Importation of fresh pepper fruit with short stalk, *Capsicum annuum* L., *Capsicum baccatum* L., *Capsicum chinense* Jacq., *Capsicum frutescens* L. and *Capsicum pubescens* Ruiz & Pav., from Colombia into the Continental United States

A Qualitative, Pathway-Initiated Risk Assessment

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Executive Summary

This pest risk assessment was prepared to examine plant pest risks associated with the importation of fresh *Capsicum annuum* L. fruits with short stalk into the continental United States from the Republic of Colombia, South America. We assessed the pest risk for *C. annuum*, *C. frutescens*, *C. baccatum*, *C. chinense* and *C. pubescens* due to some taxonomic uncertainty regarding the species status. We prepared a pest risk assessment based on documents submitted by the Colombian Ministry for Agriculture and Rural Development, the Colombian Agricultural Institute (ICA), pest interception records of the United States Department of Agriculture, scientific literature, and opinions of experts in pepper production.

We identified five quarantine pests that are likely to follow the pathway of fresh peppers from Colombia:

Type	**Taxonomy**	**Pest**	**Pest risk potential**
Arthropods	Diptera: Tephritidae	*Anastrepha fraterculus* Wiedemann	High
		Ceratitis capitata Wiedemann	High
	Lepidoptera: Noctuidae	*Copitarsia decolora* (Guenée)	High
	Lepidoptera: Pyralidae	*Neoleucinodes elegantalis* (Guenée)	Medium
Fungi	Urediniomycetes: Uredinales	*Puccinia pampeana* Speg.	High

Specific phytosanitary measures beyond port-of-entry inspection are strongly recommended for pests with High pest risk potentials, and may be necessary for pests with Medium pest risk potential. Detailed examination and choice of appropriate phytosanitary measures to mitigate pest risk are part of the pest risk management phase within APHIS and are not addressed in this document.

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1. Introduction

1.1 Background

This risk assessment was prepared by the USDA, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Plant Epidemiology and Risk Analysis Laboratory in response to a request for importation of commercially produced *Capsicum* species (*C. annuum, C. baccatum, C. chinense, C, frutescens,* and *C. pubescens*) from Colombia into the continental United States. It was based on a draft risk assessment submitted by the "Instituto Colombiano Agropecuario" (ICA) in Bogotá, Colombia.

The International Plant Protection Convention (IPPC) provides guidance for conducting pest risk analyses. The methods used here are consistent with guidelines provided by the IPPC, specifically the International Standard for Phytosanitary Measures on "Pest Risk Analysis for Quarantine Pests" (IPPC, 2016b). The use of biological and phytosanitary terms is consistent with definitions in the "Glossary of Phytosanitary Terms and the Compendium of Phytosanitary Terms" (IPPC, 2016a).

Three stages of pest risk analysis are described in the international standards: Stage 1, Initiation; Stage 2, Risk Assessment; and Stage 3, Risk Management. This document satisfies the requirements of Stages 1 and 2. This is a qualitative risk analysis; estimates of risk are expressed in terms of High, Medium, and Low, based on the combined ratings for specified risk elements (PPQ, 2000) related to the likelihood and consequences of pest introduction on imported peppers from Colombia. The identification of sanitary and phytosanitary measures to mitigate risks, if any, is undertaken as part of Stage 3 (Risk Management). Other than listing possible mitigation options for the pests of concern, we did not address risk management in this document.

1.2. Commodity information

1.2.1. Taxonomy

The taxonomy for the genus *Capsicum* (Solanaceae) is complex and still has not been defined with regard to its limits. The domestic species are *C. annuum, C. baccatum, C. frutescens, C. chínense* and *C. pubescens* (Vallejo et al, 2006; Vallejo and Estrada, 2004). In spite of the morphological variability, *C. annuum* is the species that is most cultivated at the commercial level around the world (Bosland and Votava, 2000).

1.2.2. Origin and distribution

Colombia is the center of origin for some species of genus *Capsicum*. Archeological and anthropological evidence points to Peru and Bolivia as the main centers of origin for *Capsicum* spp., with subsequent introduction into all parts of the Americas via bird dispersal and crop exchange among indigenous communities. A close relationship was likewise found with the Mayan and Aztec cultures in Central America and Mexico (Ligarreto et al.¸2004; Vallejo et al., 2006). The Amazon region is considered to be the center of origin for the species complex of *C. annuum, C. chinense and C. frutescens* (Ligarreto et al., 2004).

The distribution of domesticated species of *Capsicum* has not been determined in the native range of the genus. Nonetheless, wild-type species are distributed throughout the Andes mountain range from Venezuela to Argentina and Brazil (Vallejo et al., 2006).

1.3. Production in Colombia

Pepper production in Colombia was 48,599 metric tons in 2009 on a total of 2,456 ha (6,068.9 acres) planted. The region with the highest production recorded was Santander (16,331 metric tons) followed by Antioquia (10,868 metric tons), Valle del Cauca (9,090 metric tons), Cundinamarca (3,885 metric tons), and Huila (3,180 metric tons) (MADR, 2011) (Figure 1).

Most pepper production in Colombia occurs from 0 to 1600 meters above sea level; optimal temperatures are 18 to 24ºC. Optimal soils for the production of *Capsicum* spp. are sandy clay loam to silt loam, with a pH range of 5.8 to 7, with high organic matter. *Capsicum* spp. production requires 600 to 1250 mm of annual precipitation (Ligarreto et al, 2004).

Capsicum spp. are produced in three ways in Colombia (ALNICOLSA. 2009). The first system corresponds to traditional, small farms that are 2000 m^2 (0.49 acre) or smaller with basic technology for cultivars, irrigation systems, and fertilization. The second system uses modern cultivars, soil covering, and localized drip irrigation. The third system deals with covered or greenhouse production with hybrid cultivars, in soil or hydroponics, and under technologies for environmental condition management (relative humidity, lighting, temperature, irrigation).

Colombia has 157 varieties of *Capsicum annuum* authorized by ICA for marketing and planting purposes (ICA, 2011). Most of these begin production between 80 and 90 days after planting and have a growing season between 180 and 240 days depending on the variety. The varieties of *C. annuum* mainly marketed in Colombia are hybrid pimento Robledo and Natalie (Coelxagro, 2011).

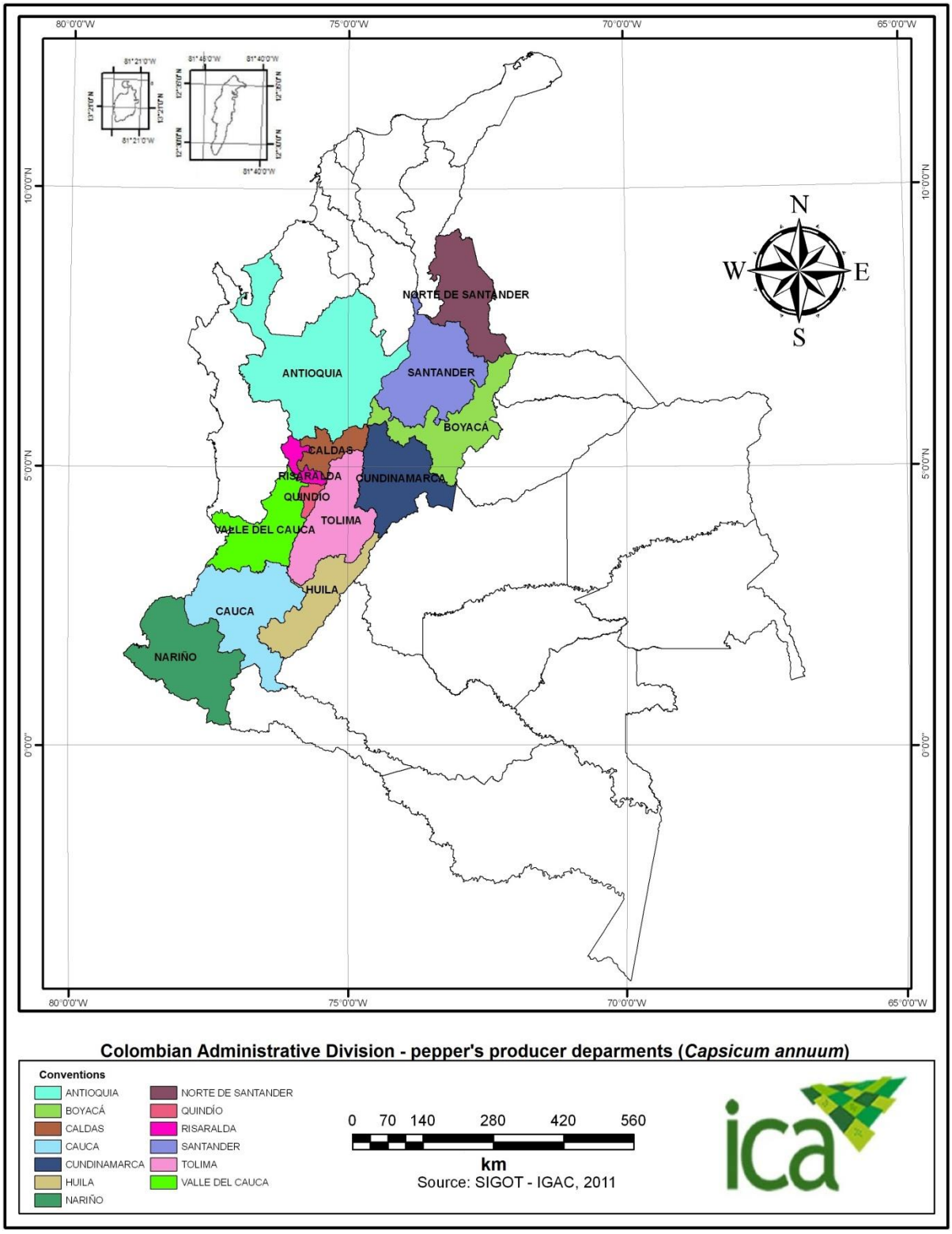

Figure 1. Pepper producer regions in Colombia.

1.4. Standard harvest, post-harvest and packinghouse procedures

The following items are required for pepper harvesting processes in Colombia (C.I. Colexagro, 2011; Hortalizas Gourmet, 2011; Ligarreto et al., 2004; Vallejo and Estrada, 2004; NTC 3634-1ICONTEC, 2001) (Also see Appendix A).

1.4.1. Standards for harvesting

- Personnel working at harvest need to be trained and wear clean and appropriate clothes
- Fruits must come from orchards with good nutrition schemes for export
- Pepper fruits are harvested when physiological maturation is reached (harvest indicator: shiny epidermis, firm consistency, and change in primary color from 20 to 30%)
- Harvested fruits should be dry and kept at low humidity to avoid fungal and bacterial infections, and mechanical damage
- Fruits are manually harvested by cutting the peduncle (1 cm) using scissors. The scissors are disinfected with each cutting
- Harvested fruits must be homogeneous in color
- Damaged fruits (insect or mechanical damage) are culled
- The fruits harvested are pre-selected in the field by size and color
- Fruits are placed in clean plastic crates. Each fruit is labeled with orchard location data
- The fruits are transported in clean, ventilated, and covered trucks

1.4.2. Standards for a packinghouse

- Packinghouse must be located near orchards
- The floor and door must be washed
- Selection tables must be stainless steel
- Only authorized personnel have access
- Pest controls must be in place

1.4.3. Standards for post-harvest practices

- All fruits are weighed
- All fruits are visually inspected. Imperfect fruits (e.g. color, insect damage, mechanical damage, rot) and overripe fruits are discarded
- The fruits with standard quality are cleaned with a clean cloth
- The fruits are graded based on color, size and weight. Each box must contain fruits with same grading
- The fruits are packed either in 6kg or 10kg cardboard boxes. Boxes must be new, clean, ecologically aceptable, free of foreign material and perforated for air flow
- A traceable code is marked on each box. The code contains information about country of origin, packing company, net weight and product description.
- The 10 kg boxes are stacked at a maximum of 40 units and the 6 kg boxes are stacked at a maximum of 48 units. Shelves are treated in accordance with ISPM (NIMF) Standard No. 15
- Peppers are stored at optimum temperature of 7.5ºC

- Peppers must be protected from microorganisms and damages during shipping. The peppers are anticipated to be shipped from Colombia to the United States via 6-hour non-stop flights.

2. Risk Assessment

2.1. Initiating Event: Proposed Action

This commodity-based, pathway-initiated assessment was prepared in response to a request made by the Colombian Agricultural Institute (ICA) (letter No. 20102102723; dated March 19, 2010) (ICA, 2010) to the USDA to authorize the importation of fresh pepper fruit grown in Colombia into the continental United States. The movement of fruits and vegetables from foreign countries, into the United States is regulated in 7 CFR §319.56. Currently, the entry of pepper from Colombia into the United States is not authorized.

2.2. Assessment of Weed Potential of Peppers, *Capsicum* spp.

The potential of the commodity to become a weed after it enters the United States was examined in this step, and a weed pest-initiated risk assessment was not conducted because the analysis did not indicate that the commodity had significant weed potential (Table 3).

Table 3. Assessment of the weed potential of *Capsicum* or pepper species (Solanaceae).

Scientific names, synonyms, and common names (NRCS 2009, 2010; NGRP, 2010). • *Capsicum annuum* L. (Syn.: *C. annuum* var. *annuum*, *C. annuum* var. *glabriusculum*) Bell pepper, sweet pepper, chili pepper, green pepper paprika, cayenne, ají, pimiento. • *C. baccatum* L. Ají, yellow ají, ají limon, ají mono, ají norteno; locoto. • *C. chinense* jacq. Bonnet pepper, datil pepper, habanero pepper, piri-piri pepper, Squash pepper, Yellow squash pepper, Rocotillo. • *C. frutescens* L. (Syn.: *C. fastigiatum* Blume; *C. annuum* L. var. *frutescens* (L.) Kuntze; *C. minimum*) Bird pepper; Cayenne pepper; Chili pepper; Tabasco pepper; Aji; Chile. • *C. pubescens* Ruiz. & Pav. (Syn.: *Brachistus lanceaefolius* Miers; *C. guatemalense* Bitter; *C. lanceaefolium* (Miers) Kuntze; *C. violaceum* Kunth.) Apple chile; Rocoto; Lacoto; Chile caballo.
Phase 1: Distribution in the United States • The genus *Capsicum* is widely cultivated in the United States as a commercial crop, and in dooryard gardens (Wiersema and Leon, 1999). • *C. annuum* is widely cultivated throughout the world and the United States (CABI, 2006; NRCS, 2010). • *C. baccatum* is a popular condiment in South America (Eshbaugh, 1993), but is not commercially grown in the United States. It likely occurs in private gardens. • *C. chinense* is cultivated in Brazil, Colombia and throughout the Caribbean (Bosland and Votava, 2000; NGRP, 2010). It is not known to be in the United States. • *C. frutescens* is distributed worldwide and cultivated in the United States (NRCS, 2008, 2010).

- *C. pubescens* is native to South America (Bosland and Votava, 2000).

Phase 2. Listed in the following references

	C. annuum	*C. baccatum* *C. frutescens*	*C. pubescens* *C. chinense*
Gunn and Ritchie, 1988; Holm et al., 1977; Holm et al., 1997; ISSG, 2009; USDA-APHIS-PPQ., 2006; Reed, 1977; Skinner et al., 2008; Weber, 2003; Wiersema, & León, 1999; WSSA, 2007	No	No	No
Holm et al., 1979; Randall, 2007	Yes	Yes	No
Randall, 2007; Swearingen, 2009.	Yes	No	No

Phase 3: Summary and Conclusions

- We found no evidence of invasive behavior by *C. pubescens* and *C. chinense*.
- Holm et al. (1979) report *C. baccatum* and *C. frutescens* as weeds of unknown importance for India, Jamaica, Trinidad and West Polynesia, but otherwise we found no evidence in the literature of invasive behavior.
- Randall (2007) called *C. annuum* the following: casual alien, cultivation escape, environmental weed, garden thug, naturalized and weed. Holm *et al*. (1979) include *C. annuum* as a weed of unknown importance in Australia and India. Sweringer (2009) reports *C. annuum* as invasive species in natural areas of Hawaii.

Because these species are cultivated in the United States, no weed risk assessment is necessary.

2.3. Previous Risk Assessments, Current Status, and Pest Interceptions

2.3.1. Previous Risk Assessments

APHIS has previously completed the following pest risk assessments for peppers in several countries (Table 4).

Table 4. Previous Risk Assessments

Year	Previous Risk Assessments
2009	Importation of Fresh Pepper – *Capsicum annuum* L., *Capsicum baccatum* L., *Capsicum chinense* Jacq, *Capsicum frutescens* L., and *Capsicum pubescens* Ruiz & Pav. – Fruit with Stems from Central America into the United States
2007	Importation of peppers, *Capsicum annuum* and *C. frutescens*, from Ghana into the Continental United States.
2005	Importation of fresh paprika pepper fruit (*Capsicum annuum* L. a*nnuum*) from the Republic of Korea into the Continental United States.
2004	Importation of Fresh Pepper Fruit with Stems (*Capsicum annuum* L., *C. frutescens* L., *C. baccatum* L., *C. pubescens* Ruiz & Pav., and *C. chinense* Jacq.) from Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua into the United States
2000	Importation of pepper (*Capsicum* spp.) fruit from New Zealand into United States.

Year	Previous Risk Assessments
1997	Importation of pepper fruits *Capsicum* spp., from Spain into United States.
1996	Importation of fresh pepper fruit, *Capsicum annuum* from Chile into the continental United States.

2.3.2. Current Status

The current status of related imports is shown in Table 5 (USDA-APHIS, 2010).

Table 5. Current status

Country	Port(s) of	Entry condition
Antigua and Barbuda, Australia (from Tasmania), Bahamas, Barbados, Belgium, Belize[1], Canada, Cayman Islands, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Israel (from Arava Valley)[2], Korea[3], Martinique, Montserrat, Netherlands, New Zealand[4], Nicaragua, Poland, Saint Barthelemy, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Spain (from Almeria and Alicante Provinces) and Trinidad and Tobago.	All ports	This commodity is subject to inspection at the port of entry and all general requirements of 7 CFR 319.56-3.
Chile	All ports	*Ceratitis capitata* (Wiedemann) free area.
Ghana	All ports	Under T105-a-2 Irradiation treatment.
Jamaica	All Ports	Consignments may or may not be precleared. If they are precleared, the consignment must be accompanied by a PPQ Form 203 signed by the APHIS inspector on site in Jamaica to validate foreign site preclearance. If the consignment was not precleared, REQUIRE T104-a-2.
Japan (From all areas other that Amami, Bonin, Ryukyu, Tokara, and Volcano Islands), and Korea	Guam & CNMI	This commodity is subject to inspection at the port of entry and all general requirements of 7 CFR 319.56-3.

[1] *Capsicum pubescens* is prohibited

[2] Additional declaration:"Stating that the peppers were "grown and shipped in accordance with 7CFR 319.56-24(b)".

[3] Additional declaration: "These peppers were grown in greenhouses in accordance with the conditions in 7 CFR 319.56-42"

[4] Additional declaration: "These peppers were grown in greenhouses in accordance with the conditions of 7CFR 319.56-32."

Country	Port(s) of	Entry condition
Mexico	All ports	Under T 105-a-1 Irradiation treatment.

2.3.3. Pest Interceptions

From 1985-2011, 1202 different species of pests were intercepted 27,807 times by APHIS on *Capsicum* spp. entering the United States (all pathways) (PestID, 2011). The most commonly intercepted pest families were Agromyzidae, Triozidae, Tephritidae, Noctuidae, Pseudococcidae, Lonchaeidae, Psyllidae, Aphididae, and Tortricidae. The most intercepted species was *Anthonomus eugenii* Cano (Coleoptera: Curculionidae). See Appendix A: Pest Interceptions on *Capsicum* spp. entering the U.S. (PestID, 2011).

Intercepted pests identified at family level or higher are present in the interception report (PestID, 2011), but are not included in the pest list (Table 6), because the genus of the intercepted organisms could not be determined. The pest list includes interceptions at genus level (e.g., *Diabrotica* sp.) only if they were from Colombia.

2.4. Pest Categorization - Identification of Pests of *Capsicum* spp. in Colombia

Below we list the pests associated with *C. annuum* and related species (*C. baccatum*, *C. chinense*, *C. frutescens*, *C. pubescens*, and *Capsicum* sp.) in any country that also occur in Colombia on any host (Table 6). In this list, we specify the pest's scientific name, reference(s) that report the pest on *C. annuum*, *C. baccatum*, *C. chinense*, *C. frutescens*, *C. pubescens*, or *Capsicum* sp., the reported distribution of the pest with respect to Colombia and the United States, the quarantine status of the pest in the United States, the generally affected plant part(s), and if the pest is likely to follow the pathway of commercially exported pepper fruit with short stalk from Colombia to the continental United States. Each pest listed includes the pertinent citation for, the distribution, record on the host, and plant part association.

We do not provide information on plant part association and whether the pest is likely to follow the pathway for non-quarantine pests. Even if non-quarantine pests are able to follow the pathway, phytosanitary measures against these pests would not be justified because they already occur in the continental United States. Therefore, for non-quarantine pests we indicate that information with N/A (not applicable). Shaded rows indicate quarantine pests likely to follow the commodity pathway and selected for further analysis.

