.B. Burch (= <i>scochyta pinodella</i> L.K. Jones; <i>P. medicaginis</i> Malbr. & Roum. var. <i>pinodella</i> (L.K.Jones) Boerema)	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Phyllosticta adusta</i> Ellis & G. Martin	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Phyllosticta aurantiicola</i> (Berk. & Cooke) Sacc.	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Phyllosticta capitalensis</i> Henn.	Farr and Rossman, 2015; Wellman, 1977; PestID, 2015
<i>Phyllosticta erratica</i> Ellis & Everh.	Farr and Rossman, 2015; Glienke et al., 2011; PestID, 2015
<i>Phyllosticta hesperidearum</i> (Cattaneo) Penz.	PestID, 2015
<i>Phyllosticta longispora</i> McAlpine	Farr and Rossman, 2015; Wellman, 1977; PestID, 2015
<i>Phymatotrichum omnivorum</i> (Duggar)	CABI, 2012; CASI, 1994 Non-actionable based on distribution

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<i>Phytophthora capsici</i> Leonian	Farr and Rossman, 2015; PestID, 2015
<i>Phytophthora cinnamomi</i> Rands	CABI, 2012; Farr and Rossman, 2015; Forzza et al., 2010; PestID, 2015
<i>Phytophthora citricola</i> (Sawada)	CABI, 2012; Farr and Rossman, 2015; Forzza et al., 2010; PestID, 2015
<i>Phytophthora citrophthora</i> (R.E. Sm. & E.H. Sm.) Leonian	CABI, 2012; Farr and Rossman, 2015; Forzza et al., 2010; PestID, 2015
<i>Phytophthora cryptogea</i> (Pethybr. & Laff.)	CABI, 2012; Farr and Rossman, 2015; MAPA, 2012; Forzza et al., 2010, Mendes and Urben, 2013; PestID, 2015
<i>Phytophthora hibernalis</i> Carne	Vial and Latorre, 2004; Forzza et al., 2010; Farr and Rossman, 2015; PestID, 2015
<i>Phytophthora inundata</i> Brasier, Sánch. Hern. & S.A. Kirk	Farr and Rossman, 2015; Ho et al., 2006; Pakurnan et al., 2010 Non-actionable based on distribution
<i>Phytophthora nicotianae</i> (Breda de Haan) [= <i>P. nicotianae</i> var. <i>arasitica</i> (Dastur) G. M. Waterhouse]	Vial et al., 2006; PestID, 2015
<i>Phytophthora palmivora</i> var. <i>palmivora</i> (E. J. Butler)	CABI, 2012; Farr and Rossman, 2015; MAPA, 2012; Forzza et al., 2010, Mendes and Urben, 2013; PestID, 2015
<i>Phytophthora syringae</i> (Berk.) Kleb. 1909 [= <i>Phytophthora cactorum</i> (Lebert & Cohn) J. Schrot.]	Farr and Rossman, 2015; PestID, 2015; Wellman, 1977
<i>Pithomyces sacchari</i> (Speg.) M.B. Ellis	Farr and Rossman, 2015; PestID, 2015
<i>Pleospora herbarum</i> (Pers.: Fr.) Rabenh.	Farr and Rossman, 2015; PestID, 2015
<i>Podonectria coccicola</i> (Ellis & Everh.) Petch. Syn: <i>Ophinctria coccicola</i> (Ellis & Everh.) Berl. & Voglino	CABI, 2012; Farr and Rossman, 2015; Forzza et al., 2010; PestID, 2015
<i>Podoxyphium citricola</i> Bat., Vittal & Cif.	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Pseudocochliobolus pallescens</i> Tsuda & Ueyama, 1983	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Pseudomonas syringae</i> pv. <i>syringae</i>	Moorman, 2015 Non-actionable based on distribution
<i>Pythium aphanidermatum</i> (Edson) Fitzp. Syn: ≡ <i>Nematosporangium aphanidermatum</i> (Edson) Fitzp.	Briceño and Besoain, 2004; PestID, 2015
<i>Pythium debaryanum</i> (R. Hesse) Syn: ≡ <i>Globisporangium debaryanum</i> (R. Hesse) Uzuhashi, Tojo & Kakish.	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Pythium splendens</i> Hans Braun Syn: ≡ <i>Globisporangium splendens</i> (Hans Braun) Uzuhashi, Tojo & Kakish.	CABI, 2012; Farr and Rossman, 2015; Forzza et al., 2010; PestID, 2015