Table 6. Pests reported on *Capsicum* spp. (in any country) and present in Colombia.

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
ARTHROPODS					
ACARI					
Tarsonemidae					
Polyphagotarsonemus latus Banks	*C. annuum* (CABI, 2006; Echer et al., 2002; Ochoa et al., 1994); *C. frutescens* (CABI, 2006; Echer et al., 2002); *Capsicum* sp. (CABI, 2006; Ochoa et al., 1994; PestID, 2011)	CO (CABI, 2006; Figueroa, 1977; Posada, 1989); US (CABI, 2006; Hill, 1975)	No	N/A	N/A
Tetranychidae					
Tetranychus cinnabarinus (Boisduval)	*Capsicum* sp. (CABI 2006; Pest Directory, 2007)	CO (CABI 2011; Gallego and Vélez, 1992; Posada, 1989); US (CABI, 2011; Bolland et al., 1998)	No	N/A	N/A
Tetranychus urticae Koch	*C. annuum* (Bolland et al., 1998; CABI, 2006; Ochoa et al., 1994); *Capsicum* sp. (CABI, 2011; Natwick and Trumble, 2007)	CO (Bolland et al., 1998; CABI, 2011; Gallego and Vélez,1992); US (Bolland et al., 1998; CABI, 2011; Natwick and Trumble, 2007)	No	N/A	N/A
INSECTA					
Coleoptera: Anobiidae					
Lasioderma serricorne Fabricius	*C. annuum* (Mahroof and Phillips, 2007; PestID, 2011); *Capsicum* sp. (Mahroof and Phillips, 2007; CABI, 2006; PestID, 2011)	CO (Figueroa, 1977; Gallego and Vélez, 1992; Posada, 1989); US (Arnett, 2000; Barlett, 2005; CABI, 2006)	No	N/A	N/A

[5] Generally, we do not analyze further organisms identified only to the genus or higher taxonomic level if the taxon in question is reported in the PRA area of the United States.

[6] Geographic Distribution: CO = Colombia, US = United States.

[7] Abbreviations used for plant parts: B = Branch; Fl = Flower; F = Fruit; L = Leaf; R = Root; Sd = Seedling; Se = Seed; Sh = Shoot; and S = Stem

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Coleoptera: Bostrichidae					
Rhyzopertha dominica (Fabricius)	*C. frutescens* (CABI, 2006)	CO (Gallego and Vélez, 1992); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Coleoptera: Chrysomelidae					
Cerotoma spp.	*Capsicum* sp (Gallego and Vélez, 1992)	CO (Gallego and Vélez, 1992)	Yes	L (Gallego and Vélez, 1992)	No
Diabrotica balteata Leconte	*C. annuum* (Mendez, 2007); *C. frutescens* (Mendez, 2007)	CO (CABI, 2006; Gallego and Vélez, 1992; Saunders, et al., 1998); US (CABI, 2006; Saunders, et al., 1998)	No	N/A	No
Diabrotica speciosa (Germar)	*Capsicum* sp. (CABI, 2006; Pest Directory, 2007)	CO (Figueroa, 1977; EPPO, 2005; Gallego and Vélez, 1992)	Yes	F, L, R (EPPO, 2005)	No[8]
Diabrotica spp.	*Capsicum* sp (Gallego and Vélez, 1992)	CO (Gallego and Vélez, 1992)	Yes	L (Gallego and Vélez, 1992)	No
Epitrix cucumeris (Harris)	*C. annuum* (CABI, 2006; EPPO, 2007); *C. frutescens* (EPPO, 2007)	CO (Figueroa, 1977; Gallego and Vélez, 1992; Posada, 1989; US (Arnett, 2000; CABI, 2006; EPPO, 2007)	No	N/A	N/A
Epitrix tuberis Gentner	*C. annuum* (EPPO, 2007); *C. frutescens* (CABI, 2006; EPPO, 2007)	CO (CABI, 2006) US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Coleoptera: Curculionidae					
Faustinus cubae (Boheman)	*C. annuum* (CABI 2006; Depestre, 2009; PestID, 2011)	CO (Gallego and Vélez, 1992; Dias de Almeida et al., 2009)	Yes	L, S (Saunders et al., 1998; Dias de Almeida et al, 2009)	No

[8] Adults of *Diabrotica speciosa* are external feeders and active insects (CABI, 2009), and are unlikely to remain with fruit through harvest and post-harvest processing.

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Coleoptera: Meloidae					
Epicauta carmelita (Haag)	*C. anuum, C. frutescens* (SENASA 2003)	CO (Maes and Chandler 1994)	Yes	Fl, L[9] (Arnett et al. 2002; Ratcliffe et al. 2013; Triplehorn and Johnson 2005)	No
Coleoptera: Tenebrionidae					
Tribolium castaneum Herbst	*C. annuum* (CABI, 2006; PestID, 2011); *Capsicum* sp (CABI, 2006; IPGRI, 1995)	CO (CABI, 2006; Gallego and Vélez, 1992); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Diptera: Agromyzidae					
Liriomyza huidobrensis (Blanchard)	*C. annuum* (CABI, 2006; EPPO, 2007; Watson, 2005a); *Capsicum* sp (Pest Directory, 2007)	CO (Gallego and Vélez, 1992; Posada, 1989)	Yes	L (CABI, 2006; Watson, 2005a)	No
Liriomyza sativae Blanchard	*C. annuum* (Watson, 2005a; CABI, 2006; EPPO, 2007); *C. frutescens* (EPPO, 2007); *Capsicum* sp. (CABI, 2006; PestID, 2011)	CO (CABI, 2006; Figueroa, 1977; Posada, 1989); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Liriomyza sp.	*C. annuum* (PestID, 2011; Showler et al., 2010)	CO (Figueroa, 1977; Gallego and Vélez, 1992)	Yes	L (Showler et al., 2010)	No
Liriomyza trifolii Burgess in Comstock	*C. annuum* (CABI, 2006; EPPO, 2007; PestID, 2011); *Capsicum* sp. (Natwick and Trumble, 2010; Pest Directory, 2007; PestID, 2011)	CO (CABI, 2006; Gallego and Vélez, 1992; Posada, 1989); US (CABI, 2006)	No	N/A	N/A
Diptera: Cecidomyiidae					
Prodiplosis longifila Gagné	*C. chinense* (Lawrence et al., 2000; Sunitha, 2007)	CO (Gagné, 2010); US (Gagné, 2010; Pena et al., 1989)	No	N/A	N/A

[9] We found no specific information about *Epicauta carmelita*. Plant parts affected information is based on other *Epicauta* spp. (Ratcliffe et al. 2013; Triplehorn and Johnson 2005).

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Diptera:Lonchaeidae					
Neosilba pendula (Bezzi) Syn: S*ilba pendula* (Bezzi)	*C. annuum* (ALNICOLSA, 2009); *Capsicum* sp. (Saunders et al.,1998)	CO (Figueroa, 1977; Peña, and Schoonhoven, 1976; Posada, 1989)	Yes	F (ALNI-COLS, 2009; White and Elson-Harris, 1992)	No[10]
Diptera: Muscidae					
Atherigona orientalis Schiner	*C. annuum* (CABI, 2006); *C. frutescens* (CABI, 2006); *Capsicum* sp. (Ogbalu et al., 2005; PestID, 2011)	CO (CABI, 2006); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Diptera: Tephritidae					
Anastrepha distincta Greene	*C. annuum* (Norborn and Kim, 1988)	CO (Norborn and Kim, 1988)	Yes	F (Norborn and Kim 1988)	No[11]
Anastrepha fraterculus Wiedemann	*C. annuum* (Castañeda et al., 2010; Rogg, 2000).	CO (CABI, 2006; Castañeda et al., 2010; Gallego and Vélez, 1992; Posada, 1989; Nuñez, 1996)	Yes	F (Castañeda et al., 2010; Nuñez, 1996)	Yes
Anastrepha obliqua (Macquart)	*C. annuum* (Norborn and Kim, 1988; Newborn, 2013)	CO (CABI 2012)	Yes	F (CABI 2012)	No[12]
Anastrepha serpentina (Wiedemann)	*C. annuum* (Newborn, 2013)	CO (CABI 2012)	Yes	F (CABI 2012)	No[13]

[10] *Neosilbe pendula* is a secondary pest that attack hosts previously damaged by primary invaders, particularly fruit flies (McAlpine and Steyskal, 1982; White and Elson-Harris, 1992). If damaged fruit is properly culled and fruit fly mitigation is undertaken, then *N. pendula* is highly unlikely to follow the pathway.

[11] *Capsicum annuum* has been listed only as a laboratory host of *Anastrepha distincta* (Norborn and Kim, 1988). Therefore, *A. distincta* is highly unlikely to follow the pathway via commercial shipments of *Capsicum* spp. from Colombia.

[12] *Capsicum annuum* has been listed only as a laboratory host of *Anastrepha obliqua* (Norborn and Kim, 1988; Newborn 2013); therefore, it is unlikely that *A. obliqua* would follow the pathway via commercial shipments of *Capsicum* spp. from Colombia.

[13] *Capsicum annuum* is listed only as a laboratory host of *Anastrepha serpentina* (Norborn and Kim, 1988). Therefore, *A. serpentina* is highly unlikely to follow the pathway with commercial shipments of *Capsicum* spp. from Colombia.

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Ceratitis capitata (Wiedemann)	*C. annuum* (CABI, 2006; PestID, 2011; Thomas et al., 2001); *C. baccatum* (Thomas et al., 2001); *C. frutescens* (CABI, 2006; Thomas et al., 2001); *Capsicum* sp. (Gallego and Vélez; 1992; Mau and Martin, 1992; PestID, 2011)	CO (Gallego and Vélez, 1992; CABI, 2006; Thomas et al., 2001)	Yes	F (CABI, 2006; Thomas et al., 2001)	Yes
Hemiptera: Aleyrodidae					
Aleurodicus dispersus Russell	*C. annuum* (EPPO, 2007); *Capsicum* sp. (CABI, 2006; Pest Directory, 2007)	CO (CABI, 2006); US (CABI, 2006; Evans, 2007)	No	N/A	N/A
Bemisia tabaci (B biotype) (Gennadius) Syn. *B. argentifolii* Bellows & Perring	*C. annuum* (CABI, 2006; Gonçales et al., 2011; Natwick and Trumble, 2010); *C. chinense* (Legaspi et al., 2008); *Capsicum* sp. (Mau and Lee, 2007)	CO (CABI, 2011; Rodriguez et al., 2005); US (CABI, 2011)	No	N/A	N/A
Bemisia tabaci (Gennadius)	*C. annuum* (CABI, 2006; Gonzalez and Moreno, 1996; Natwick and Trumble, 2010; PestID, 2011; Saunders et al., 1998)	CO (Gallego and Vélez, 1992; CABI, 2011); US (Arnett, 2000); CABI .2011)	No	N/A	N/A
Trialeurodes vaporariorum Westwood	*C. annuum* (CABI, 2006); *Capsicum* sp. (CABI, 2006; Natwick and Trumble, 2010; PestID, 2011)	CO (CABI, 2011; Figueroa, 1977; Gallego and Vélez, 1992; US (Arnett, 2000; CABI, 2011)	No	N/A	N/A
Hemiptera: Aphididae					
Aphis craccivora Koch	*Capsicum* sp. (CABI, 2006; IPGRI, 1995; PestID, 2011)	CO (Bustillo and Sánchez, 1976); US (CABI, 2006)	No	N/A	N/A
Aphis fabae Scopoli	*C. annuum* (IPGRI, 1995; CABI, 2006); *Capsicum* sp. (CABI, 2006; PestID; 2011)	CO (Bustillo and Sánchez, 1976); US (CABI, 2006)	No	N/A	N/A
Aphis gossypii Glover	*C. annuum* (CABI, 2006; PestID; 2011); *C. frutescens* (CABI, 2006); *Capsicum* sp. (Mau and Martín, 1991; NSF, 2005; PestID; 2011)	CO (Bustillo and Sánchez, 1976); US (CABI, 2006)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Aphis nerii Boyer de Fonscolombe	*C. annuum* (CABI 2012)	CO (USDA-ARS-SEL 2013); US (USDA-ARS-SEL 2013)	No	N/A	N/A
Aphis spiraecola Patch	*C. annuum* (CABI, 2006); *Capsicum* sp.(Pest Directory, 2007)	CO (Bustillo and Sánchez, 1976); US (CABI, 2006)	No	N/A	N/A
Aulacorthum solani Kaltenbach	*C. annuum* (CABI, 2006); *Capsicum* sp. (Pest Directory. 2007; PestID; 2011)	CO (Bustillo and Sánchez, 1976); US (CABI, 2006)	No	N/A	N/A
Hyalopterus pruni (Geoffroy)	*Capsicum* sp. (Pest Directory, 2007)	CO (Gallego and Vélez, 1992); US (CABI, 2006)	No	N/A	N/A
Macrosiphum euphorbiae Thomas	*C. annuum* (Quiroz et al., 2005); *Capsicum* sp. (CABI, 2006; Pest Directory. 2007; PestID; 2011)	CO (Bustillo and Sánchez, 1976; CABI, 2006); US (CABI, 2006)	No	N/A	N/A
Myzus persicae Sulzer	*C. annuum* (CABI, 2006; Cermelli, sine die; PestID; 2011); *C. chinense* (Legaspi et al., 2008) (Rogg 2000); *C. frutescens* (Cermelli, sine die); *Capsicum* sp. (CABI, 2011; Natwick and Trumble, 2010)	CO (CABI, 2006; Figueroa, 1977; Posada, 1989); US (Arnett, 2000; CABI, 2011; Hill, 1975)	No	N/A	N/A
Rhopalosiphum maidis (Fitch)	*Capsicum* sp. (Pest Directory. 2007)	CO (Bustillo and Sánchez, 1976; CABI, 2006); US (CABI, 2006)	No	N/A	N/A
Rhopalosiphum rufiabdominalis Sasaki	*Capsicum* sp.(Gallego and Vélez, 1992; Pest Directory. 2007)	CO (Bustillo and Sánchez, 1976; CABI, 2006; Gallego and Vélez, 1992); US (CABI, 2006)	No	N/A	N/A
Toxoptera citricida (Kirkaldy)	*Capsicum* sp. (De Wijs, 1973)	CO (Bustillo and Sánchez, 1976; Gallego and Vélez, 1992; CABI, 2006); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Hemiptera: Coccidae					
Coccus hesperidum Linnaeus	*C. frutescens* (Ben- Dov et al., 2010); *Capsicum* sp. (CABI, 2006; PestID, 2011)	CO (CABI, 2006; Kondo, 2001); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Ceroplastes rubens Maskell	*C. annuum* (Dekle 2001)	CO (Ben-Dov et al. 2013); US (Ben-Dov et al. 2013)	No	N/A	N/A
Parasaissetia nigra (Nietner)	*C. frutescens* (Ben-Dov et al., 2010); *Capsicum* sp. (Ben-Dov et al., 2010; CABI, 2006)	CO (CABI, 2006; Kondo, 2001); US (Ben-Dov et al., 2010)	No	N/A	N/A
Pulvinaria urbicola Cockerell	*C. annuum* (CABI, 2006); *C. frutescens* (Ben-Dov et al., 2010); *Capsicum sp* (Ben-Dov et al., 2010; Ben-Dov et al., 2007; PestID, 2011)	CO (Kondo, 2001); US (Ben-Dov et al., 2010)	No	N/A	N/A
Saissetia coffeae (Walker)	*C. annuum ; C. frutescens* (Ben-Dov et al., 2010); *Capsicum* sp. (CABI, 2006; PestID, 2011)	CO (Kondo, 2001); US (Arnett, 2000; Ben-Dov et al., 2010; CABI, 2006)	No	N/A	N/A
Hemiptera: Coreidae					
Corecoris fuscus (Thunberg) Syn: *Spartocera fusca* (Thunberg)	*C. annuum* (CABI, 2006; PestID, 2011)	CO (Figueroa, 1977; Gallego and Vélez. 1992); US (Baranowski and Slater, 1986)	No	N/A	N/A
Hemiptera: Diaspididae					
Aspidiotus destructor Signoret	*C. annuum* (Ben-Dov et al., 2010; Watson, 2005a); *Capsicum* sp. (CABI, 2006)	CO (Ben-Dov et al., 2010; CABI, 2006; Kondo, 2001; Watson, 2005a); US (Ben-Dov., 2010; CABI, 2006; Watson, 2005a)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Hemiberlesia lataniae (Signoret)	*C. frutescens* (Ben-Dov et al., 2010; Watson, 2005a)	CO (Ben-Dov et al., 2010; Figueroa, 1977, Kondo, 2001; Watson, 2005a); US (Ben-Dov et al., 2010; CABI, 2006)	No	N/A	N/A
Lepidosaphes tokionis Kuwana	*Capsicum* sp. (Ben-Dov et al., 2010 Watson, 2005a)	CO (Figueroa, 1977; Watson, 2005a)	Yes	L (Watson 2005a)	No
Pinnaspis aspidistrae (Signoret)	*C. annuum* (Ben-Dov et al., 2010; Watson, 2005a)	CO (Ben-Dov et al., 2010; Gallego and Vélez, 1992); US (Ben-Dov et al., 2010; Davidson, 1978; Watson, 2005a)	No	N/A	N/A
Pinnaspis strachani (Cooley)	*C. annuum* (Ben-Dov et al., 2010; CABI, 2006); *C. frutescens* (Ben-Dov et al., 2010; CABI, 2006); *Capsicum*. sp (Ben-Dov et al., 2010; PestID, 2011)	CO (Ben-Dov et al., 2010; CABI, 2006); US (Ben-Dov et al., 2010; CABI, 2006)	No	N/A	N/A
Pseudaonidia trilobitiformis (Green)	*C. annuum* (Ben-Dov et al., 2010; Watson, 2005b); *C. frutescens*, *Capsicum* sp. (Ben-Dov et al., 2010)	CO (Gallego and Vélez, 1992); US (Ben-Dov et al., 2010)	No	N/A	N/A
Pseudaulacaspis pentagona Targioni Tozzetti	*C. annuum* (Ben-Dov et al., 2010; Ben-Dov et al., 2007); *Capsicum* sp. (CABI, 2006)	CO (Gallego and Vélez, 1992); US (Ben-Dov et al., 2010; CABI, 2006)	No	N/A	N/A
Unaspis citri (Comstock)	*Capsicum* sp. (CABI, 2006)	CO (CABI, 2006); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Hemiptera: Margarodidae					
Icerya seychellarum (Westwood)	*Capsicum* sp. (CABI 2012); *C. frutescens* (Ben-Dov et al. 2013)	CO (CABI 2012, Ben-Dov et al. 2013)	Yes	L, S (CABI 2012)	No
Hemiptera: Ortheziidae					
Orthezia insignis Browne	*Capsicum* sp. (CABI, 2006)	CO (Gallego and Vélez, 1992; CABI, 2006); US (CABI, 2006)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Praelongorthezia praelonga (Douglas) [Syn: *Orthezia praelonga* Douglas]	*Capsicum* sp. (Ben-Dov et al. 2013)	CO (Ben-Dov et al. 2013)	Yes	L, F (Culik et al. 2007; Neves 2005; PestID, 2013)	No[14]
Hemiptera: Pentatomidae					
Acrosternum marginatum (Palisot de Beauvois)	*C. annuum* (CABI, 2006)	CO (CABI, 2006; Gallego and Vélez, 1992); US (CABI, 2006)	No	N/A	N/A
Arvelius albopunctatus (De Geer)	*C. annuum* (Barlett, 2005; CABI, 2006; PestID, 2011)	CO (Gallego and Vélez, 1992); US (Barlett, 2005)	No	N/A	N/A
Edessa meditabunda (Fabricius)	*C. annuum* (CABI, 2006)	CO (CABI, 2006; Figueroa, 1977; Posada, 1989)	Yes	L, S (Panizzi, 2000)	No
Nezara viridula (Linnaeus)	*C. annuum* (CABI, 2006); *Capsicum* sp. (Mau and Martin, 2007; Pernezny et, al. 2003; PestID, 2011)	CO (Gallego and Vélez, 1992); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Piezodorus guildinii (Westwood)	*C. annuum* (CABI, 2006)	CO (Gallego and Vélez, 1992); US (Barlett, 2005; CABI, 2006)	No	N/A	N/A
Hemiptera: Pseudococcidae					
Dysmicoccus brevipes (Cockerell)	*Capsicum* sp (Williams and Granara de Willink, 1992; CABI, 2006; Granara de Willink, 2009; Ben-Dov et al., 2010; PestID, 2011)	CO (Ben-Dov et al., 2010; Kondo, 2001; Williams and Granara de Willink, 1992); US (Ben-Dov et al., 2010; CABI, 2006)	No	N/A	N/A

[14] *Praelongorthezia praelonga* has been reported to feed on leaves (Culik et al. 2007; Neves 2005). There was but one interception of *P. praelonga* on fruit of *Capsicum* sp. at a U.S. port-of-entry; this was the only evidence indicating that this species feeds on fruits. Association with fruit appears to be rare; thus, *P. praelonga* is considered unlikely to follow the pathway via commercial shipments of *Capsicum* sp. from Colombia.

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Geococcus coffeae Green	*Capsicum annuum* (Ben-Dov et al., 2013)	CO (Ben-Dov et al. 2013); US (FL)[15] (Ben-Dov et al., 2013)	Yes	Fl, F, R (CABI 2012, PestID 2013)	No[16]
Maconellicoccus hirsutus (Green)	*C. annuum* (Ben-Dov et al., 2010; CABI, 2006); *C. frutescens* (Ben-Dov et al., 2010; EPPO, 2007)	CO (Ben-Dov et al., 2010; Kondo et al., 2008); US (Hoy et al., 2011; Roltsch et al., 2006)	No	N/A	N/A
Phenacoccus gossypii Townsend and Cockerell	*C. annuum* (Ben-Dov et al., 2010)*;* *Capsicum* sp (University of Hawaii, 2010; PestID, 2011)	CO (Ben-Dov et al., 2010; Kondo 2001); US (Williams and Granara,1992; CABI, 2006)	No	N/A	N/A
Phenacoccus madeirensis Green	*C. annuum* (Ben-Dov et al., 2010; CABI, 2006); *Capsicum* sp. (PestID, 2011)	CO (Ben-Dov et al., 2010; CABI, 2006; Kondo, 2001); US (Arnett, 2000; Ben-Dov et al., 2010; CABI, 2006)	No	N/A	N/A
Phenacoccus manihoti Matile-Ferrero	*Capsicum* sp. (CABI 2012)	CO (CABI 2012; Ben-Dov et al. 2013)	Yes	L, R, Sh (CABI, 2012)	No
Phenacoccus solani (Ferris)	*C. annuum* (Ben-Dov, 2005; Ben-Dov et al., 2010; PestID, 2011);	CO (Ben-Dov et al., 2010; Kondo et al., 2008); US (Arnett, 2000; Ben-Dov et al., 2010)	No	N/A	N/A
Phenacoccus solenopsis Tinsley	*C. frutescens* (Arif et al., 2009; Ben-Dov et al., 2010; PestID, 2011)	CO (Ben-Dov et al., 2010; Kondo et al., 2008); US (Ben-Dov et al., 2010)	No	N/A	N/A

[15] No detections have been reported from Florida since 1999, when specimens were found in a citrus planting in Orange County (Halbert, 1999), and the mealybug is considered not to be established in the state (I. Stocks, Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Florida State Collection of Arthropods, *in litt*., January 3, 2014).

[16] *Geococcus coffeae* mainly attacks roots (Ben-Dov et al. 2013). It has been intercepted on cut flower and fruits; however, there has been only one interception on each. Therefore, it is unlikely that *G. coffeae* would follow the pathway via commercial shipments of *Capsicum* fruit from Colombia.

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Planococcus lilacinus (Cockerell)	*Capsicum* sp. (Suresh and Mohanasundaram, 1996)	CO (Ben-Dov et al., 2013)	Yes	F, Sh, L, Fl, S (CABI, 2012)	No[17]
Planococcus minor (Maskell)	*C. annuum* (Ben-Dov et al., 2013) *C. frutescens* (Ben-Dov et al., 2013)	CO (Ben-Dov et al. 2013; Williams and Gradara de Willink 1992); US (Francis et al., 2012)	No	N/A	N/A
Pseudococcus elisae Borchsenius	*Capsicum* sp. (PestID 2013) *C. annuum* (PestID 2013)	CO (CABI 2012)	Yes	F, L	No[18]
Pseudococcus jackbeardsleyi Gimpel and Miller	*C. annuum* (Ben-Dov et al., 2010) *C. frutescens* (Ben-Dov et al., 2010; CABI, 2006) *Capsicum* sp. (Ben-Dov et al., 2010; CABI, 2006; PestID, 2011)	CO (Ben-Dov et al., 2010; Kondo et al., 2008; CABI, 2006); US (Ben-Dov, et al. 2010; CABI, 2006)	No	N/A	N/A
Pseudococcus longispinus Targioni Tozzetti	*C. annuum* (Ben-Dov et al., 2010)	CO (Ben-Dov et al., 2010; Kondo et al., 2008); US (Ben-Dov, et al. 2010; CABI, 2006)	No	N/A	N/A
Lepidoptera: Cosmopterigidae					
Pyroderces rileyi (Walshingham)	*Capsicum* sp (Robinson et al., 2010)	CO (CABI, 2006; Gallego and Vélez, 1992); US (Arnett, 2000; Barlett, 2005; CABI, 2006)	No	N/A	N/A
Lepidoptera: Gelechiidae					
Keiferia lycopersicella Walsingham	*Capsicum* sp. (Robinson et al., 2007)	CO (CABI, 2006; Gallego and Vélez, 1992); US (CABI, 2006; Barlett, 2005)	No	N/A	N/A

[17] The original record, cited in Kondo (2001), apparently is in error, as surveys conducted over many years have failed to detect the mealybug in Colombia (C.A. Soto R., Instituto Colombiano Agropecuario, *in litt*., September 23, 2015). Also, no *Capsicum* spp. are listed as hosts for the species in the comprehensive database of Ben-Dov et al. (2013), suggesting that peppers are not a usual host.

[18] The only evidence indicating that *Pseudococcus elisae* attacks *Capsicum* spp. is interception records at U.S. ports of entry. There were five interceptions on *Capsicum* spp, four of five interceptions were from passenger's baggage. As there are no records for any solanaceous species in Ben-Dov et al. (2010), it is doubtful that *Capsicum* spp. are usual hosts, and thus, it is unlikely that *P. elisae* would follow the pathway via commercial shipments of *Capsicum* spp. from Colombia.

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Phthorimaea operculella (Zeller)	*C. annuum* (CABI, 2006; PestID, 2011; Robinson et al., 2007)	CO (CABI, 2006; Gallego and Vélez, 1992); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Symmetrischema tangolias Gyen	*Caspicum* sp. (Robinson et al. 2010) *C. annuum* (Robinson et al. 2010)	CO (CABI 2012); US (Robinson et al. 2010; CABI 2012)	No	N/A	N/A
Tuta absoluta (Meyrick) Povolny Syn.: *Scrobipalpuloides absoluta* (Meyrick) Povolny	*C. frutescens* (CABI, 2011; Roog, 2000)	CO (CABI, 2006; Gallego and Vélez, 1992)	Yes	F, L, S (EPPO, 2005)	No[19]
Lepidoptera: Noctuidae					
Agrotis ipsilon (Hufnagel)	*C. annuum* (CABI, 2006; Robinson et al., 2007) *Capsicum* sp. (Robinson et al., 2007)	CO (CABI, 2006; Gallego and Vélez, 1992); US (Barlett, 2005; CABI, 2006)	No	N/A	N/A
Agrotis malefida Guenée	*C. annuum* (Robinson et al., 2007)	CO (CABI, 2006); US (Barlett, 2005; CABI, 2006)	No	N/A	N/A
Chrysodeixis includens (Walker) Syn.: *Pseudoplusia includens* (Walker)	*C. annuum* (CABI, 2006)	CO (CABI, 2006; Posada, 1989); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Corcyra cephalonica (Stainton)	*C. annuum* (CABI, 2006)	CO (CABI, 2006; Gallego and Vélez, 1992); US (CABI, 2006)	No	N/A	N/A
Copitarsia decolora (Guenée) Syn.: *C. turbata* (Herrich-Schäffer)	*C. annuum* (Castro and Rodríguez, 2016); *C. frutescens* (Angulo and Olivares 2003)	CO (Angulo and Olivares 2003; Castro and Rodríguez, 2016)	Yes	Fl, Stem, L, F (PestID 2013)	Yes
Feltia subterranea (Fabricius) Syn.: *Agrotis subterrânea* (Fabricius)	*C. annuum* (CABI, 2006; Robinson et al., 2007); *C. frutescens* (Rogg, 2000)	CO (Figueroa, 1977; Posada, 1989); US (CABI, 2006; Opler et al., 2006; Saunders et al., 1998)	No	N/A	N/A

[19] The preferred host of *T. absoluta* is tomato (*Solanum lycopersicum*). Larvae attack leaves, stems, and fruit of tomato (Korycinska and Moran, 2009). *Tuta absoluta* feeds on the leaves of several species of plants in the Solanaceae, including pepper; however, we found no records of fruit being attacked in species other than tomato.

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Helicoverpa zea (Boddie) Syn: *Heliothis zea* (Boddie)	*C. annuum* (CABI 2006; EPPO, 2007; PestID, 2011; Robinson et al, 2007); *C. frutescens* (EPPO, 2007; PestID, 2011; Robinson et al, 2007)	CO (CABI, 2006; Figueroa, 1977; Posada, 1989; Gallego and Vélez, 1997); US (Arnett, 2000; CABI, 2006; Capinera, 2007)	No	N/A	N/A
Heliothis virescens (Fabricius)	*C. annuum* (CABI, 2006; PestID, 2011); *C. frutescens* (Rogg, 2000)	CO (CABI, 2006; García, 1976); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Peridroma saucia (Hübner)	*C. annuum* (CABI, 2006; Robinson et al., 2007); *C. frutescens* (Rogg, 2000)	CO (CABI, 2006; Posada, 1989); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Spodoptera albula (Walker)	*C. annuum* (CABI, 2006)	CO (CABI, 2006); US (Barlett, 2005)	No	N/A	N/A
Spodoptera eridania Stoll	*C. annuum* (CABI, 2006; EPPO, 2007; Robinson et al., 2007); *C. frutescens* (Robinson et al., 2007)	CO (Figueroa, 1977); US (CABI, 2006; Capinera, 2008)	No	N/A	N/A
Spodoptera frugiperda J.E. Smith	*C. annuum* (CABI, 2006; EPPO, 2007; PestID, 2011; Robinson et al., 2007); *C. frutescens* (PestID, 2011; Robinson et al., 2007)	CO (CABI, 2006; Posada, 1989); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Spodoptera latifascia (Walker)	*C. annuum* (CABI, 2006; PestID, 2011; Robinson et al., 2007)	CO (Gallego and Vélez, 1992); US (Barlett, 2005)	No	N/A	N/A
Spodoptera ornithogalli (Guenée)	*C. annuum* (CABI, 2006); *C. frutescens* (Robinson et al., 2007); *Capsicum* sp. (PestID, 2011).	CO (Figueroa, 1977; Posada, 1989; Gallego and Vélez, 1997); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Trichoplusia ni (Hübner)	*C. annuum* (CABI, 2006; PestID, 2011)	CO (CABI, 2006; Figueroa, 1977; Posada, 1989; Gallego and Vélez, 1997); US (CABI, 2006; Barlett, 2005)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Lepidoptera: Pyralidae					
Anagasta kuehniella Zeller Syn.: *Ephestia kuehniella* Zeller	*C. annuum* (CABI, 2006) *Capsicum* sp. (Zhang, 1994; Robinson et al., 2007)	CO (Figueroa, 1977); US (Opler et al, 2006)	No	N/A	N/A
Cadra cautella Walker	*Capsicum* sp (PestID, 2011; Robinson et al., 2010)	CO (CABI, 2006; Gallego and Vélez; 1992); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Corcyra cephalonica (Stainton)	*C. annuum* (CABI, 2006)	CO (CABI, 2006; Gallego and Vélez, 1992); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Etiella zinckenella (Treitschke)	*C. annuum* (Robinson et al., 2007)	CO (CABI, 2006; Gallego and Vélez, 1992); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A
Herpetogramma bipunctalis (Fabricius)	*C. frutescens* (Robinson et al., 2007)	CO (Posada, 1989); US (CABI, 2006; Barlett, 2005)	No	N/A	N/A
Lineodes triangulalis Möschler	*C. annuum* (Robinson et al., 2007); *Capsicum* sp. (Gallego and Vélez, 1992)	CO (Gallego and Vélez, 1992); US (Barlett, 2005)	No	N/A	N/A
Neoleucinodes elegantalis (Guenée)	*C. annuum* (Benvenga, Sine die; Robinson et al. 2007); *Capsicum* sp. (Pest Directory, 2007; Robinson et al., 2007)	CO (Gallego and Vélez, 1992; Posada, 1989)	Yes	F (Benvenga, Sine die; Robinson et al. 2007)	Yes
Oiketicus kirbyi Guilding	*C. annuum* (Ministerio-de-Agricultura 2004)	CO (Zhang, 1994)	Yes	L (Capinera 2008)	No
Plodia interpunctella (Hübner)	*C. annuum* (PestID, 2011; Robinson et al., 2007)	CO (Gallego and Vélez, 1992; Posada, 1989); US (CABI, 2006; Barlett, 2005)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Lepidoptera: Sphingidae					
Manduca sexta (Linnaeus)	*C. annuum* (CABI, 2006; Nuez, et al., 1996; Robinson et al., 2007) *Capsicum* sp. (Robinson et al., 2007)	CO (CABI, 2006; Gallego and Vélez, 1992); US (Arnett, 2000; CABI, 2006; Robinson et al., 2007)	No	N/A	N/A
Lepidoptera: Tortricidae					
Platynota rostrana Walker	*C. annuum* (Robinson et al., 2010); *C. frutescens* (Robinson et al., 2010)	CO (Gallego and Vélez, 1992; Posada, 1989); US (Barlett, 2005)	No	N/A	N/A
Orthoptera: Gryllotalpidae					
Scapteriscus didactylus (Latreille)	*C. annuum*, (CABI, 2006); *Capsicum* sp. (CABI, 2006; Capinera and Leppla, 2009)	CO (Gallego and Vélez; 1992; Posada, 1989)	Yes	L, S (Capinera and Leppla, 2009)	No
Thysanoptera: Thripidae					
Frankliniella occidentalis (Pergande)	*C. annuum* (CABI, 2006; EPPO, 2007; Larraín et al, 2006; PestID, 2011); *Capsicum* sp. (Pest, Directory, 2007; PestID, 2011)	CO (CABI, 2006; EPPO, 2007); US (Arnett, 2000; CABI, 2006; EPPO, 2007)	No	N/A	N/A
Frankliniella schultzei (Trybom)	*C. annuum* (Jimenez et al, 2006); *C. frutescens*, (Jimenez et al, 2006)	CO (CABI, 2006); US (CABI, 2006)	No	N/A	N/A
Thrips palmi Karny	*C. annuum* (CABI 2006; PestID, 2011); *C. frutescens* (Vazquez et al., 2005); *Capsicum* sp. (CABI 2006; Mau and Martin, 1992; PestID, 2011)	CO (Bueno and Cardona, 1999; CABI, 2006; Durán et al, 1999); US (Seal, 2001)	No	N/A	N/A
Thrips tabaci Lindeman	*C. annuum* (Salas, 2003; Quiroz et al, 2005)	CO (CABI, 2006; Gallego and Vélez, 1992; Posada, 1989); US (Arnett, 2000; CABI, 2006)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
NEMATODES					
Aphelenchoides besseyi Christie	*C. annuum* (Escuer and Bello; 2000)	CO (Buriticá, 1999); US (CABI, 2006; EPPO, 2007)	No	N/A	N/A
Helicotylenchus dihystera (Cobb) Sher	*C. annuum* (CABI, 2006; Escobar et al., 2006); *C. frutescens* (Ferris, 2000)	CO (Buriticá, 1999; CABI,2006); US (CABI, 2006, Mead, 1989)	No	N/A	N/A
Helicotylenchus sp.	*C. annuum* (Ferris, 2000; Toro, 1999)	CO (Toro, 1999)	Yes	R (Toro, 1999)	No
Meloidogyne arenaria (Neal) Chitwood	*C. annuum* (CABI, 2006; Ferris, 2000); *C. chinense* (Fery and Thies, 2004); *Capsicum* sp. (Pest Directory, 2007)	CO (Buriticá, 1999; CABI,2006); US (CABI, 2006; Walters and Barker, 1994)	No	N/A	N/A
Meloidogyne exigua Goeldi	*C. annuum* (CABI, 2006; Society of Nematologists, 2003; Ferris, 1999)	CO (Buriticá, 1999; CABI, 2006; Society of Nematologists, 2003)	Yes	R (CABI 2006)	No
Meloidogyne hapla Chitwood	*C. annuum* (CABI, 2006); *C. frutescens* (Ferris, 2000); *Capsicum* sp. (Pest Directory, 2007)	CO (CABI, 2006; Buriticá, 1999); US (Berney and Bird; 1992; CABI, 2006)	No	N/A	N/A
Meloidogyne incognita (Kofoid & White) Chitwood	*C. annuum* (ALNICOLSA, 2009; CABI, 2006: Escalona et al., 2006); *C. chinense* (Duda de Oliveira et al., 2009); *C. frutescens* (Duda de Oliveira et al., 2009); *Capsicum* sp. (Pest Directory, 2007; Ploeg, 2009)	CO (Buriticá, 1999; CABI, 2006); US (CABI, 2006; Ploeg, 2009)	No	N/A	N/A
Meloidogyne javanica (Treub) Chitwood	*C. annuum* (CABI, 2006; Ferry and Thies, 2009); *C. chinense* (Fery and Thies, 2004); *Capsicum* sp. (Fery and Thies, 2009; Pest Directory, 2007; Ploeg, 2009)	CO (Buriticá, 1999; CABI, 2006); US (CABI, 2006; Ploeg, 2009)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Meloidogyne sp.	*Capsicum* sp. (Noling, 1999); *C. annuum* (Toro, 1999)	CO (Guerrero, 1984; Vidal and Nieto, 1989; Toro, 1999); US (Noling, 1999)	Yes	R (Guerrero, 1984; Vidal and Nieto, 1989)	No
Paratrichodorus minor (Colbran) Siddiqi	*Capsicum* sp. (CABI, 2006; Pernezny et al., 2003; Ploeg, 2009); *C. frutescens* (Ferris, 2000)	CO (Buriticá, 1999; Norton and Varon, 1984); US (CABI, 2006; Ferris, 1999; Ploeg, 2009)	No	N/A	N/A
Pratylenchus zeae Graham	*C. annuum* (CABI, 2006; Fortuner, 1976)	CO (CABI, 2006; Trevathan et al., 1985); US (CABI, 2006; Fortuner, 1976)	No	N/A	N/A
Radopholus similis (Cobb) Thorne	*C. frutescens* (Ferris, 2000); *Capsicum* sp. (Pernezny et al, 2003)	CO (Buriticá, 1999; CABI, 2006; Múnera et al., 2010)	Yes	R (CABI, 2006)	No
Rotylenchulus reniformis Linford & Oliveira	*C. annuum* (CABI, 2006; Escalona et al., 2006; Coimbatore, 1979); *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; CABI, 2006); US (CABI, 2006; Lawrence, 2008)	No	N/A	N/A
Tylenchorhynchus annulatus (Cassidy) Golden	*C. annuum* (Escalona et al., 2006); *Capsicum* sp. (Pest Directory. 2007)	CO (CABI, 2006); US (CABI, 2006)	No	N/A	N/A
FUNGI[20]					
Alternaria alternata (Fr.:Fr.) Keissl. Syn. *Alternaria tenuis* (Fries) Keissler.	*C. annuum* (CABI, 2006; Utkhede and Mathur, 2005; Wellman, 1977); *C. frutescens* (Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Alternaria brassicae (Berk.) Sacc.	*C. annuum* (Farr and Rossman, 2011)	CO (Buriticá, 1999; Tamayo et al., 2001); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A

[20] Fungi are listed by the sexual state first (if it is known). Taxonomy follows Farr and Rossman (2011).