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<i>Pythium ultimum</i> (Trow)	Farr and Rossman, 2015; Forzza et al., 2010; PestID, 2015
<i>Pythium vexans</i> (de Bary)	Farr and Rossman, 2015; PestID, 2015
<i>Rhizoctonia solani</i> J. G. Kuhn [Teleomorph: <i>Thanatephorus cucumeris</i> (A.B. Frank) Donk]	See <i>Thanatephorus cucumeris</i>
<i>Rhizopus stolonifer</i> (Ehrenb.) Lind Syn.: <i>Rhizopus nigricans</i> Ehrenb.	The genera is not actionable PestID, 2015
<i>Rhytidhysterium rufulum</i> (Spreng.) Speg. ≡ <i>Tryblidiella rufula</i> (Spreng. : Fr.) Sacc	Abbot, 1931; CABI, 2012; Farr and Rossman, 2015; PestID, 2015
<i>Rigidoporus microporus</i> (Sw. : Fr.) Overeem Synonym: <i>Polyporus lignosus</i> Klotzsch	Farr and Rossman, 2015; PestID, 2015
<i>Rosellinia necatrix</i> (Prill) [Anamorph: <i>Dematophora necatrix</i> R. Hartig]	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Schizophyllum commune</i> Fr.:Fr.	CABI, 2012; Forzza et al., 2010; Farr and Rossman, 2015; PestID, 2015
<i>Schizothyrium pomi</i> (Mont. & Fr.) Arx (synonym: <i>Leptothyrium pomi</i> (Mont. & Fr.) Sacc.)	Reinking, 1921; Bugwood, 2011; French, 1989; PestID, 2015
<i>Sclerotinia sclerotiorum</i> (Lib.) de Bary [Anamorph: <i>S. varium</i> Pers. Fr.]	PestID, 2015
<i>Sclerotium rolfsii</i> Sacc., [Teleomorph: <i>Athelia rolfsii</i> (Curzi) Tu & Kimbr.]	See <i>Athelia rolfsii</i>
<i>Scolecopeltis tropicalis</i> Speg.	Farr and Rossman, 2015 The genera is not actionable PestID, 2015
<i>Septoria citri</i> (Pass).	Mendes and Urben, 2013; PestID, 2015
<i>Septoria limonum</i> (Pass).	Farr and Rossman, 2015; PestID, 2015 ; Wellman, 1977;
<i>Septosporium brasiliense</i> Bat.	Farr and Rossman, 2015; PestID, 2015
<i>Septobasidium albidum</i> Pat.	Mendes and Urben, 2013 The genera is not actionable PestID, 2015
<i>Septobasidium paulense</i> Henn.	Mendes and Urben, 2013 The genera is not actionable PestID, 2015
<i>Septobasidium pseudopedicellatum</i> Burt,	Mendes and Urben, 2013 The genera is not actionable PestID, 2015
<i>Septobasidium saccardinum</i> (Rangel) Marchion.	Klotz, 1978; MAPA, 2012; Mendes and Urben, 2013 The genera is not actionable PestID, 2015
<i>Spegazzinia tessarhtra</i> (Berk. & Curt.) Sacc. [= <i>S. ornata</i> Sacc.]	Mendes and Urben, 2013; PestID, 2015
<i>Sphaeropsis tumefaciens</i> Hedges	Farr and Rossman, 2015; Wellman, 1977; PestID, 2015
<i>Sporobolomyces roseus</i> Kluyver & Niel	Farr and Rossman, 2015; Klotz, 1978; Mendes and Urben, 2013;PestID, 2015
<i>Stemphylium botryosum</i> Wallr.	CASI, 1994; Farr and Rossman, 2015;

	PestID, 2015
<i>Stereum albobadium</i> (Schwein.)	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Stictis radiate</i> (Linnaeus)	Farr and Rossman, 2015 Non-actionable based on distribution
<i>Stomiopeltis citri</i> Bitanc	PestID, 2015
<i>Stomiopeltis minor</i> (Bitanc.) Luttr.	Mendes and Urben, 2013; The genera is not actionable PestID, 2015
<i>Thanatephorus cucumeris</i> (A.B. Frank) Donk [Anamorph: <i>Rhizoctonia solani</i> J. G. Kuhn	Farr and Rossman, 2015; Mendes and Urben, 2013; PestID, 2015
<i>Thielaviopsis basicola</i> (Berk. & Broome) Farraris	See <i>Chalara elegans</i>
<i>Trametes villosa</i> (Fr.: Fr.) [= <i>Polyporus pinsitus</i>]	Farr and Rossman, 2015; PestID, 2015
<i>Trichoderma viride</i> Pers. : Fr. Synonyms: <i>Trichoderma glaucum</i> E.V. Abbott, <i>Trichoderma lignorum</i> (Tode) Harz	Farr and Rossman, 2015; PestID, 2015