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Alternaria solani Sorauer	*C. annuum* (Alfieri et al., 1994; Buriticá, 1999; CABI, 2006; Castaño, 1978; Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Buriticá, 1999; Wellman, 1977); *C. frutescens* (Alfieri et al., 1994; Buriticá, 1999; Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (Buriticá, 1999;CABI, 2006)	CO (Buriticá, 1999; Tamayo and Jaramillo, 2006; Farr and Rossman, 2011); US (Alfieri et al.,1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Alternaria sp.	*C. annuum* (Farr and Rossman, 2011; Holliday, 1980); *C. frutescens* (Farr and Rossman, 2011; Holliday, 1980); *C. pubescens* (Holliday, 1980); *Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; Farr and Rossman, 2011)	Yes	L (Farr and Rossman, 2011)	No
Alternaria tenuissima (Nees & T. Nees : Fr.) Wiltshire	*C. annuum* (Alfieri et al., 1994; Farr and Rossman, 2011); *C. frutescens* (Farr and Rossman, 2011)	CO (Buriticá, 1999; Farr and Rossman, 2011); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Armillaria mellea (Vahl: Fr.) P. Kumm.	*C. annuum* (Farr and Rossman, 2011)	CO (Buriticá, 1999; CABI, 2006; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Aspergillus niger Tiegh	*C. annuum* (CABI, 2006; Farr and Rossman, 2011); *C. frutescens* (CABI, 2006)	CO (Buriticá, 1999; Orjuela, 1965); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Athelia rolfsii (Curzi) Tu & Kimbr. Syn.: *Corticium rolfsii* Curzi; Anamorph: *Sclerotium rolfsii*	*C. annuum* (Alfieri *et al*., 1994; Buriticá, 1999; Chellemi and Mirusso. 2006; Farr and Rossman, 2011; Wellman, 1977)*; C. baccatum* (Buriticá, 1999; Wellman, 1977)*; C. frutescens* (Alfieri *et al*., 1994; Buriticá, 1999; Farr and Rossman, 2011; Wellman, 1977)*; Capsicum* sp. (Buriticá, 1999; Farr and Rossman, 2011)	CO (Buriticá, 1999; Lozano and Pineda, 1977); US (Alfieri et al., 1994; CABI, 2006; Wellman, 1977)	No	N/A	N/A
Boeremia exigua var. e*xigua* (Desm.) Aveskamp, Gruyter & Verkley Syn: *Ascochyta capsici* Bond.-Mont; *Phoma exigua* var. *exigua* Desm; *Phoma exigua* Desm.	*C. annuum; C. frutescens* (Alfieri et al., 1994; Farr and Rossman, 2011; *Capsicum* sp (Farr and Rossman, 2011)	CO (Buriticá; 1999; Pardo-Cardona, 1995); US (Alfieri et al., 1994; Farr and Rossman, 2011)	No	N/A	N/A
Botryosphaeria rhodina (Berk. & M.A. Curtis) Arx Anamorph: *Lasiodiplodia theobromae* Griffon & Maubl. Syn. *Botryodiplodia theobromae* Pat.	*C. annuum;* (CABI, 2006; EPPO, 2007, Farr and Rossman, 2011); *C. frutescens* (Farr and Rossman, 2011); *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999, CABI, 2006, Farr and Rossman, 2011); US (Alfieri et al., 1994, CABI, 2006, Farr and Rossman, 2011)	No	N/A	N/A
Botryotinia fuckeliana (de Bary) Whetzel Syn.: *Botrytis cinerea* Pers.: Fr.	*C. annuum* (Alfieri et al., 1994; Buriticá, 1999; Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Alfieri et al., 1994; Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (CABI, 2006; Farr and Rossman, 2011; Pest Directory, 2007)	CO (Buriticá, 1999; Farr and Rossman, 2011; Garces de Granada, 1992); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Capnodium sp.	*C. annuum; C. frutescens* (Farr and Rossman, 2011).	CO (Farr and Rossman, 2011, Tamayo, 2007)	Yes	L (Tamayo, 2007)	No

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Cercospora apii Fresen	*C. annuum,* (Farr and Rossman, 2011); *C. frutescens* (Farr and Rossman, 2011; PestID. 2011)	CO (Buriticá, 1999; Castaño, 1978; Farr and Rossman, 2011) US (Alfieri et al., 1994; Farr and Rossman, 2011)	No	N/A	N/A
Cercospora physalidis Ellis Syn.: *C. capsici* Heald & F.A. Wolf	*C. annuum* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Pernezny et al.,2003; Wellman, 1977); *C. baccatum* (Buriticá, 1999; Farr and Rossman, 2011; Pardo-Cardona, 1995; Wellman, 1977); *C. chinense* (Farr and Rossman, 2011); *C. frutescens* (Alfieri et al., 1994; Buriticá, 1999; CABI, 2006; Farr and Rossman, 2011; Pernezny et al.,2003; Wellman, 1977); *Capsicum* sp. (Buriticá, 1999; Pest Directory, 2007; PestID. 2011)	CO (Buriticá, 1999; Castaño, 1978; Farr and Rossman, 2011; Tamayo and Jaramillo, 2006); US (Alfieri et al., 1994; Farr and Rossman, 2011; NSF, 2001; Pernezny et al., 2003)	No	N/A	N/A
Cercospora sp.	*C. annuum*; *C. frutescens Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; Pardo-Cardona, 1995; Castaño, 1978)	Yes	L.(Farr and Rossman, 2011)	No
Choanephora cucurbitarum (Berk. & Ravenel) Thaxt.	*C. annuum* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Roberts et al., 2003; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (CABI, 2006; Farr and Rossman, 2011; Pest Directory, 2007)	CO (Buriticá, 1999; Laberry and Lozano, 1988; Laberry and Lozano, 1990); US (Alfieri et al., 1994; CABI, 2006; Roberts et al., 2003; Wellman, 1977)	No	N/A	N/A
Cladosporium cladosporioides (Fresen.) G.A. De Vries	*C. annuun* (Farr and Rossman, 2011)	CO (Buriticá, 1999; Pardo-Cardona, 1995); US (Alfieri et al., 1994; Farr and Rossman, 2011; Gubler et al., 1999)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Cladosporium sp.	*C. annuum* (Alfieri et al., 1994; Farr and Rossman, 2011)	CO (Buriticá, 1999; Pardo-Cardona, 1995)	Yes	L (Alfieri et al., 1994)	No
Cochliobolus eragrostidis (Tsuda & Ueyama) Sivan. Anamorph: *Curvularia eragrostidis* (Henn.) J.A. Mey.	*C. annuum* (Farr and Rossman, 2011); *Capsicum* sp (Sivanesan, 1998a)	CO (Farr and Rossman, 2011; Sivanesan, 1998a); US (Alfieri et al., 1994; Farr and Rossman, 2011; Sivanesan, 1998a.)	No	N/A	N/A
Cochliobolus geniculatus R.R. Nelson Anamorph: *Curvularia geniculata* (Tracy & Earle) Boedijn	*C. annuum*; *C frutescens* (Farr and Rossman, 2011)	CO (Buriticá, 1999; Farr and Rossman, 2011; Pardo-Cardona, 1995); US (Alfieri et al., 1994; Farr and Rossman, 2011; Rogerson, 1953)	No	N/A	N/A
Cochliobolus lunatus R.R. Nelson & Haasis Anamorph: *Curvularia lunata* (Wakker) Boedijn	*C. annuum* (Alfieri et al., 1994; Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977*)*; *C. frutescens* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; Farr and Rossman, 2011; Pardo- Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Cochliobolus pallescens (Tsuda & Ueyama) Sivan. Anamorph: *Curvularia pallescens* Boedijn	*C. annuum* (Farr and Rossman, 2011)	CO, US (Farr and Rossman, 2011; Sivanesan, 1998b)	No	N/A	N/A
Colletotrichum capsici (Syd.) E.J. Butler & Bisby	*C. annuum* (Alfieri et al., 1994; Farr and Rossman, 2011; Holliday, 1980; Sinha, *Sine die*; Toro, 1999; Uma, 1981); *C. frutescens* (Holliday, 1980; Farr and Rossman, 2011; Pest Directory, 2007); *Capsicum* sp. (Farr and Rossman, 2011; Pest Directory, 2007; Toro,1999)	CO (Toro, 1999); US (Alfieri et al., 1994; Farr and Rossman, 2011)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Colletotrichum dematium (Pers. : Fr.) Grove	*C. annuum* (CABI, 2006; Farr and Rossman, 2011); *C. frutescens* (Farr and Rossman, 2011); *Capsicum* sp. (Farr and Rossman, 2011; Pest Directory, 2007)	CO (Buriticá, 1999; ICA, 2000; Pardo-Cardona, 1995); US (Alfieri et al., 1994; Farr and Rossman, 2011)	No	N/A	N/A
Colletotrichum phomoides (Sacc.); Chester	*C. annuum; C frutescens* (Farr and Rossman, 2011)	CO (Buriticá, 1999); US (Farr and Rossman, 2011)	No	N/A	N/A
Colletotrichum sp.	*C. annuum; C frutescens* (Farr and Rossman, 2011)	CO (Buriticá, 1999)	Yes	F (Alfieri at al., 1994; PestID. 2011)	Yes
Corticium koleroga (Cooke) Höhn. Syn.: *Pellicularia koleroga* Cooke	*C. annuum* (Farr and Rossman, 2011)	CO (Buriticá, 1999); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Corynespora cassiicola (Berk. & M.A. Curtis) C.T. Wei	*C. annuum* (Alfieri et al.,1994; Cutrim and Silva, 2003; Farr and Rossman; 2011); *C. frutescens* (Farr and Rossman, 2011); *Capsicum* sp. (PestID, 2011)	CO (Buriticá, 1999; Osorio, 1990); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Davidiella tassiana (De Not.) Crous & U. Braun Anamorph: *Cladosporium herbarum* (Pers: Fr) Link	*C. annuum , C. frutescens* (Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977); *Capsicum* sp. (Farr and Rossman, 2011; PestID, 2011)	CO (Buriticá, 1999; Pardo-Cardona, 1995; Castaño, 1978); US (Alfieri et al., 1994; CABI, 2006; Wellman, 1977)	No	N/A	N/A
Diaporthe phaseolorum (Cooke & Ellis) Sacc	*C. annuum* (Farr and Rossman, 2011; Viégas, 1962; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (CABI, 2006; Punithalingam and Holliday, 1998)	CO (Buriticá, 1999; Castaño, 1978; Punithalingam and Holliday, 1998); US (CABI, 2006; Punithalingam and Holliday, 1998)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Diaporthe phaseolorum var. *sojae* (Lehman) Wehm.	*C. frutescens* (CABI, 2006; Farr and Rossman, 2011)	CO (CABI, 2006; EPPO, 2007); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Diaporthe vexans (Sacc. & P. Syd.) Gratz. Syn.: *Phomopsis vexans* (Sacc. & P. Syd.) Harter	*C. annuum* (Farr and Rossman, 2011)	CO (Buriticá, 1999; Castaño, 1978; Farr and Rossman, 2011); US (Alfieri, 1994; CABI, 2006; Farr and Rossman, 2011; Robert et al., 2005)	No	N/A	N/A
Epicoccum nigrum Link	*C. frutescens* (Farr and Rossman, 2011)	CO (Arenal et al., 2000; Buriticá, 1999; Farr and Rossman, 2011); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Fusarium culmorum (Wm. G. Sm.) Sacc.	*C. annuum* (Farr and Rossman, 2011)	CO (Rojas et al., 2003); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Fusarium incarnatum (Desm.) Sacc. Syn.: *Fusarium semitectum* Berk. & Ravene	*C. annuum; C. frutescens Capsicum* sp. (Farr and Rossman, 2006)	CO (Buriticá, 1999; Farr and Rossman, 2011); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Fusarium oxysporum f. sp. *lycopersici* (Sacc.) W.C. Snyder & H.N. Hansen	*C. annuum* (Farr and Rossman, 2011; Tamayo and Jaramillo, 2006)	CO (Buriticá, 1999; Tamayo and Jaramillo, 2006); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Fusarium oxysporum f. *vasinfectum* (G.F. Atk.) W.C. Snyder & H.N. Hansen	*C. annuum* (CABI, 2006; Farr and Rossman, 2011)	CO (Buriticá, 1999; Brayford, 1998; CABI, 1982); US (Brayford, 1998; CABI, 2006; CABI, 1982; Farr and Rossman, 2011)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Fusarium oxysporum Schltdl.:Fr	*C. annuum* (Alfieri et al., 1994; Escalona et al., 2006; Farr and Rossman, 2011; Pardo-Cardona, 1995; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Alfieri et al., 1994; Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (CABI, 2006; Farr and Rossman, 2011)	CO (Buriticá, 1999; Farr and Rossman, 2011; Pardo-Cardona, 1995; Tamayo and Jaramillo, 2006); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A
Fusarium sp.	*C. annuum* (Escalona, 2006); *C. frutescens* (Farr and Rossman, 2011)*; Capsicum* sp. (CABI, 2006; Farr and Rossman, 2011)	CO (Buriticá, 1999; Tamayo and Jaramillo, 2006)	Yes	F (Alfieri et al., 1994); L (Tamayo and Jaramillo, 2006)	Yes
Galactomyces geotrichum (E.E. Butler & L.J. Petersen) Redhead & Malloch Anamorph: *Geotrichum candidum* Link	*C. annuum* (Farr and Rossman, 2011)	CO, US (Farr and Rossman, 2011)	No	N/A	N/A
Gibberella intricans Wollenw. Anamorph: *Fusarium equiseti* (Corda) Sacc.	*C. annuum* (Farr and Rossman, 2011; Goswami et al., 2008); *C. frutescens* (Farr and Rossman, 2011); *Capsicum* sp. (CABI, 2006; Pest Directory, 2007)	CO (Buriticá, 1999); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Gibberella moniliformis Wineland Anamorph*: Fusarium verticillioides* (Sacc.) Nirenberg; *Fusarium moniliforme*[21] Sheldon	*C. annuum* (Escalona *et al*., 2006; Farr and Rossman, 2011; Ngwanma, 1981)*; Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; CABI, 2006); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A

[21] The name *Fusarium moniliforme* should no longer be used (Farr and Rossman, 2011).

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Gibberella subglutinans (E. Edwards) P.E. Nelson, Toussoun & Marasas Anamorph: *Fusarium subglutinans* (Wollenw. & Reinking) P.E. Nelson, Toussoun & Marasas	*C. annuum* (Farr and Rossman, 2006; Utkhede and Mathur, 2005)	CO (Buriticá, 1999); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Gibberella zeae (Schwein.:Fr.) Petch Anamorph: *Fusarium graminearum* Schwabe	*C. frutescens* (Farr and Rossman, 2011)	CO (Buriticá, 1999; Castaño, 1978; Varón de Agudelo and Sarria, 2007); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Globisporangium debaryanum (R. Hesse) Uzuhashi, Tojo & Kakish. Syn.: *Pythium debaryanum* R. Hess	*C. annuum* (CABI, 2006; Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; CABI, 2006; Castaño, 1978; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A
Globisporangium spinosum (Sawada) Uzuhashi, Tojo & Kakish. Syn: *Pythium spinosum* Sawada	*C. frutescens* (Alfieri et al., 1994); *Capsicum* sp. (CABI, 2006)	CO (Armenta et al., 1992; Buriticá, 1999); US (Alfieri et al., 1994; Farr and Rossman, 2011; Spencer, 2005)	No	N/A	N/A
Globisporangium ultimum (Trow) Uzuhashi, Tojo & Kakish. Syn: *Pythium ultimum* Trow	*C. annuum; C frutescens* (Farr and Rossman, 2011, Wellman, 1977); *C. baccatum* (Wellman, 1977)	CO (Farr and Rossman, 2011; Wellman, 1977); US (Alfieri et al., 1994; CABI, 1981; Cannon, 2005; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Gloeosporium sp.	*C. annuum* (Alfieri *et al.*, 1994; Farr and Rossman, 2011)	CO (Buriticá, 1999; Sañudo and Zuñiga, 1991)	Yes	L (Alfieri et al., 1994)	No
Glomerella acutata Guerber & J.*C.* Correll Anamorph: *Colletotrichum acutatum* J.H. Simmonds	*C. annuum* (EPPO, 2007; Farr and Rossman, 2011; Xia et al., 2011)*; C. frutescens* (Farr and Rossman, 2011; Dyko and Mordue,1979); *Capsicum* sp. (CABI, 2006; Farr and Rossman, 2011)	CO (Osorio, 2003; CABI, 2006); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Glomerella cingulata (Stonem.) Spauld. & Schrenk Syn.: *Colletotrichum gloeosporioides* (Penz.) Sacc	*C. annuum* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Furtado et al., 2004; Wellman, 1977); *C. baccatum* (Buriticá, 1999; Wellman, 1977); *C. chinense* (McGovern, 1995); *C. frutescens* (Alfieri et al., 1994; Buriticá, 1999; Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (Buriticá, 1999; CABI, 2006; Farr and Rossman, 2011)	CO (Bravo et al., 1993; Buriticá, 1999; CABI, 2006; Tamayo and Jaramillo, 2006; Pardo-Cardona, 1995); US (CABI, 2006; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A
Glomerella truncata C.L. Armstrong & Banniza Anamorph: *Colletotrichum truncatum* (Schwein.) Andrus & W.D. Moore	*C. annuum* (CABI, 2006; Farr and Rossman, 2011); *C. frutescens, Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; CABI, 2006; Castaño, 1978); US (Alfieri et al., 1994, CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Golovinomyces cichoracearum (DC.) V.P. Heluta Syn.: *Erysiphe cichoracearum* D*C.*	*C. annuum* (Alfieri et al., 1994; Farr and Rossman, 2011); *Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; Molina, 1982); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Molina, 1982)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Haematonectria haematococca (Berk. & Broome) Samuels & Rossman Syn.: *Nectria haematococca* Berk. & Broome Anamoph: *Fusarium solani* (Mart.) Sacc.	*C. annuum* (CABI, 2006; Escalona, 2006; Farr and Rossman, 2011; Jarvis and Khosla, 1994); *C. frutescens* (Farr and Rossman, 2011); *C. chinense* (Cadeño et al., 2003) *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; CABI, 2006; Castaño, 1978); US (CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Helminthosporium sp.	*C. annuum* (Alfieri et al., 1994; Farr and Rossman, 2011; Wellman, 1977); *C. baccatum*, *C. frutescens* (Wellman, 1977)	CO (Buriticá, 1999; Castaño, 1978; Pardo-Cardona, 1995)	Yes	L (Alfieri et al., 1994; Wellman, 1977)	No
Leptosphaerulina trifolii (Rostr.) Petr	*Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; Farr and Rossman, 2011); US (CABI, 2006, Farr and Rossman, 2011)	No	N/A	N/A
Leveillula taurica (Lév.) G. Arnaud	*C. annuum* (CABI, 2006; Farr and Rossman, 2011; Holliday, 1980; Paz et al., 2010; Pest ID, 2011; Wellman, 1977); *C. baccatum* (Farr and Rossman, 2011; Wellman, 1977); *C. chinense* (Farr and Rossman, 2011); *C. frutescens* (Farr and Rossman, 2011; Holliday, 1980; Wellman, 1977); *C. pubescens* (Holliday, 1980) *Capsicum* sp. (Blat, 2005; CABI, 2006; CABI, 1978; Farr and Rossman, 2011; Pest Directory, 2007; Pest ID, 2011)	CO (Buriticá, 1999); US (CABI, 1978; CABI, 2006; Farr and Rossman, 2011; Glawe, 2005; Pernezny, 2003)	No	N/A	N/A
Macrophoma sp.	*C. annuum* (Farr and Rossman, 2011); *C. frutescens* (Alfieri *et al*., 1994)	CO (Castaño, 1978)	Yes	R (Alfieri et al., 1994)	No

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
*Macrophomina phaseolina (*Tassi) Goid.	*C. annuum* (Alfieri *et al*., 1994; CABI, 2006; Farr and Rossman, 2011; Kadlicsko and Kovacs, 1999; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (Farr and Rossman, 2011; Pernezny et al., 2003)	CO (Ancizar and Millan, 1993; Buriticá, 1999; CABI, 2006); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A
Moniliophthora perniciosa (Stahel) Aime & Phillips-Mora Syn: *Crinipellis perniciosa* (Stahel) Singer	*C. annuum* (Farr and Rossman, 2011; Marelli et al., 2009)	CO (Buriticá, 1999; Rodriguez and Saavedra, 2005)	Yes	Fl, F, S (Farr and Rossman, 2011)	Yes[22]
Myrothecium roridum Tode: Fr	*C. annuum* (Farr and Rossman, 2011)	CO, US (CABI, 2006; CABI, 1969; Farr and Rossman, 2011)	No	N/A	N/A
Myrothecium verrucaria (Alb. & Schwein.) Ditmar : Fr.	*C. annuum* (Farr and Rossman, 2011); *Capsicum* sp. (CABI, 2006; Pest Directory, 2007)	CO (Buriticá, 1999); US (Alfieri at al., 1994; Farr and Rossman, 2011)	No	N/A	N/A
Nematospora coryli Peglion	*C annuum, C baccatum* (Wellman, 1977); *C. frutescens* (Alfieri et al.,1994; Farr and Rossman, 2011; Wellman, 1977)	CO (Buriticá, 1999); US (Alfieri et al.,1994; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A
Oidiopsis sícula Scalia	*C. annuum, C. frutescens* (Farr and Rossman, 2011)	CO (Buriticá, 1999); US (Alfieri *et al.* 1994; Farr and Rossman, 2011)	No	N/A	N/A

[22]*Moniliophthora perniciosa* biotype C only affects leaves, flowers, stems, and fruits of cocoa (*Theobroma cacao*), while biotype S affects solanaceous species, including *Capsicum* (Marelli et al., 2009). This pest is reported in Colombia only on *cacao* (Farr and Rossman, 2011). Given the host specificity of the biotypes and the report on cocoa in Colombia, the evidence seems to indicate that only biotype C is present. Therefore, we did not further analyze this pathogen.