<i>Tylenchus semipenetrans</i> Cobb	Farr and Rossman, 2015; PestID, 2015 ; Timmer et al., 2000
<i>Xiphinema vuittenezi</i> Luc, Lima, Weischer and Flegg	Klein Koch and Waterhouse, 2000; PestID, 2015
BACTERIA	
<i>Acidovorax avenae subsp. avenae</i>	PestID, 2015
<i>Agrobacterium tumefaciens</i> (Smith & Town.) Conn	CABI, 2012; PestID, 2015
<i>Burkholderia andropogonis</i>	PestID, 2015
<i>Erwinia rhapontici</i> (Millard 1924) Burkholder, 1948	Duan et al., 2009 Non-actionable based on distribution
<i>Pantoea agglomerans</i> (Beijerinck) Gavini et al. [Syn.: <i>Erwinia lathyri</i> (Manns & Taubenhau) Magrou]	PestID, 2015
<i>Pseudomonas syringae</i> pv. <i>Syringae</i> van Hall	CABI, 2012; PestID, 2015
<i>Pseudomonas viridiflava</i> (Burkholder) Dowson	CMI, 1988;; PestID, 2015
<i>Rhizobium radiobacter</i> (Beijerinck & van Delden) Young et al. [= <i>Agrobacterium tumefaciens</i> (Smith & Town.) Conn]	CABI, 2012; PestID, 2015
<i>Rhizobium rhizogenes</i> (Riker et al.) Young et al.	CABI, 2012; PestID, 2015
<i>Xanthomonas campestris</i> (Pammel)	CABI, 2012; PestID, 2015
PHYTOPLASMAS AND SPIROPLASMAS	
<i>Spiroplasma citri</i> (Saglio, et al.)	CMI, 1993; Ramallo, 1970; Timmer et al., 2000 Non-actionable based on distribution
VIRUSES AND VIRUS-LIKE AGENTS	
<i>Apple stem grooving virus</i>	James and Hadidi, 1998 Non-actionable based on distribution

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Citrus bark cracking viroid (previously known as Citrus viroid IV)	Cao et al., 2010; Duran-Villa et al., 1988; Kunta et al., 2007 Non-actionable based on distribution
<i>Citrus cachexia viroid</i> (= <i>Xyloporosis</i>)	CABI, 2012 Non-actionable based on distribution
<i>Citrus dwarfing viroid</i> (CDVd)	CMI, 1972; Duran-Vila et al., 2002; Timmer et al., 2000 Non-actionable based on distribution
<i>Citrus exocortis viroid</i> [Pospiviroidae: pospiviroid]	Eiras et al., 2010; Vidalakis et al., 2010 Non-actionable based on distribution
<i>Citrus leaf rugose ilarvirus</i> (= Citrus crinkly leaf ilarvirus) [Bromoviridae: Ilavirus] Citrus psorosis virus complex	Brunt et al., 1996; CABI, 2012; MAPA, 2012; Timmer et al., 2000 Non-actionable based on distribution
Citrus ringspot virus (Syn.: Psorosis A, B)	Brunt et al., 1996; CABI, 2012; MAPA, 2012; Timmer et al., 2000 Non-actionable based on distribution
<i>Citrus tatter leaf virus</i>	Alfieri et al., 1994; Timmer et al., 2000 Non-actionable based on distribution
<i>Citrus tristeza closterovirus</i>	Besoain et al., 2004 Non-actionable based on distribution
<i>Citrus variegation ilarvirus</i> Citrus psorosis virus complex	Brunt et al., 1996
<i>Citrus vein enation</i> – woody gall associated <i>luteovirus</i>	CABI, 2012; MAPA, 2012; Timmer et al., 2000 Non-actionable based on distribution
<i>Hassaku dwarf virus</i>	Strain of Citrus tristeza virus (Tsuchizaki et al., 1978)
<i>Hop stunt viroid</i> (HSVd)	Klein Koch and Waterhouse, 2000 Non-actionable based on distribution
<i>Natsudaidai dwarf virus</i>	Eiras et al., 2010; Eiras et al., 2013; Eastwell and Ocamb, nd; Sano and Shikata, 1988 Non-actionable based on distribution
<i>Navel orange infectious mottling virus</i> <i>Strawberry latent ringspot virus</i>	CABI, 2012, Bazan de Segura, 1972; Timmer et al., 2000 Non-actionable based on distribution