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Oidiopsis sp.	*C. annuum, C frutescens* (Farr and Rossman, 2011; Tamayo and Jaramillo, 2006); *C. chinense, C. pubescens* (Tamayo and Jaramillo, 2006)	CO (Tamayo and Jaramillo, 2006)	Yes	L (Tamayo and Jaramillo, 2006)	No
Oidium neolycopersici L. Kiss	*Capsicum* sp. (Pest Directory, 2007)	CO (Rodriguez et al., 2009); US (CABI, 2007a; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Oidium sp.	*C. annuum, C. frutescens* (Farr and Rossman, 2011) *Capsicum* sp. (Tamayo and Jaramillo, 2006)	CO (Buriticá, 1999; Tamayo and Jaramillo, 2006)	Yes	S, L (Tamayo and Jaramillo, 2006)	No
Olpidium brassicae (Woronin) P.A. Dang	*C. annuum* (CABI, 2006)	CO (CABI, 2006; CABI, 1979); US (CABI, 2006; CABI, 1979; Farr and Rossman, 2011)	No	N/A	N/A
Penicillium oxalicum Currie & Thom	*C. annuum* (Farr and Rossman, 2011)	CO (Buriticá, 1999); US (CABI, 2006; Farr and Rossman)	No	N/A	N/A
Pestalotiopsis palmarum (Cooke) Steyaert	*C. annuum* (Farr and Rossman, 2011); *Capsicum* (Mordue and Holliday, 1971; Robert *et al.*, 2005)	CO (Buriticá, 1999; Mordue and Holliday, 1971; Robert et al., 2005); US (Alfieri, 1994; Farr and Rossman, 2011; Mordue and Holliday, 1971; Robert, *et al.*, 2005)	No	N/A	N/A
Petromyces flavus B.W. Horn, I. Carbone & G.G. Moore Syn.: *Aspergillus flavus* Link	*C. frutescens*, *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; CABI, 2006; Castaño, 1978); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Phoma gossypiicola Gruyter Syn.: *Ascochyta gossypii* (Woronichin) Syd.	*C. annuum, C frutescens, C. pubescens* (Holliday, 1980)	CO (CABI, 2006; Buriticá, 1999; Castaño, 1978; Pardo-Cardona, 1995; Orjuela, 1965); US (Alfieri, 1994; CABI, 2006; Farr and Rossman; 2011)	No	N/A	N/A
Phytophthora cactorum (Lebert & Cohn) J. Schröt.	*C. annuum, C frutescens* (Farr and Rossman, 2011)	CO (Buriticá, 1999; López and Garces, 1998); US (Alfieri *et al*., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Phytophthora capsici Leonian	*C. annuum* (Alfieri *et al*., 1994; CABI, 2006; EPPO, 2007; Escalona *et al.* 2006*;* Farr and Rossman, 2011; Holliday, 1980; García-Rodríguez et al., 2010; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Alfieri *et al*., 1994; CABI, 2006; EPPO, 2007; Farr and Rossman, 2011; Holliday, 1980; Wellman, 1977); *C. pubescens* (Holliday, 1980*); Capsicum* sp. (CABI, 2006; Farr and Rossman, 2011; Meitz et al., 2010; PestID, 2010; Pest Directory, 2007; Robert et al., 2005; Stamps, 1984)	CO (Buriticá, 1999; Tamayo and Jaramillo, 2006); US (Alfieri *et al*.1994; CABI, 2006; EPPO, 2007; Farr and Rossman, 2011; Pest Directory, 2007; Robert et al., 2005; Stamps, 1984)	No	N/A	N/A
Phytophthora citrophthora (R.E. Sm. & E.H. Sm.) Leonian	*C. annuum* (Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. pubescens, C. frutescens* (Farr and Rossman, 2011) *Capsicum* sp. (Pest Directory, 2007).	CO (Buriticá, 1999; León et al., 2007); US (CABI, 2006; Farr and Rossman, 2011; Waterhouse and Waterston, 1964; Wellman, 1977)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Phytophthora drechsleri Tucker	*C. annuum* (Farr and Rossman, 2011); *Capsicum* sp. (Farr and Rossman, 2011; Pest Directory, 2007)	CO, US (CABI, 2006; Farr and Rossman, 2011; Robert et al., 2005; Stamps, 1984)	No	N/A	N/A
Phytophthora infestans (Mont.) de Bary	*C. annuum* (CABI, 2006; Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Farr and Rossman, 2011; Pardo-Cardona, 1995; Wellman, 1977)	CO (Buriticá, 1999; CABI, 2006; Farr and Rossman, 2011; Pardo-Cardona, 1995); US (Alfieri *et al.*, 1994; CABI, 2006; CABI, 1982a; Farr and Rossman, 2011)	No	N/A	N/A
Phytophthora nicotianae Breda de Haan	*C. annuum* (Alfieri *et al.*, 1994; Allagui et al., 1996; Bnejdi et al., 2010; Farr and Rossman, 2011; Hall, 1994); *C. frutescens* (Alfieri *et al.*, 1994; Farr and Rossman, 2011); *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; CABI, 2006; CABI, 1989; Farr and Rossman; 2011; Morales and Lopez, 2004); US (Alfieri *et al.*, 1994; CABI, 2006; CABI, 1989; Farr and Rossman, 2011)	No	N/A	N/A
Phytophthora palmivora var. *palmivora* (E.J. Butler) E.J. Butler	*C. annuum* (Farr and Rossman, 2011;Wellman, 1977); *C. baccatum*; *C. frutescens* (Wellman, 1977)	CO (Buriticá, 1999; CABI, 2006; Castaño, 1978; Farr and Rossman, 2011; Pardo-Cardona, 1995); US (Alfieri *et al.*, 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Phytophthora sp.	*C. annuum* (Buriticá, 1999; Escalona et al., 2006; Farr and Rossman, 2011; Pardo-Cardona, 1995); *C. frutescens* (Farr and Rossman, 2011); *Capsicum* sp. (Buriticá, 1999; Pardo-Cardona, 1995)	CO (Buriticá, 1999; Farr and Rossman, 2011; Pardo-Cardona, 1995)	Yes	F (Pardo-Cardona, 1995)	Yes

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Pleospora herbarum (Pers.:Fr.) Rabenh. Anamorph: *Stemphylium botryosum* Wallr.	*C. annuum* (Holliday, 1980; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Farr and Rossman, 2011; Holliday, 1980; Wellman, 1977); *C. pubescens* (Holliday, 1980)	CO (Buriticá, 1999; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A
Pleospora tarda E.G. Simmons Anamorph: *Stemphylium botryosum* Wallr.	*C. annuum*, *C. frutescens* (Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977)	CO (Buriticá, 1999; Farr and Rossman, 2011); US (CABI, 2006; Farr and Rossman, 2011; Reed and Woodward, 2010; Wellman, 1977)	No	N/A	N/A
Pseudocercospora atromarginalis (G.F. Atk.) Deighton. Syn.: *Cercospora rigospora* G.F. Atk.	*C. annuum*, *Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá; 1999; Pardo-Cardona, 1995); US (Alfieri et al., 1994; Farr and Rossman, 2011)	No	N/A	N/A
Puccinia pampeana Speg. Anamorph: *Endophyllum pampeanum* (Speg.) J.C. Lindq. Syn.: *Puccinia capsicicola* F. Kern & Thurst.	*C. annuum*, *C. baccatum*, *C. frutescens* (Buriticá, 1999; Farr and Rossman, 2011; Tamayo and Jaramillo, 2006; Wellman, 1977); *C. chinense*, *C. pubescens* (Tamayo and Jaramillo, 2006); *Capsicum* sp. (Buriticá, 1999; Farr and Rossman, 2011; Passador et al., 2009)	CO (Buriticá, 1999; Farr and Rossman, 2011; Pardo-Cardona, 1995; Tamayo & Jaramillo, 2006; Wellman, 1977)	Yes	F, L, S, Sh (Passador et al., 2009); L, S (Tamayo & Jaramillo, 2006)	Yes
Pythium aphanidermatum (Edson) Fitzp.	*C. annuum*, *C frutescens* (Farr and Rossman, 2011; Wellman, 1977); *C. baccatum* (Wellman, 1977); *Capsicum* sp. (CABI, 2006; Farr and Rossman, 2011; Pest Directory, 2007)	CO (Armenta et al., 1992; Buriticá, 1999; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; CABI, 1978a; Farr and Rossman, 2011; Wellman, 1977)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Pythium graminicola Subraman.	*C. annuum* (Farr and Rossman, 2011)	CO (Armenta et al., 1992; Buriticá, 1999; Victoria et al., 1995); US (CABI, 2006; CABI, 1968; Farr and Rossman, 2011; Waterhouse and. Waterston, 1964a);	No	N/A	N/A
Pythium myriotylum Drechsler	*C. annuum* (Alfieri *et al*., 1994; Pest Directory, 2007)	CO (Buriticá, 1999; Vargas and Trutmann, 1991); US (Alfieri *et al*., 1994; CABI, 2006; CABI, 1990; Farr and Rossman, 2011; Waterhouse and. Waterston, 1966)	No	N/A	N/A
Ramularia sp.	*C. annuum*, *Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; Pardo-Cardona, 1995)	Yes	L (Pardo-Cardona, 1995)	No
Rhizoctonia sp.	*C. annuum* (Escalona et al., 2006; Farr and Rossman, 2011); *C. frutescens*, *Capsicum* sp. (Farr and Rossman, 2011)	CO (Buriticá, 1999; Castaño, 1978; Pardo-Cardona, 1995)	Yes	R, S (Alfieri *et al*., 1994)	No
Rhizopus stolonifer (Ehrenb: Fr.) Vuill.	*C. annuum* (Alfieri et al., 1994*;* Farr and Rossman, 2011; Holliday, 1980; Tamayo and Jaramillo, 2006; Wellman, 1977); *C. frutescens* (Farr and Rossman, 2011; Holliday, 1980; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. pubescens* (Holliday, 1980)	CO (Buriticá, 1999; CABI, 2006; Delgadillo et al.,2003*;* Farr and Rossman, 2011; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Sclerotinia minor Jagger	*C. annuum* (Farr and Rossman, 2011; Gonzales et al., 1998)	CO (Buriticá, 1999; Castaño, 1978); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Sclerotinia sclerotiorum (Lib.) de Bary	*C. annuum* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Tamayo and Jaramillo, 2006; Wellman, 1977; Yanar and Miller, 2003; Yanar, 1996); *C. baccatum* (Wellman, 1977); *C. frutescens* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977); *Capsicum* sp. (Farr and Rossman, 2011; Pest Directory, 2007)	CO (Buriticá, 1999; Castaño, 1978; Tamayo and Jaramillo, 2006; Tamayo et al., 2001); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Wellman, 1977; Yanar, 1996)	No	N/A	N/A
Septoria lycopersici var. *lycopersici* Speg. Syn.*: S. lycopersici* Speg.	*C. annuum* (Farr and Rossman, 2011)	CO (Buriticá, 1999; Castaño, 1978; Farr and Rossman, 1999; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Spongospora subterranea f. sp. *subterranea* Tomlinson	*C. annuum* (CABI, 2006)	CO (Buriticá, 1999; CABI, 2006); US (CABI, 2006)	No	N/A	N/A
Stemphylium solani G.F. Weber	*C. annuum*, *C frutescens* (Alfieri et al., 1994; Farr and Rossman, 2011; Holliday, 1980; Tamayo and Jaramillo, 2006; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. pubescens* (Holliday, 1980)	CO (Buriticá, 1999; CABI, 1979a; Castaño, 1978; Ellis and Gibson, 1975; Tamayo and Jaramillo, 2006; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 1979a; Ellis and Gibson, 1975; Farr and Rossman, 2011)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Thanatephorus cucumeris (A.B. Frank) Donk Anamorph: *Rhizoctonia solani* J.G. Kühn	*C. annuum* (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011; Holliday, 1980; Escalona et al., 2006; Wellman, 1977); *C. baccatum* (Buriticá, 1999; Wellman, 1977); *C. frutescens* (Alfieri et al., 1994; Buriticá, 1999; Farr and Rossman, 2011; Holliday, 1980; Wellman; 1977); *C. pubescens* (Holliday, 1980); *Capsicum* sp. (Buriticá, 1999; Castaño, 1978; Farr and Rossman, 2011; Pest Directory, 2007)	CO (Buriticá, 1999; Castaño, 1978; Prado et al, 2000); US (Alfieri et al., 1994; Baird and Carling, 1997; Farr and Rossman, 2011)	No	N/A	N/A
Thielaviopsis basicola (Berk. & Broome) Ferraris	*C. frutescens* (Farr and Rossman, 2011); *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; CABI, 2006; Farr and Rossman, 2011; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Verticillium albo-atrum Reinke & Berthier	*C. annuum*, *C frutescens* (Alfieri et al., 1994; Farr and Rossman, 2011); *Capsicum* sp. (Pest Directory, 2007; Sonago, 2003)	CO (Buriticá, 1999; CABI, 2006; Pardo-Cardona, 1995); US (Alfieri et al., 1994; CABI, 2006; Farr and Rossman, 2011)	No	N/A	N/A
Verticillium dahliae Kleb.	*C. annuum* (CABI, 2006; Farr and Rossman, 2011; Holliday, 1980); *C. frutescens* (Farr and Rossman, 2011; Holliday, 1980); *C. pubescens* (Holliday, 1980); *Capsicum* sp. (Pest Directory, 2007)	CO (Buriticá, 1999; CABI, 2006; Pardo-Cardona, 1995); US (Alfieri et al., 1994;CABI, 2006; Farr and Rossman)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
BACTERIA					
Clavibacter michiganensis subsp. *michiganensis* (Smith) Davis et al.	*C. annuum* (CABI, 2006; Alfieri et al., 1994); *Capsicum* sp. (Perznezny et al., 2003; Pest Directory, 2007)	CO (Bradbury, 1986; Buriticá, 1999; CABI, 2006); US (Bradbury, 1986; CABI, 2006)	No	N/A	N/A
Dickeya chrysanthemi (Burkholder et al.) Samson et al. Syn.: *Erwinia chrysanthemi* (Burkh.) Young et al.	*C. annuum* (Alfieri et al., 1994; CABI, 2006; EPPO, 2007)	CO (CABI, 2006; EPPO, 2007); US (Alfieri et al., 1994; CABI, 2006; EPPO, 2007)	No	N/A	N/A
Erwinia sp.	*C. annuum* (Buriticá, 1999; Escalona et al., 2006; Tamayo and Jaramillo., 2006)	CO (Buriticá, 1999; Castaño, 1978; Tamayo and Jaramillo, 2006)	Yes	F (Tamayo and Jaramillo, 2006), R (Escalona et al., 2006)	Yes
Pectobacterium atrosepticum (van Hall) Gardan et al. Syn.: *Erwinia carotovora* subsp. *atroseptica* (van Hall) Dye	*C. annuum* (Stommel et al., 1996)	CO (Bradbury, 1986; Buriticá, 1999; CABI, 2006); US (Bradbury, 1986; CABI, 2006)	No	N/A	N/A
Pectobacterium carotovorum subsp. *carotovorum* (Jones) Hauben et al.	*C. annuum* (Alfieri et al., 1994; Bradbury, 1986; CABI, 2006); *C. frutescens* (Alfieri et al., 1994; Bradbury, 1986); *Capsicum* sp. (CABI, 2006)	CO (Buriticá, 1999; CABI, 2006); US (Alfieri et al., 1994; CABI, 2006)	No	N/A	N/A
Pseudomonas cichorii (Swingle) Stapp	*C. annuum* (CABI, 2006; EPPO, 2007); *Capsicum* sp. (Bradbury, 1986)	CO (CABI, 2006a; Navarro, 1988); US (Bradbury, 1970; Bradbury, 1986; CABI, 2006; CABI, 2006a)	No	N/A	N/A
Pseudomonas syringae pv. *tabaci* (Wolf & Foster) Young *et al.*	*C. annuum* (CABI, 2006)	CO (Bradbury, 1986; Buriticá, 1999; CABI, 2006); US (Alfieri *et al.* 2006; Bradbury, 1986; CABI, 2006)	No	N/A	N/A

Pest Scientific Name[5]	***Capsicum* sp.**	**Distribution**[6]	**Quarantine pest**	**Plant part(s)**[7]	**Follow pathway**
Ralstonia solanacearum (Smith) Yabuuchi et al. Syn.: *Pseudomonas solanacearum* (Smith) Smith	*C. annuum* (Bradbury, 1986; CABI, 2006; Escalona et al., 2006; Coelho Netto et al., 2004; Wellman, 1977); *C. chinense* (Coelho Netto et al., 2004); *C. frutescens* (Coelho Netto et al., 2004; Wellman, 1977); *Capsicum* sp. (Pernezny et al., 2003)	CO (Bradbury, 1986; Buriticá, 1999; Castaño, 1978; Tamayo and Jaramillo, 2006); US (Alfieri et al., 1994; Bradbury, 1986; CABI, 2006; Pernezny et al., 2003)	No	N/A	N/A
Ralstonia solanacearum race 1 (Smith) Yabuuchi et al.	*C. annuum* (CABI, 2006; EPPO, 2007)	CO, US (CABI, 1999; CABI, 2006)	No	N/A	N/A
Rhizobium radiobacter (Beijerinck & van Delden) Young et al. Syn.: *Agrobacterium tumefaciens* (Smith & Townsend) Conn; *A. radiobacter* (Beijerinck & van Delden) Conn	*C. annuum* (Bradbury, 1986; CABI, 2006)	CO (Bradbury; 1986; CABI, 2006); US (Alfieri et al., 1994; Bradbury, 1986; CABI, 2006)	No	N/A	N/A
Xanthomonas campestris (Pammel) Dowson	*C. annuum, C frutescens* (Alfieri et al., 1994); *Capsicum* sp. (CABI, 2006; PestID, 2011)	CO (Buriticá, 1999; Castaño, 1978); US (Alfieri et al., 1994; CABI, 2006)	No	N/A	N/A
Xanthomonas vesicatoria (ex Doidge) Vauterin *et al*.	*C. annuum* (Alfieri et al., 1994; CABI, 2006; EPPO, 2007; Tamayo and Jaramillo, 2006; Ramirez et al., 2004; Riva-Souza et al., 2007; Wellman, 1977); *C. baccatum* (Wellman, 1977); *C. frutescens* (Hayward and Waterston, 1964; Wellman, 1977); *Capsicum* sp. (CABI, 2006; Pest Directory, 2007; PestID, 2011)	CO (Buriticá, 1999; CABI, 2006; Castaño, 1978; Tamayo and Jaramillo, 2006); US (Alfieri et al., 1994; CABI, 2006; CABI, 1981; Perznezny et al., 2003)	No	N/A	N/A

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
VIRUSES					
Alfalfa mosaic virus (AMV)	*C. annuum* (Abdalla et al., 1991; Brunt et al., 1996; CABI, 2006; Hamm et al., 1995; Bücchen-Osmon, 2006); *C. frutescens* (Brunt et al., 1996); *Capsicum* sp. (Pernezny et al., 2003)	CO (Brunt et al., 1996; Buriticá, 1999; Bücchen-Osmon, 2006); US (Abdalla et al., 1991; Brunt et al., 1996; Hamm et al., 1995; Bücchen-Osmon, 2006)	No	N/A	N/A
Andean potato mottle virus (APMoV)	*C. annuum, C. chinense* (Valverde et al., 1995); *C. frutescens* (Valverde et al., 1995; EPPO, Sine die)	CO (EPPO 2007; Garcia et al., 1999)	Yes	Fl, F, L, S (CABI, 2006)	No[23]
Cucumber mosaic virus (CMV)	*C. annuum* (Abdalla et al., 1991; Brunt et al., 1996); *C. frutescens* (Brunt et al., 1996; Grube et al., 2000); *Capsicum* sp. (Pardey et al., 2009; Pernezny et al., 2003)	CO (CABI, 2002; EPPO 2007; Pardey et al., 2009); US (Abdalla et al., 1991; CABI, 2002; EPPO 2007; Tzanetakis, 2009**)**	No	N/A	N/A
Deforming pepper mosaic virus (PepDMV)	*C. annuum, C. frutescens, C. chinense , C. baccatum* (Pardey et al., 2010); *C. annuum, C. frutescens, C. chínense* (Garcia and Pardey, 2009)	CO (Garcia and Pardey, 2009; Pardey et al., 2010)	Yes	L, S (Pardey et al., 2010)	No[24]
Impatiens necrotic spot virus (INSV)	*Capsicum* sp. (Tamayo and Jaramillo 2006; Pernezny et al., 2003); *C. annuum* (Naidu et al., 2005; Ormeño and Sepulveda, 2005)	CO (Tamayo and Jaramillo 2006); US (Brunt et al., 1996; CABI, 2007; Crosslin and Hamlin, 2010; McGovern et al., 1997**)**	No	N/A	N/A
Potato mop top virus (PMTV)	*C. annuum* (Brunt et al., 1996); *C. chinense, C. frutescens* (Pernezny et al., 2003)	CO (EPPO 2005); US (EPPO 2005; Xu et al., 2004)	No	N/A	N/A

[23] Andean potato mottle virus (APMoV) is not transmitted by true seeds, but by tubers of infected potato (CABI, 2006; Brunt et al, 1996). The principal vectors are the beetles, *Diabrotica balteata* Leconte and *D. viridula* Fabricius. The adult stage is associated with leaves and the larval stage with soil. Although these vectors are present in Colombia, they do not follow the pathway.

[24] Serological tests carried out by the International Center for Tropical Agriculture, CIAT, determined that PepDMV is not transmitted by seed (Garcia, 2011).

Pest Scientific Name[5]	*Capsicum* sp.	Distribution[6]	Quarantine pest	Plant part(s)[7]	Follow pathway
Potato virus X (PVX)	*C. annuum* (Abdalla et al., 1991); *Capsicum* sp. (Pernezny et al., 2003)	CO (Buriticá, 1999); US (Abdalla et al., 1991)	No	N/A	N/A
Potato Virus Y (PVY)	*C. annuum* (Abdalla et al., 1991); *Capsicum* sp. (Pernezny et al., 2003)	CO (CABI, 2005); US (Abdalla et al., 1991; CABI, 2005)	No	N/A	N/A
Tobacco leaf curl virus (TLCV)	*C. annuum* (Brunt et al., 1996); *Capsicum* sp. (Pernezny et al., 2003)	CO (CABI, 1975); US (CABI, 1975; Osaki and Inouye, 1981)	No	N/A	N/A
Tobacco mosaic virus (TMV)	*C. annuum* (Abdalla et al., 1991; Murphy, 2003); *C. frutescens* (Brunt et al., 1996); *Capsicum* sp. (Cezar et al., 2009; Pardey et al.,2009; Pardey et al., 2009; Pernezny et al., 2003)	CO (Tamayo and Jaramillo, 2006; Pardey et al., 2009); US (Abdalla et al., 1991; Alfieri et al., 1994; Murphy et al., 2003)	No	N/A	N/A
Tomato spotted wilt virus (TSWV)	*C. annuum* (Brunt et al., 1996); *Capsicum* sp. (Tamayo and Jaramillo, 2006)	CO (EPPO 1999; CABI 1999; Tamayo and Jaramillo 2006); US (Alfieri et al., 1994; EPPO, 2007; CABI 1999.)	No	N/A	N/A

2.4.1. Quarantine Pests Not Considered for Risk Mitigation

Some quarantine plant pests listed above may be detrimental to U.S. agricultural production systems, but were not chosen for further analysis, for reasons explained below. For example, they may be mainly associated with plant parts other than the commodity; associated with the commodity, but not likely to remain with the commodity through standard harvest and post-harvest processing; have been intercepted as biological contaminants of these commodities during U.S. agricultural port-of-entry inspection, but are not likely to be present in commercial shipments; or were identified only to the genus level, and the genus in question occurs in the continental United States.

Organisms Not Identified to Species. Organisms listed at the level of genus, although regarded as quarantine pests because of their uncertain identity, are not considered for further analysis as their identity is not defined clearly enough to ensure that the risk assessment is performed on a distinct organism (IPPC, 2016b). Thus, we did not analyze *Alternaria* sp., *Colletotrichum* sp., *Erwinia* sp., *Fusarium* sp., or *Phytophthora* sp. At least one species within each of these genera is already present in the continental United States.

Doubtful host association. Several species were not listed above because their association with the commodity is doubtful. For example, without further information, we consider one or a few interceptions (three or fewer records) at U.S. ports-of-entry on a commodity (PestID, 2011) to be insufficient evidence of a host association, especially if the interception occurred on produce in situations other than cargo. This was the case for the following species: *Aeolus nigromaculatus* [Coleoptera: Elateridae], *Aleurocanthus woglumi* [Hemiptera: Aleyrodidae], *Coccus viridis* [Hemiptera: Coccidae], *Corythaica cyathicollis* [Hemiptera: Tingidae**]**, *Dysmicoccus neobrevipes* [Hemiptera: Pseudococcidae], *Maruca vitrata* [Lepidoptera: Crambidae], *Oebalus ornatus* [Hemiptera: Pentatomidae], *Orphulella punctata* [Orthoptera: Acrididae], *Pectinophora gossypiella* [Lepidoptera: Gelechiidae], and *Sitophilus zeamais* [Coleoptera: Dryophthoridae].

The eriophyoid, *Aculops capsibaccati*, is reported on *Capsicum baccatum* in Colombia by Posada (1989) and Keifer (1979); however, the source cited by Keifer (1979) was based on the paper by Urueta (1975), which does not report this pest in the Department of Antioquia, as the title suggests. Other databases and literature do not report this mite in Colombia (CABI, 2006; Figueroa 1977; Gallego and Velez, 1992; Jeppson et al., 1975), and there have been no national detections or interceptions from Colombia (PestID, 2011).

Monilina fructigena is reported on *Capsicum* by CABI (2006) and Mackie (2000). However, these references do not provide enough scientific evidence to confirm that *Capsicum* is a host of *M. fructigena*. After reviewing the international literature and databases, it was determined that *M. fructigena* is mainly a pathogen of the genera *Prunus* and *Malus* (CABI and EPPO, 2000; Côté et al, 2004; De Cal and Melgarejo, 1999; Farr and Rossman, 2011; Holb and Scherm, 2008; Leeuwen et al., 2002; Robert et al., 2005; Villarino and Melgarejo, 2010; Xu et al., 2001; Xu and Robinson, 2000). In Colombia, *M. fructigena* has been reported on *Prunus persica* (Blanco, 1992; Buriticá, 1999; Pardo-Cardona, 1995). In addition, *M. fructigena* has not been intercepted on *Capsicum*.

2.4.2. Quarantine pests that follow the pathway and are candidates for risk mitigation

We identified five quarantine pests for further analysis (Table 7). All of these pests are reasonably expected to follow the pathway (i.e., be included in commercial shipments of pepper fruit from Colombia).

Table 7. Quarantine pests likely to follow the pathway.

Type	Organism	Taxonomy
Arthropods	*Anastrepha fraterculus*	Diptera: Tephritidae
	Ceratitis capitata	Diptera: Tephritidae
	Copitarsia decolora	Lepidoptera: Noctuidae
	Neoleucinodes elegantalis	Lepidoptera: Pyralidae
Pathogen	*Puccinia pampeana*	Urediniomycetes: Uredinales

2.5. Analysis of Quarantine Pests

For the quarantine pests selected for further analysis, we assessed their likelihood of introduction into the continental United States and the undesirable consequences that may result from their introduction. We rated the pests using the criteria in the *Guidelines for Pathway-Initiated Pest Risk Assessments, Version 5.02* (PPQ 2000). We calculated a cumulative risk rating, or Pest Risk Potential, for each pest by summing all risk element values. Below we summarize the values for each pest (Table 7).

2.5.1. Consequences of Introduction

For the quarantine pests listed in Table 7, we rated the potential Consequences of Introduction using five Risk Elements: Climate-Host Interaction, Host Range, Dispersal Potential, Economic Impact, and Environmental Impact. These elements reflect the biology, host ranges, and climatic/geographic distributions of the pests. For each Risk Element, we assigned pests a rating of Low (1 point), Medium (2 points), or High (3 points) (PPQ 2000). We then calculated a Cumulative Risk Rating by summing the Risk Element values. We summarized the ratings for the Consequences of Introduction for each pest below (Table 8).

Anastrepha fraterculus	**Risk ratings**
Risk Element #1: Climate-Host Interaction *Anastrepha fraterculus* represents a species complex (e.g., CABI, 2011; Caceres et al., 2009; Foote et al., 1993; Weems, 2002; White and Elson-Harris, 1992). The sibling species in this complex vary with regard to morphology and pest status (Foote et al., 1993; Weems, 2002). *Anastrepha fraterculus* occurs in North, Central, and South America and the Caribbean, ranging from Mexico to Argentina (CABI, 2011; Foote et al., 1993; PPQ, 2002). In addition to Mexico (restricted distribution), the species occurs in Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Trinidad and Tobago, Argentina (restricted distribution), Bolivia, Brazil, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela (CABI, 2011; PPQ, 2002). This distribution covers a temperature range corresponding to USDA Plant Hardiness Zones 8-11 (Magarey et al., 2008). Thus, we think that areas of the continental United States in USDA Plant Hardiness Zones 8-11 would provide suitable climatic conditions for establishment of the pest. In these areas, multiple hosts of *A. fraterculus* are present (e.g., *Citrus aurantium, Prunus persica, Pyrus communis*) (Kartesz, 2010). Because Zone 11 only comprises approximately 0.1 percent of the United States (PERAL, 2008), we do not count it toward the total number of zones for determining the Climate-Host Interaction risk rating. Therefore, we rate this element as Medium.	Medium (2)
Risk Element #2: Host Range *Anastrepha fraterculus* feeds on multiple genera in multiple plant families, including Actinidiaceae (*Actinidia*), Anacardiaceae (*Mangifera, Spondias, Anacardium*), Annonaceae (*Annona*), Combretaceae (*Terminalia*), Ebenaceae (*Diospyros*), Fabaceae (*Inga*), Juglandaceae (*Juglans*), Lauraceae (*Persea*), Moraceae (*Ficus*), Myrtaceae (*Eugenia, Feijoa, Psidium, Syzygium*), Oleaceae (*Olea*), Oxalidaceae (*Averrhoa*), Punicaceae (*Punica*), Rosaceae (*Cydonia,*	High (3)

Anastrepha fraterculus	**Risk ratings**
Eriobotrya, Fragaria, Malus, Prunus, Pyrus, Rubus), Rubiaceae (*Coffea*), Rutaceae (*Citrus, Fortunella*), Sapotaceae (*Manilkara, Pouteria*), Solanaceae (*Solanum*), Sterculiaceae (*Theobroma*), and Vitaceae (*Vitis*) (CABI, 2011; White and Elson-Harris, 1992).	
Risk Element #3: Dispersal Potential *Anastrepha fraterculus* has high reproductive and dispersal potentials. Females can lay up to 50 eggs in a single fruit, depending on maturity and variety of the host fruit (PPQ, 2002). Under laboratory conditions, females deposit from 200 to 400 eggs in total in host fruits (Fletcher, 1989). There can be six to seven generations per year (PPQ, 2002). In mark-release-recapture experiments in Brazil, adults of *A. fraterculus* were captured up to 800 meters from their release point (Kovaleski et al., 1999). The most important means of long-distance movement of *A. fraterculus* is the international trade of infested fruit (CABI, 2007): since 1985, inspectors at U.S. ports-of-entry have intercepted *Anastrepha* species over 39,000 times, mostly with fruit (PestID, 2010). In addition, *A. fraterculus* can be transported as pupae in soil or in packaging or growing media accompanying plants (CABI, 2011).	High (3)
Risk Element #4: Economic Impact The *A. fraterculus* species complex damages economically important plants (Weems, 2002). In Argentina, it is considered the most important pest of citrus (PPQ, 2002). In Brazil, it causes severe yield losses in apple because of resulting fruit malformation and fruit drop, is a major concern of growers, and significantly restricts fresh fruit exports to countries with quarantine barriers (Sugayama et al., 1996). The insect also is an important pest of guava and mango, and to some extent *Prunus* spp. (CABI, 2007). The oviposition punctures ("stings") alone may render fruit unmarketable (Gould and Raga, 2002). The introduction of *A. fraterculus* into new areas of the continental United States would likely stimulate control programs (APHIS, 1984; CABI, 2011; Guillen and Sanchez, 2007; Vera et al., 2007), thereby increasing crop production costs. *Anastrepha fraterculus* is a quarantine pest for numerous countries and regional plant protection organizations (CERIS, 2011; EPPO, 2007), and its introduction into the United States would likely lead to export restrictions of host commodities to markets outside of this pest's known distribution.	High (3)
Risk Element #5: Environmental Impact Because of its broad host range, *A. fraterculus* may attack Federal Threatened and Endangered (T&E) plant species in the continental United States, such as *Prunus geniculata* (endangered species in Florida) (USFWS, 2010). We consider this endangered species a potential host because it is in the same genus as known hosts of *A. fraterculus*. However, *A. fraterculus* only affects the fruit of its hosts. We found no evidence that *A. fraterculus* damages the seeds or other non-fruit parts of their hosts; therefore, we assume this fruit fly would have little, if any, direct effect on the population health of endangered plant species. The wider establishment of *A. fraterculus* in the continental United States would probably trigger the initiation of chemical control (APHIS,	Medium (2)

Anastrepha fraterculus	**Risk ratings**
1984; CABI, 2007; Guillen and Sanchez, 2007) and possibly classical biological control programs, as has occurred in Peru and Argentina (Clausen, 1978; Wharton, 1989a). Based on the potential indirect effects of control programs, as opposed to direct damage caused by this fruit fly, we rate this risk element Medium.	

Ceratitis capitata	**Risk ratings**
Risk Element #1: Climate-Host Interaction *Ceratitis capitata* (Medfly) is native to Africa and has spread throughout the Mediterranean region, Southern Europe (e.g., Spain, Italy, Cyprus), the Middle East, Western Australia, South and Central America (e.g., Argentina, Ecuador, Peru, Colombia), and Hawaii (Fletcher, 1989; White and Elson-Harris, 1992). The species can establish in California, Florida, and Texas, where it has been recorded intermittently and subsequently eradicated (CABI, 2011). Based on this reported distribution, we estimate that Medfly could establish in areas of the continental United States corresponding to USDA Plant Hardiness Zones 8-11 (Magarey et al., 2008). Multiple hosts of Medfly are present in those zones (e.g., *Citrus* spp., *Malus* spp., *Prunus* spp., *Pyrus communis*, *P. calleryana*, *Solanum lycopersicum*) (Kartesz, 2011). Because Zone 11 only comprises approximately 0.1 percent of the United States (PERAL, 2008), we do not count it toward the total number of zones for determining the Climate-Host Interaction risk rating. Therefore, we rate this element Medium.	Medium (2)
Risk Element #2: Host Range Medfly is a polyphagous species that has been recorded from cultivated and wild hosts belonging to at least 51 genera among at least 30 plant families, including Anacardiaceae (*Anacardium, Mangifera, Spondias*), Annonaceae (*Annona*), Cactaceae (*Opuntia*), Malpighiaceae (*Malpighia*), Moraceae (*Artocarpus, Ficus, Morus*), Myrtaceae (*Eugenia, Feijoa, Psidium, Syzygium*), Punicaceae (*Punica*), Rosaceae (*Malus, Mespilus, Prunus*), Rutaceae (*Citrus*), Sapindaceae, (*Blighia, Euphoria, Litchi*), Sapotaceae (*Chrysophyllum, Manilkara, Mimusops, Pouteria*), Solanaceae (*Capsicum, Solanum*), and Vitaceae (*Vitis*) (CABI, 2011; Liquido et al., 1991; Thomas et al., 2010; White and Elson-Harris, 1992).	High (3)
Risk Element #3: Dispersal Potential A Medfly female may lay up to 800 eggs (22 per day) during her lifetime (Thomas et al., 2010). The life cycle under favorable conditions [21.1-32.2°C (70-90°F)] may be completed in three weeks; however, under the climatic conditions in Florida (i.e., at the latitude of Orlando), 10 generations could develop under normal year-round conditions (Knapp, 1998). Adult Medflies can fly as far as 32.2 km (20 miles) (Christenson and Foote, 1960; Steiner et al., 1962). Movement of infested commodities is the major means of dispersal to previously uninfested areas (CABI, 2011). Since 1984, inspectors at U.S. ports-of-entry have intercepted Medfly over 3,000 times (PestID, 2011). Medfly may also disperse via pupae in soil or growing media accompanying plants (CABI, 2011).	High (3)

Ceratitis capitata	**Risk ratings**
Risk Element #4: Economic Impact Because of its wide distribution and its wide host range, Medfly is the most important of the economically important fruit flies (CABI, 2011; Weems, 1981). It reduces crop yields (Steck, 2006) and may transmit fruit-rotting fungi (CABI, 2011). Additionally, costs would be incurred to minimize the impact of Medfly on crop production, because the presence of larvae in the fruit may make the fruit unmarketable (Andrew et al., 1977). The species is of quarantine significance for many countries (Steck, 2006). Its presence, even as temporary adventive populations, can lead to severe constraints for the export of fruits to uninfested areas in other parts of the world; eradication of recurring populations of Medfly in an area (to maintain pest-free status) can be very costly and resource-intensive (Cayol et al., 2002; Steck, 2006).	High (3)
Risk Element #5: Environmental Impact Because of its broad host range, Medfly may affect numerous Federal Threatened and Endangered (T&E) plant species in the continental United States [e.g., *Argemone pleiacantha* ssp. *pinnatisecta* (E), *Asimina tetramera* (E), *Berberis nevivii* (E), *Euphorbia telephioides* (T), *Prunus geniculata* (E), *Ribes echinellum* (T)] (USFWS, 2011). However, Medfly only affects the fruit of its hosts. We found no evidence that Medfly damages the seeds or other non-fruit parts of its hosts; therefore, we assume this fruit fly would have little, if any, direct effect on the population health of threatened or endangered plant species. A potential and indirect effect of the establishment of Medfly is the continuance and possible increase in exotic fruit-fly control programs, which would probably include chemical and biological control (APHIS, 2001; APHIS. 2011; CABI, 2011; Purcell, 1998; Ovruski et al., 2000; Wharton, 1989b). Based on the potential indirect effects of control programs, as opposed to direct damage caused by Medfly, we rate this risk element Medium.	Medium (2)

Copitarsia decolora	**Risk ratings**
Risk Element #1: Climate-Host Interaction *Copitarsia decolora* [*C. turbata*] occurs in Venezuela, Uruguay, Peru, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Argentina and Chile (Angulo and Olivares 2003). Based on this distribution, we estimate that this species is suitable to be established in the Plant Hardiness Zone 8 – 10.	Medium (2)
Risk Element #2: Host Range *Copitarsia decolora* is a polyphagous species and known to attack plants in the families Actinidiaceae, Anacardiaceae, Asteraceae, Brassicaceae, Chenopodiaceae, Fabaceae, Liliaceae, Myrtaceae, Poaceae, Rosaceae, Simmondsiaceae, Solanaceae and Vitaceae ((Angulo and Olivares 2003)). The host species include *Medicago sativa* (Fabaceae), *Capsicum frutescens* and *Solanum tuberosum* (Solanaceae), *Cynara scolymus* and *Helianthus* sp. (Asteraceae), *Allium* spp. (Liliaceae), *Fragaria ananassa* and *Rubus* sp. (Rosaceae), *Simmondsia chinensis* (Simmondsiaceae), *Zea mays* and *Triticum* sp. (Poaceae), *Pistacia vera* (Anacardiaceae), *Beta vulgaris* (Chenopodiaceae),	High (3)

Copitarsia decolora	**Risk ratings**
Brassica oleracea (Brassicaceae), *Dianthus caryophyllus* (Caryophyllaceae), *Feijoa sellowiana* (Myrtaceae), *Actinidia deliciosa* (Actinidiaceae) (Angulo and Olivares 2003).	
Risk Element #3: Dispersal Potential *Copitarsia decolora* exhibited an average fecundity of 1038 eggs per female under laboratory conditions (Larraín 1996). Larvae complete four to six instars depending on the temperature (Gould et al. 2005). Copitarsia spp. in general have two to four generations per year (Venette and Gould 2006). *C. decolora* can be transported for long distances via the movement of infested plant materials. *Copitarsia* spp. has been intercepted at U.S. ports of entry 20,948 times since 1984.	High (3)
Risk Element #4: Economic Impact *Copitarsia decolora* has been described as one of the most economically important members of the genus (Simmons and Pogue 2004). In its native range, *Copitarsia* spp. have lowered yields, lowered the value of the commodity, and impacted the markets (Venette and Gould 2006). Venette and Gould (2006) reported that *Copitarsia* spp. reduced marketability of some vegetables by 24 percent and grain yields up to 90 percent. Establishment of this species may increase the cost of production as well. In Peru, IPM programs are being developed to use traps in fields and washing asparagus with bleach and detergent. Chemical and biological controls (e.g. *Bacillus thuringiensis*) are commonly used to control *C. decolora* in asparagus fields in Peru (Gould et al. 2010). Establishment of *Copitarsia decolora* could result in significant economic impacts in the United States.	High (3)
Risk Element #5: Environmental Impact The host range of *Copitarsia decolora* includes the genera *Allium* and *Helianthus*, which contain species listed as Threatened or Endangered species (50 CFR § 17.12) (*Allium munzii* in California, *Helianthus paradoxus* in New Mexico and Texas, and *Helianthus schweinitzii* in North Carolina and South Carolina (USFWS 2013). Since this species poses significant threats to U.S. agriculture (Venette and Gould 2006; Gould et al. 2006), introduction of this species into the United State may initiate chemical or/and biological eradication programs. Therefore, we rated the environmental impact caused by this species as high.	High (3)

***Neoleucinodes elegantalis* (Guenée)**	**Risk ratings**
Risk Element #1: Climate-Host Interaction *Neoleucinodes elegantalis* is distributed from the south of Mexico to northern Argentina, Cuba, Granada, Puerto Rico, and Trinidad and Tobago (Marcano, 1991b; Anteparra et al., 2010), and from the Antilles, Brazil, Colombia, Ecuador, and Venezuela (Vallejo et al., 2008; CABI, 2006; Eiras and Blackmer, 2003; Revelo, 2003). The climatic conditions in Plant Hardiness Zones 9-11 (Magarey et al., 2008) are likely to be suitable for the survival and establishment of this insect in the continental United States. Host crops are present in those zones (Kartesz, 2011). Because Zone 11 only comprises approximately 0.1 percent of the United States (USDA-APHIS, 2008), it is not counted toward the total number of zones for determining the Climate-Host Interaction risk rating.	Medium (2)
Risk Element #2: Host Range This fruit borer attacks only plants in the Solanaceae family (CABI, 2006; Notz, 2011). Hosts include *Solanum betaceum, S. hirtum, S. lycopersicum, S. melongena, S. quitoense* and *Capsicum annuum* (Notz, 2011; CABI, 2006; Mosquera et al., 2006), along with the wild species *S. torvum*, *S. acerifolium, S. atropurpureum, S. crinitum, S. hirtum* and *S. pseudolulo* (Diaz, 2009).	Medium (2)
Risk Element #3: Dispersal Potential The first report of *N. elegantalis* was made by Guenée in tomato crops from Panama and Brazil. The reproductive potential of *N. elegantalis* was studied under laboratory conditions. The total time for development of the insect was 27-110 days, then multiple generations per year are possible; the number of eggs per female was 75 on eggplant and 34 on tomato (Marcano, 1991a). In Colombia, under laboratory conditions and using *Solanum quitoense* plants as hosts, fecundity averaged 93 eggs/female, with 98% fertility and in virgin females, dissected ovarioles contained an average of 149 eggs (Diaz, 2001). *Neoleucinodes elegantalis* can be transported over long distances in infested fruits, as evidenced by 85 interceptions in *Capsicum* fruits at U.S. ports of entry (PestID, 2014).	Medium (2)

Risk Element #4: Economic Impact *Neoleucinodes elegantalis* (Guenée) is one of the most important pests in several tomato-growing regions in South America and the Caribbean. The larvae bore into the fruit, rendering the fruit unmarketable and causing premature fruit drop (Vallejo, 2008; Picanço et al., 2007). *Neoleucinodes elegantalis* is the major economic pest that impacts tomato-growing regions in Brazil, Colombia, and Venezuela (Vallejo, 2008; Eiras and Blackmer, 2003; Franco et al., 2002; Marcano, 1991b). In 1961, it damaged tomato crops in the State of Lara (Venezuela) and is now the most important pest for this crop (Marcano, 1991a). Picanço et al (2007) reported tomato production losses of 16% in Viçosa, State of Minas Gerais, Brazil. *Neoleucinodes elegantalis* increased production costs for the areas affected (Franco et al., 2002). During rainy seasons, up to 40 percent of fruits may be damaged, reducing yield (Marcano, 2005). As a quarantine pest for the Caribbean Plant Protection Commission (EPPO, 2007*), N. elegantalis* could cause the loss of international markets.	High (3)
Risk Element #5: Environmental Impact Of the two host genera in the Solanaceae attacked by the stem borer, only species of *Solanum* are listed by the USFWS as either threatened, endangered or candidates for listing. Three *Solanum* spp. (S. *drymophilium*, *S. incompletum*, and *S. sandwicense*) are listed as Threatened and Endangered species but none of those occur in the continental United States. Therefore, this pest seems unlikely to pose any risk to native plants in the continental United States. The introduction of this pest into the United States could stimulate the use of biological controls, including releasing of *Trichogramma* species (Marcano, 2005).	Medium (2)

Puccinia pampeana	**Risk ratings**
Risk Element #1: Climate-Host Interaction *Puccinia pampeana* occurs in the following South American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Peru, and Uruguay (Farr and Rossman, 2011; Hernández and Hennen, 2003). In Central America, it occurs in Costa Rica (Farr and Rossman, 2011; Calderón et al., 2009), Guatemala, and Mexico (Farr and Rossman, 2011; Hernández and Hennen, 2003). *Puccinia pampeana* is likely to develop in temperatures between 15-28°C (59-82°F) (Tamayo and Jaramillo, 2006). Based on its distribution, *P. pampeana* could establish in Plant Hardiness Zones 9-11 (Magarey et al., 2008). Because Zone 11 only comprises approximately 0.1 percent of the United States (USDA-APHIS, 2008), we did not count it toward the total number of zones for determining the Climate-Host Interaction risk rating.	Medium (2)
Risk Element #2: Host Range Rust fungi are generally host-specific, often causing disease on certain genera or even on certain cultivars (Agrios, 2005). *Puccinia pampeana* infects genera in the Solanaceae family, including *Acnistus arborescens, A. breviflorus, A. parviflorus, Capsicum annuum, C. baccatum, C. ciliatum, C. frutescens, C.*	Medium (2)

Puccinia pampeana	**Risk ratings**
microcarpum, *C. pendulum*, *Cestrum* sp., *Dunalia breviflora*, *D. lycioides*, *Salpichroa diffusa*, *S. origanifolia*, *S. rhomboidea*, *Solanum cyrtopodium*, *S. lycioides*, and *S. valdiviense* (Farr and Rossman, 2011; Robert et al., 2005; Hernández and Hennen, 2003).	
Risk Element #3: Dispersal Potential *Puccinia pampeana* has a unique infectious structure called basidiospores. These are produced by the germination of any of the two teleomorphic states, one aecidioide of the *Endophyllum* type, and the other telioide of the *Puccinia* type; due to this, *P. pampeana* is characterized as a biteleomorphic microorganism. (Passador et al., 2008; Martins et al., 1995; Medgen, 1997). Under appropriate conditions the spores germinate and produce basidiospores and repeat the infective process for several generations. Thus, the disease can rapidly disseminate in field conditions. After rust infection, developed teliospores have dormancy and tolerate high summer temperatures in subtropical areas. They over-summer and germinate after rain, producing basidiospores that infect the host plants in the autumn when mild temperatures predominate (Figueiredo et al. 1987; Figueiredo 2000). Multiple generations can occur in a year. Rust fungi spread from plant to plant mostly by windblown spores, although insects, rain, and animals may play a role. Some spores (uredospores) are transported over long distances by strong winds and can start new infections (Agrios, 2005; Staples 2000).	High (3)
Risk Element #4: Economic Impact *Puccinia pampeana* occurs on many members of the Solanaceae and causes complete losses in crops of several species of *Capsicum* in Central and South America (Hernández and Hennen, 2003). The disease causes curling and distortion of the buds (Hernández and Hennen, 2003). Related *Puccinia* species significantly reduce yield and product quality, and require control through removal of alternate hosts, host resistance, and/or chemical control (Agrios, 2004; Staples, 2000). The establishment of *P. pampeana* in the United States may result in loss of foreign and domestic markets, due to commercial species of the Solanaceae family across the UE (Kartesz, 2011).	High (3)
Risk Element #5: Environmental Impact *P. pampeana* could attack plants in the *Solanum* genus listed as threatened and endangered species (USFWS, 2014); however, those species (*S. drymophilum, S. incompletum,* and *S. sandwicense*) occur in Puerto Rico or Hawaii. Because *P. pampeana* affects economically important crops like *Capsicum* sp. (Hernández and Hennen, 2003), control programs would likely be initiated if it were introduced into the United States.	Medium (2)

Table 7. Risk rating for Consequences of Introduction.

Pest	Risk elements					Cumulative Risk Rating[a]
	Climate-Host Interaction	Host Range	Dispersal Potential	Economic Impact	Environmental Impact	
Anastrepha fraterculus	Med (2)	High (3)	High (3)	High (3)	Med (2)	High (13)
Ceratitis capitata	Med (2)	High (3)	High (3)	High (3)	Med (2)	High (13)
Copitarsia decolora	Med (2)	High (3)	High (3)	High (3)	High (3)	High (14)
Neoleucinodes elegantalis	Med (2)	Med (2)	Med (2)	High (3)	Med (2)	Medium (11)
Puccinia pampeana	Med (2)	Med (2)	High (3)	High (3)	Med (2)	Medium (12)

[a.]Low is 5-8 points; Medium is 9-12 points; High is 13-15 points

2.5.2. Likelihood of Introduction

We based this section on 1) an estimate of the amount of commodity likely to be imported (sub-element #1), and 2) pest opportunity estimated using five biological features (sub-elements #2-6). Details of the rating criteria are explained in the *Guidelines for Pathway-Initiated Pest Risk Assessments, Version 5.02* (PPQ 2000). These sub-element ratings, along with the values for the Likelihood of Introduction, are summarized below (Table 8).

Quantity of commodity imported annually. In 2009, the production of peppers in Colombia was 48,599 MT in 2,456 ha (6069.9 acres) (MADR, 2011), and it is expected that only 0.5% of total production could fulfill the exportation market requirements (approximately 243 MT). It is estimated that the quantity of the commodity exported annually would be up to 12 containers. The rated it is **Medium.**

Survive post-harvest treatment. Harvested *Capsicum* sp. fruits undergo several processes at packing houses in Colombia (see 1.4.2).

Internally feeding insects such as *A. fraterculus* and *C. capitata* are difficult to detect during post-harvest treatments. Therefore the risk is rated **High**.

Although *Neoleucinodes elegantalis* is an internal feeder, the larvae that penetrate the fruit leave large exit holes. Those holes are relatively easy to detect, so we rated it **Medium**.
The external feeder, *Copitarsia decolora,* is less likely to survive postharvest treatment than internally feeding arthropods. This pest might hide in recesses on the fruits (e.g. calyx), however. Therefore, we rated it Medium.

The spores of *P. pampeana* are difficult to detect with a naked eye. Therefore, we rated this pest **High** for this risk element.

Survive shipment. The commodity is typically stored at 7.5°C and 95 percent relative humidity (Boyette et al., 1990; COLEXAGRO, 2011). Peppers may be stored for as long as three weeks with little loss of quality (Boyette et al. 1990). Transportation conditions of peppers, especially by airplane or ship, will likely have no significant effect on pest survival. Therefore, we rated all pests **High** for this risk element.

Not be detected at the port-of-entry. *Anastrepha fraterculus* and *Ceratitis capitata* feed internally in the fruit and are difficult to detect, so we rated them **High**.

Copitarsia decolora is an externally feeding species. Larvae reach to 2 to 4 cm in length (Venette and Gould 2006). Detection of this species should be fairly easy, especially at later instar stages; however, it could escape from the inspection at the port-of-entry at egg stage and earlier instar stages. Thus, we rated this species **Medium**.

Larvae of *Neoleucinodes elegantalis* penetrate the fruit, leaving large exit holes. Those holes are relatively easy to detect, so we rated it **Medium**.

Signs of sporulation, leaf, and stem lesions, and rotting fruit from *Puccinia pampeana* infections are easily identified at the ports-of–entry, but latent infections and the presence of spores on fruit or packing materials are likely to go undetected (Agrios, 2005). We gave this pest a rating of **Medium**.

Imported or moved subsequently to an area with an environment suitable for survival. Markets of this commodity exist in all parts of the country. All insect species and *Puccinia pampeana* are rated Medium because they are tropical and subtropical species. Tropical and subtropical environments are limited in the continental United States, and comprise only 10-12 percent of the total land area of the continental United States.

Come into contact with host material suitable for reproduction. The probability of polyphagous species, such as *Anastrepha fraterculus, Ceratitis capitata,* and *Copitarsia decolora*, coming into contact with host material suitable for reproduction is high, because hosts occur across the United States (Kartesz, 2011). Thus, we rated those species High in this section.

Although *Neoleucinodes elegantalis* only has host plants in the Solanaceae family, they are widespread and available in suitable environmental conditions in the continental United States. We gave a risk rating of **High**.

Puccinia pampeana occurs on species within the Solanaceae family (Farr and Rossman 2011; Tamayo and Jaramillo 2006). The disease can rapidly disseminate in field conditions infecting host plants and spread from plant to plant by windblown spores (Agrios, 2004). We gave this fungus a risk rating of **High**.

Table 8. Risk rating for Likelihood of Introduction. For all pests the rating for 'Quantity imported annually' was Medium.[a]

Pest	Sub-element					Cumulative risk rating[b]
	Survive post-harvest treatment	Survive shipment	Not detected at ports-of-entry	Moved to suitable habitat	Contact with host material	
Anastrepha fraterculus	High (3)	High (3)	High (3)	Med (2)	High (3)	High (16)
Ceratitis capitata	High (3)	High (3)	High (3)	Med (2)	High (3)	High (16)
Copitarsia decolora	Med (2)	High (3)	Med (2)	Med (2)	High (3)	Medium (14)
Neoleucinodes elegantalis	Med (2)	High (3)	Med (2)	Med (2)	High (3)	Medium (14)
Puccinia pampeana	High (3)	High (3)	Med (2)	Med (2)	High (3)	High (15)

[a] This rating adds 2 pt to each pest's row total.
[b] Low is 6-9 points; Medium is 10-14 points; High is 15-18 points.

2.6. Pest Risk Potential and Conclusion

We summed the Consequences of Introduction and the Likelihood of Introduction values to produce the Pest Risk Potential (Table 7). Pest Risk Potential is a baseline estimate of the risks associated with importation of the commodity in the absence of mitigation measures.

Following the assignment of the Pest Risk Potential, pests associated with the importation of peppers into the United States present either a High or Medium pest risk potential. Port-of-entry inspection is not considered sufficient to provide phytosanitary security for pests with High pest risk potential; thus, specific phytosanitary measures are strongly recommended. For pests with Medium pest risk potential, specific phytosanitary measure may be necessary. This document does not purport to establish specific work plans or to evaluate the reliability of a specific program or systems approach. It provides information regarding known mitigation measures. The specification and implementation of measures, as would be present in an operational work plan, is beyond the scope of this document.

Table 9. Pest risk potential.

Pest	Consequences of Introduction	Likelihood of Introduction	Pest Risk Potential[a]
Anastrepha fraterculus	High (13)	High (16)	High (29)
Ceratitis capitata	High (13)	High (16)	High (29)
Copitarsia decolora	High (14)	High (14)	High (28)
Neoleucinodes elegantalis	Medium (11)	Medium (14)	Medium (25)
Puccinia pampena	Medium (12)	High (15)	High (27)

[a] Low = 11-18 points, Medium = 19-26 pts., and High = 27-33 pts.

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5. Appendix

Appendix A. Summary harvest and post-harvest.

Appendix B. Pest Interceptions on *Capsicum* spp. entering the United States.
Data are from 1985 to 2011 (PestID, 2011)

Pest Intercepted	Where Intercepted	Interceptions (no.)
Abgrallaspis aguacatae	Permit cargo	2
Abgrallaspis flabellata	Baggage	1
Acalymma sp.	Permit cargo	1
Acanthococcus sp.	Baggage	1
Acanthoderes sp.	Permit cargo	1
Acari spp.	Baggage, General Cargo, Permit	3
Aceratagallia sp.	Baggage	1
Achryson sp.	Baggage	1
Acleris sp.	General Cargo	1
Acremonium sp.	Stores	1
Acrididae spp.	Permit cargo	1
Acroleucus sp.	Permit cargo	5
Acrolophus sp.	Permit cargo	2
Acyrthosiphon sp.	Permit cargo	1
Adoretus sinicus	Baggage	1
Aecidium sp.	Baggage	1
Aeolothripidae spp.	Baggage	1
Aeolothrips fasciatus	General Cargo	1
Aeolus nigromaculatus	Permit cargo	1
Aeolus sp.	General Cargo, Permit cargo	20
Aetalion sp.	Permit cargo	1
Agroiconota propinqua	Permit cargo	1
Agromyzidae spp.	Baggage, General Cargo, Permit	4884
Agrotis sp.	Baggage	3
Aleurocanthus woglumi	Baggage, Permit Cargo	3
Aleurodicus dispersus	Baggage, Mail	98
Aleuroplatus sp.	Baggage	1
Aleurotrachelus atratus	Baggage	1
Aleyrodidae spp.	Baggage, General Cargo, Permit	40
Aleyrodinae spp.	Baggage, Permit Cargo	3
Alitocoris parvus	Permit cargo	1
Alitocoris sp.	Permit cargo	2
Allonemobius sp.	Permit cargo	3
Alternaria sp.	Baggage, Permit Cargo, Stores	32
Altica sp.	Baggage, Permit cargo	6
Amblyomma sp.	Permit cargo	1
Amnestus sp.	Permit cargo	2
Amorbia emigratella	Baggage	1
Amorbia sp.	Baggage, General Cargo, Permit	41
Amphelasma sp.	Permit cargo	1
Amphipyrinae spp.	Permit cargo	1
Anaedus sp.	Permit cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Anarsia sp.	Baggage	7
Anasa sp.	Permit cargo	1
Anastrepha ludens	Baggage, Permit cargo	5
Anastrepha serpentina	Baggage	2
Anastrepha sp.	Baggage, Permit cargo, Mail,	79
Anastrepha suspensa	Baggage	1
Anaxipha sp.	Permit cargo	3
Anchonidium sp.	Permit cargo	1
Anelaphus sp.	Permit cargo	1
Anoecia sp.	Permit cargo	1
Anomala foraminosa	Permit cargo	1
Anomala sp.	General Cargo, Permit cargo,	31
Anthocoridae spp.	Baggage, General cargo, Permit	254
Anthomyiidae spp.	Baggage, Permit cargo, Quarters	20
Anthonomus eugenii	Baggage,General cargo, Mail,	521
Anthonomus sp.	Baggage,General cargo, Mail,	2117
Anthrenus verbasci	Baggage	1
Anthribidae spp.	Baggage	1
Antillocoris sp.	Permit cargo	1
Apamea monoglypha	Permit cargo	1
Aphididae spp.	Baggage,General cargo, Mail,	417
Aphidius sp.	Baggage, General cargo, Permit	3
Aphidoletes aphidimyza	Permit cargo	2
Aphis craccivora	Permit cargo	1
Aphis fabae	Permit cargo	1
Aphis gossypii	Baggage, General cargo, Permit	14
Aphis sp.	General cargo	1
Aphodiinae spp.	Permit cargo	5
Aphodius sp.	Permit cargo	1
Apinocis deplanatus	Permit cargo	1
Apion sp.	Permit cargo	4
Apis mellifera	Baggage, General cargo, Permit	14
Apocrita spp.	Baggage, Permit cargo	3
Aptopus sp.	Permit cargo	1
Araecerus fasciculatus	Permit cargo	1
Araneae spp.	Baggage, General cargo, Permit	23
Araneidae spp.	Permit cargo	2
Archimerus sp.	General cargo	1
Archipini spp.	Baggage, General cargo, Permit	50
Arctiidae spp.	Baggage, Permit cargo	8
Argas sanchezi	General cargo	1
Argyrotaenia sp.	Baggage	1
Arhyssus sp.	Permit cargo	2
Armalia sp.	Permit cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Armalia variabilis	Permit cargo	2
Arphnus melanostylus	Baggage	1
Artipus sp.	Baggage, Permit cargo	4
Arvelius albopunctatus	Baggage, Permit cargo	3
Arvelius sp.	General cargo	3
Ascalapha odorata	General cargo	1
Ascia monuste	Permit cargo	1
Ascidae spp.	Permit cargo	2
Ascochyta sp.	Permit cargo	1
Asphodelus fistulosus	Baggage, Stores	3
Asphondylia sp.	Baggage, Permit cargo	5
Aspidiotini sp	Baggage	1
Aspidiotus nerii	Baggage	2
Asterolecanium sp.	Baggage	1
Astigmata spp.	General cargo, Permit cargo	2
Ataenius sp.	Permit cargo	3
Atherigona orientalis	Baggage, Permit cargo	5
Atherigona sp.	Baggage, Permit cargo	19
Athysanini spp.	Permit cargo	1
Attagenus sp.	Baggage	1
Auchenorrhyncha spp.	Baggage, Permit cargo	6
Aulacorthum solani	General cargo, Permit cargo	33
Aulacorthum sp.	Baggage	1
Autographa californica	General cargo	1
Autographa gamma	Baggage, Permit cargo	8
Autographa sp.	Baggage, General cargo, Permit	6
Automeris io	Baggage	1
Bactericera cockerelli	Baggage, Mail, Permit cargo	91
Bactericera sp.	Permit cargo	3
Bactrocera cucurbitae	Baggage, Mail	4
Bactrocera dorsalis	Baggage, Mail	8
Bactrocera latifrons	Baggage, Mail, Permit cargo	28
Bactrocera oleae	Baggage	1
Bactrocera sp.	Baggage, General cargo, Mail	234
Balanogastris sp.	Baggage	1
Balclutha sp.	Permit cargo	1
Baridinae spp.	Permit cargo	6
Batocera sp.	Baggage	1
Bdellidae spp.	Permit cargo	6
Bemisia tabaci	Permit cargo	6
Berecynthus hastator	Permit cargo	1
Betula sp.	General cargo, Permit cargo	6
Bidens sp.	Baggage	2
Bignoniaceae spp.	Permit cargo	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Blapstinus sp.	Baggage, General cargo,	104
Blastobasidae spp.	Permit cargo	2
Blattidae spp.	Baggage, Permit cargo	3
Blattodea spp.	Baggage, Permit cargo	3
Blissus sp.	Permit cargo	2
Boerhavia erecta	Baggage	1
Boisea trivittata	General cargo	1
Bostrichidae spp.	General cargo, Permit cargo	4
Bothrotes sp.	Baggage, Permit cargo	5
Bothynus sp.	Permit cargo	2
Botrytis cinerea	Permit cargo	2
Brachymyrmex sp.	Permit cargo	1
Brachypnoea sp.	Permit cargo	3
Bracon sp.	Baggage	1
Braconidae spp.	Baggage, General cargo, Permit	28
Bradybaena similaris	Permit cargo	2
Bradybaenidae spp.	Permit cargo	1
Brassica sp.	General cargo	1
Brevipalpus sp.	Baggage, Stores	2
Brochymena quadripustulata	Permit cargo	1
Brochymena sp.	Permit cargo	1
Brochymena sulcata	Permit cargo	2
Bruchidae spp.	Baggage, Mail	2
Bryocorinae spp.	Permit cargo	1
Bulimulus sp.	Permit cargo	2
Buprestidae spp.	Baggage, General cargo, Permit	4
Cacoecimorpha pronubana	Baggage, Permit cargo	102
Cactaceae sp.	Baggage	1
Cadra calidella	Permit cargo	1
Cadra cautella	Baggage, General cargo, Mail,	19
Cadra figulilella	Baggage	2
Cadra sp.	Baggage, General cargo	4
Calcisuccinea aff. luteola	General cargo, Permit cargo	18
Calcisuccinea dominicensis	Permit cargo	5
Calcisuccinea luteola	Permit cargo	2
Calcisuccinea sp.	Permit cargo	2
Caliothrips fasciatus	Baggage	1
Caliothrips phaseoli	Baggage	1
Caliothrips sp.	Baggage	1
Calligrapha sp.	Permit cargo	1
Calliphoridae spp.	Baggage, Miscellaneous, Pert cargo	15
Callosobruchus chinense	Stores	
Callosobruchus maculatus	Baggage	3
Calyptocephala gerstaeckeri	Stores	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Calyptocephala sp.	Baggage	1
Camelliasp	Baggage, Permit cargo	1
Camponotus sp.	Permit cargo	1
Camponotus vagus	Permit cargo	1
Campylomma sp.	Baggage, Permit cargo	2
Cantharidae spp.	Baggage, Permit cargo	2
Carabidae spp.	Baggage, General cargo,Permit	40
Carcinophoridae spp.	Permit cargo	1
Carpomya sp.	Baggage	1
Carpophilus sp.	Baggage,General cargo, Permit	7
Cartodere constricta	Permit cargo	1
Caryophyllaceae spp.	Stores	1
Cassidinae spp.	Permit cargo	2
Catocalinae spp.	Permit cargo	1
Catorhintha sp.	Baggage	1
Caulophilus oryzae	Permit cargo	1
Caulophilus spp.	Baggage	1
Cecidomyiidae spp.	Baggage, Permit cargo	83
Cepaea sp.	Quarters	1
Cerambycidae spp.	Permit cargo	2
Ceratitini spp.	Baggage, General cargo, Mail,	769
Ceratitis capitata	Baggage,General Cargo, Mail,	139
Ceratitis sp.	Baggage	77
Ceratocapsus sp.	Permit cargo	2
Ceratopogonidae spp.	Baggage, General cargo, Permit	3
Ceratothripoides brunneus	Baggage	1
Cercopidae spp.	Permit cargo	3
Cercospora apii	Permit cargo	2
Cercospora capsici	General cargo, Permit cargo, Stores	7
Cercospora physalidis	Baggage	1
Cercospora sp.	Baggage, General cargo, Permit	9
Ceroplastes sp.	Baggage	1
Cerotoma sp.	Permit cargo	2
Chaetanaphothrips leeuweni	Baggage, Permit cargo	41
Chaetanaphothrips orchidii	Permit cargo	3
Chaetanaphothrips sp.	Baggage, General cargo, Permit	54
Chaetocnema sp.	Baggage, Permit cargo	8
Chaetopsis sp.	General cargo	1
Chaitophorus sp.	General cargo	1
Chalcididae spp.	Baggage	2
Chalcidoidea spp.	Baggage, General cargo, Permit	6
Chalcodermus angulicollis	Permit cargo	1
Chalcodermus sp.	Baggage, Permit cargo	4
Charidotella emarginata	Permit cargo	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Charidotella sp.	Bagggage, Permit cargo	4
Charidotis sp.	Baggage	1
Cheyletidae spp.	Baggage, Permit cargo	2
Chironomidae spp.	Baggage, General cargo, Permit	18
Chloris sp.	Baggage	1
Chlorochroa ligata	General Cargo, Permit cargo	4
Chlorochroa sp.	baggage	1
Chloropidae spp.	Baggage, General cargo, Permit	17
Chlorops sp.	General Cargo	1
Choristoneura sp.	Permit argo	2
Chrysauginae spp.	Mail	1
Chrysobothris debilis	General cargo	1
Chrysobothris sp.	Permit Cargo	1
Chrysodeixis chalcites	Permit cargo	18
Chrysodeixis sp.	General Cargo, mail	8
Chrysomela sp.	Permit Cargo	1
Chrysomelidae spp.	Baggae, Permit Cargo	18
Chrysopidae spp.	Baggage, General cargo, Permit	12
Cicadellidae spp.	Baggage, General cargo, Permit	75
Cixiidae spp.	Permit Cargo	1
Cladosporium cladosporioides	General Cargo, Permit Cargo	2
Cladosporium herbarum	Baggae, General Cargo, Stores	5
Cladosporium oxysporum	Baggae, Stores	2
Cladosporium sp.	Baggage, General cargo, Permit	99
Cladosporium sphaerospermum	Permit cargo	2
Clastoptera sp.	Permit cargo	1
Clematis sp.	Baggae	1
Cleogonus armatus	Permit Cargo	1
Clepsis sp.	General cargo, Permit cargo	36
Clepsis spectrana	Permit Cargo	21
Cleridae spp.	Baggage, Permit Cargo	3
Cletus bipunctatus	Baggage	1
Clinodiplosis sp.	Baggage, Permit Cargo	11
Cnephasia sp.	Permit Cargo	1
Coccidae spp.	Baggage, General Cargo, Mail,	28
Coccinellidae spp.	Baggage, General Cargo, Permit	82
Coccinellinae spp.	Baggage, Permit Cargo	2
Coccinellini spp.	Baggage, Permit Cargo	3
Coccoidea spp.	Permit Cargo	1
Coccus hesperidum	Permit Cargo	1
Coccus sp.	Baggage, General Cargo	4
Coccus viridis	Baggage	3
Cochlicella acuta	Permit Cargo	1
Cochylini spp.	Baggage	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Cochylis sp.	Baggage	1
Coelomycetes spp.	Stores	1
Colaspis sp.	General Cargo, Permit Cargo	7
Coleomegilla maculata	Permit Cargo	1
Coleomegilla sp.	General Cargo	1
Coleoptera spp.	Baggage, General Cargo, Mail,	35
Collembola spp.	Baggage, General Cargo, Permit	78
Colletotrichum capsici	Baggage, Permit Cargo	18
Colletotrichum coccodes	Baggage, Mail	2
Colletotrichum crassipes	Permit cargo	4
Colletotrichum dematium	Baggage, Permit cargo	5
Colletotrichum gloeosporioides	Baggage, Mail, Permit cargo,	52
Colletotrichum nigrum	Baggage	1
Colletotrichum sp.	Baggage, Permit cargo	23
Colletotrichum truncatum	Baggage	2
Collops sp.	Baggage, Permit cargo	2
Condylostylus sp.	Permit Cargo	1
Conocephalus sp.	Baggage, Permit cargo	3
Conoderus rodriguezi	Permit Cargo	1
Conoderus sp.	Baggage, Permit cargo	16
Conotrachelus seniculus	General cargo, Permit Cargo	2
Conotrachelus sp.	Baggage, General cargo, Permit	10
Contarinia lycopersici	Permit Cargo	19
Contarinia sp.	Baggage, General cargo, Permit	500
Conyza sp.	Permit cargo, Stores	4
Copitarsia decolora	Permit Cargo	1
Copitarsia sp.	Baggage, General cargo, Permit	63
Coreidae spp.	Baggage, Permit cargo	7
Cornu aspersum	Baggage, Permit cargo	2
Corticariidae spp.	General cargo, Permit cargo	18
Corylophidae spp.	Baggage, GEneral cargo, Permit	134
Corynespora cassiicola	Permit cargo	1
Corythaica carinata	Baggage	1
Corythaica cyathicollis	Permit cargo	1
Corythucha gossypii	Permit cargo	1
Cosmopterigidae spp.	Baggage, Permit cargo	2
Cossoninae spp.	General cargo	1
Crambidae spp.	Baggage, General Cargo, Mail,	44
Crambinae spp.	Permit cargo	1
Crambus sp.	Baggage	1
Crematogaster sp.	Baggage, Permit cargo	2
Creontiades rubrinervis	Permit cargo	1
Creontiades sp.	Permit cargo	1
Cryptoblabes gnidiella	Permit cargo	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Cryptoblabes sp.	Baggage	1
Cryptocephalinae spp.	Baggage	1
Cryptocephalus sp.	Permit cargo	1
Cryptolestes sp.	Baggage	2
Cryptophagidae spp.	Baggage, General cargo, Permit	17
Cryptophlebia leucotreta	Baggage, General cargo, Permit	97
Cryptophlebia sp.	Baggage, General Cargo, Mail,	813
Cryptorhynchini spp.	Permit cargo	1
Cryptostigmata spp.	Baggage, General cargo, Permit	5
Cryptotermes brevis	Baggage	1
Cryptothelea sp.	Baggage	1
Cteisa sp.	Permit cargo	1
Ctenarytaina spatulata	Permit cargo	1
Cucujidae spp.	Baggage, Permit Cargo, Stores	12
Cucujoidea spp.	Permit cargo	1
Culicidae spp.	Baggage, General cargo	2
Cunaxidae spp.	Permit cargo	3
Curculio sp.	Baggage, Permit cargo	2
Curculionidae spp.	Baggage, General cargo, Mail,	197
Curculioninae spp.	Baggage	1
Curculionoidea	Baggage	1
Curvularia intermedia	Permit cargo	1
Curvularia lunata	General cargo	1
Cyclanthera pedata	Baggage	1
Cyclocephala sp.	Permit cargo	22
Cyclorrhapha spp.	Baggage, Permit cargo, Stores	44
Cydia sp.	Baggage, Permit cargo	4
Cydnidae spp.	Permit cargo	8
Dacinae spp.	Baggage	27
Dacus dorsalis	Baggage	3
Dacus sp.	Baggage, General cargo	85
Dalbulus elimatus	Baggage	1
Dallasiellus bacchinus	Permit cargo	2
Dallasiellus lugubris	Permit cargo	2
Dasineura sp.	Baggage, Permit cargo	3
Daucus carota	Baggage	1
Delia sp.	Stores	1
Deloyala guttata	Baggage, Permit cargo	3
Deloyala sp.	Permit cargo	6
Delphacidae spp.	Baggage, General cargo, Permit	7
Delphacodes sp.	General cargo	1
Dendrocoris sp.	Permit cargo	1
Dermaptera spp.	Baggage, Permit cargo	6
Dermestes sp.	Baggage, General cargo, Permit	3

Pest Intercepted	Where Intercepted	Interceptions (no.)
Deroceras laeve	Baggage, Permit cargo	4
Diabrotica balteata	Permit cargo	2
Diabrotoca longicornis	General cargo	1
Diabrotica sp.	Baggage, Permit cargo	6
Diabrotica undecimpunctata	Baggage, General cargo, Permit	11
Diabrotica variegata	Permit Cargo	1
Diaphania nitidalis	Baggage, Permit Cargo	5
Diaphania sp.	Baggage, Permit cargo	4
Diaprepes sp.	Permit cargo	1
Diaspididae spp.	Baggage, Mail, Permit cargo	17
Diaspidiotus perniciosus	Baggage	1
Diaspidiotus sp.	Permit cargo	1
Diatraea sp.	Baggage	4
Dicyphinae spp.	Permit cargo	1
Didymella lycopersici	Permit cargo	1
Dieuches armatipes	Permit cargo	1
Dieuches sp.	Permit cargo	1
Digeria sp.	Permit cargo	1
Digitaria ciliaris	Permit cargo	1
Digitaria sanguinalis	Permit cargo	1
Digitaria sp.	Baggage, General cargo, Permit	11
Diplotaxis sp.	General cargo, Permit cargo	17
Dipropus sp.	Permit cargo	2
Diptera spp.	Baggage, General cargo, Permit	149
Disonycha sp.	Baggage, Permit cargo	12
Dolichoderinae spp.	Baggage	2
Dolichopodidae spp.	Baggage, General cargo, Permit	3
Drosophila sp.	Baggage, General cargo, Permit	25
Drosophilidae spp.	Baggage, General cargo, Mail,	113
Drymaeus sulphureus	Permit cargo	1
Duponchelia fovealis	Baggage, General cargo, Permit	264
Dynastinae spp.	Permit cargo	1
Dyscinetus picipes	Permit cargo	1
Dyscinetus sp.	Permit cargo	4
Dysdercus andreae	Permit cargo	1
Dysdercus mimulus	Baggage	1
Dysdercus mimus	Permit cargo	1
Dysdercus obliquus	Permit cargo	1
Dysdercus obscuratus	Permit cargo	1
Dysmicoccus brevipes	Miscellaneous, Permit cargo	2
Dysmicoccus grassii	Permit cargo	1
Dysmicoccus neobrevipes	Baggage, Permit cargo	3
Dysmicoccus sp.	General cargo, Permit cargo	6
Dytiscidae spp.	General cargo, Permit cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Ecdytolopha sp.	Baggage, Permit cargo	8
Echinochloa crusgalli	General cargo	1
Echinochloa sp.	Baggage	1
Echinothrips americanus	Baggage, General cargo, Permit	18
Ectomyelois ceratoniae	baggage, Permit cargo	6
Edessa sp.	Baggage	1
Elachiptera sp.	Permit cargo	1
Elaphria nucicolora	permit cargo	2
Elaphria sp.	Permit cargo	1
Elateridae spp.	Permit cargo, Stores	4
Eleodes sp.	Permit cargo	3
Eleusine indica	Permit cargo	2
Eleusine sp.	Baggage	1
Empididae spp.	General cargo, Permit cargo	2
Empoasca sp.	Baggage, General cargo, Permit	13
Entiminae spp.	Permit cargo	3
Entomobryidae spp.	Baggage, Permit cargo	12
Ephestia elutella	Baggage, Permit cargo	5
Ephydridae spp.	Baggage, General cargo, Permit	3
Epicaerus sp.	Permit cargo	1
Epicauta sp.	Permit cargo	2
Epicoccum nigrum	Stores	1
Epilachna sp.	Permit cargo	1
Epilachninae spp.	Permit cargo	1
Epilobium sp.	General cargo, Permit cargo	6
Epitrix sp.	Baggage, Permit cargo	15
Eragrostis sp.	Baggage, General cargo	2
Eremobelba sp.	Baggage	1
Eriococcus dubius	Permit cargo	1
Erotylidae spp.	Baggage, Permit cargo	3
Erysiphe cichoracearum	Permit cargo	1
Erythraeidae spp.	General cargo, Permit cargo	2
Erythroneura sp.	Permit cargo	1
Estigmene acrea	Permit cargo	1
Etiella sp.	Baggage	6
Etiella zinckenella	Baggage	5
Euclea sp.	Permit cargo	1
Eudiagogus sp.	Permit cargo	1
Euetheola sp.	Permit cargo	1
Eumolpinae spp.	Permit cargo	1
Euphorbia sp.	Permit cargo	1
Eupodidae spp.	Permit cargo	1
Euryscelis suturalis	Permit cargo	1
Eurytoma sp.	Baggage	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Euschistus bifibulus	Permite cargo	1
Euschistus crenator	Baggage, Permit cargo	5
Euschistus servus	Permit cargo	1
Euschistus sp.	Baggage, General cargo, Permit	31
Euschistus strenuus	Baggage, Perrmit cargo	5
Euschistus variolarius	General cargo	2
Eustromula validum	Baggage	1
Exitianus exitosus	Permit cargo	1
Faustinus cubae	Baggage, Permit cargo	3
Faustinus rhombifer	Permit cargo	1
Faustinus sp.	Baggage, General cargo, Permit	75
Ferrisia sp.	Baggage, General cargo, Permit	8
Ferrisia virgata	Miscellaneous, Permit cargo	27
Fiebrigella sp.	General cargo	1
Formicidae spp.	Holds, Permit cargo	2
Formicinae spp.	Baggage, General cargo, Permit	15
Frankliniella cephalica	permit cargo	1
Frankliniella fallaciosa	Permit cargo	1
Frankliniella fusca	Permit cargo	1
Frankliniella gossypiana	Baggage	1
Frankliniella insularis	General cargo, Permit cargo	5
Frankliniella intonsa	Baggage, General cargo, Permit	5
Frankliniella occidentalis	Baggage, General cargo, Permit	239
Frankliniella panamensis	Baggage, Permit cargo	2
Frankliniella parvula	Baggage	1
Frankliniella schultzei	Baggage, Permit cargo	22
Frankliniella sp.	Baggage, General cargo, Permit	223
Franklinothrips sp.	Permirt cargo	1
Franklinothrips vespiformis	Permirt cargo	1
Free-Living nematode	Baggage, Permit cargo	4
Fromundus pygmaeus	Baggage	1
Fulgoridae spp.	Baggage	1
Fulgoroidea spp.	Permirt cargo	1
Fusarium sp.	Baggage, General cargo, Permit	45
Galerucinae spp.	Baggage, Permit Cargo	2
Galleria mellonella	Permit Cargo	1
Gelechiidae spp.	Baggage, General Cargo, mail,	155
Gelechioidea spp.	Baggage, Mail, Permit Cargo	5
Geocoris sp.	Permit Cargo	2
Geometridae spp.	Baggage, General Cargo, Permit	15
Gloeosporium piperatum	Baggage	3
Glomerella cingulata	Permit Cargo	1
Glyptoscelis chontalensis	Permit Cargo	1
Gnathotrichus perniciosus	General Cargo	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Gnathotrichus sp.	General Cargo, Permit cargo	2
Gnorimoschema sp.	Baggage, Mail, Stores	10
Gnorimoschemini spp.	Stores	1
Golofa pusilla	General Cargo	1
Gracillariidae spp.	Baggage, Permit Cargo	9
Granodomus lima	Baggage	1
Gryllidae spp.	Baggage, General Cargo, Permit	63
Gryllodes sigillatus	Permit Cargo	5
Gryllodes sp.	Permit cargo	1
Gryllus assimilis	Permit cargo	1
Gryllus sp.	Baggage, General Cargo, Permit	141
Guignardia citricarpa	General cargo	1
Guppya gundlachi	Permit Cargo	1
Gynaikothrips uzeli	Permit Cargo	1
Hadeninae spp.	Baggage, Permit Cargo	3
Halticus sp.	Permit Cargo	1
Haplothrips gowdeyi	Permit Cargo	1
Haplothrips kurdjumovi	Mail	1
Haplothrips leucanthemi	Permit Cargo	1
Helicella sp.	Baggage	1
Helicidae spp.	Baggage, Permit Cargo	5
Helicoverpa armigera	Baggage, Permit cargo, Quarters,	21
Helicoverpa gelotopoeon	Baggage	1
Helicoverpa sp.	Baggage, General Cargo, Mail,	164
Helicoverpa zea	Baggage, General Cargo, Holds,	244
Heliothinae spp.	Baggage	2
Heliothis sp.	Baggage, Stores	42
Heliothis subflexa	Baggage, Permit Cargo	2
Heliothis virescens	Baggage, Permit Cargo	14
Heliothrips haemorrhoidalis	Mail, Permit Cargo	2
Helminthoglyptidae spp.	Permit Cargo	1
Hemerobiidae spp.	General cargo, Permit Cargo	2
Hemiptera spp.	General cargo, Permit Cargo	5
Hepialidae spp.	Baggage, Permit Cargo	2
Heraeus plebejus	Permit Cargo	1
Heraeus sp.	Baggage, Permit Cargo	6
Herculia sp.	Stores	1
Herpetogramma sp.	Permit Cargo	1
Hesperiidae spp.	Permit Cargo	1
Heterobostrychus aequalis	Permit Cargo	2
Heterogaster urticae	Baggage, Permit Cargo	3
Heteroptera spp.	Baggage, Permit Cargo	37
Heterosporium sp.	Stores	1
Histeridae spp.	General cargo	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Holoparamecus sp.	Permit Cargo	1
Homoptera spp.	Baggage, General cargo, Permit	15
Hoplandrothrips sp.	General cargo, Permit Cargo	2
Hoplosphyrum sp.	Permit Cargo	1
Hortensia similis	Permit Cargo	1
Hydrophilidae spp.	Permit Cargo	2
Hygromiidae spp.	Stores	1
Hymenoptera spp.	Baggage, General cargo, Permit	7
Hypera postica	Baggage	1
Hyphomycetes spp.	Permit Cargo	1
Hypoaspis sp.	Permit Cargo	1
Hypoponera sp.	Permit Cargo	1
Hypothenemus sp.	Baggage, Permit Cargo	5
Ichneumonidae spp.	Baggage, Permit Cargo	4
Ichneumonoidea spp.	Permit Cargo	3
Injury sp.	Baggage, Mail, Permit cargo,	18
Insecta spp.	Baggage, General cargo, Permit	68
Insignorthezia insignis	Baggage	1
Iphiseius degenerans	General cargo, Permit Cargo	23
Ips bonanseai	Permit Cargo	2
Ips calligraphus	Permit Cargo	1
Ips integer	Permit Cargo	3
Ips lecontei	Permit Cargo	1
Ips sp.	General cargo, Permit Cargo	2
Ischnodemus sp.	General cargo	1
Jadera coturnix	Permit Cargo	2
Kalotermitidae spp.	Miscellaneous	1
Karnyothrips sp.	Permit Cargo	1
Keiferia lycopersicella	Baggage	1
Kleemannia sp.	Baggage	2
Kleidocerys resedae	Permit Cargo	1
Knulliana cincta	Permit Cargo	1
Lachnopus sp.	Permit Cargo	1
Lactuca sativa	Permit Cargo	2
Lactuca serriola	General cargo	2
Laelapidae spp.	Permit Cargo	3
Lagriinae spp.	Permit Cargo	1
Lamiaceae spp.	Permit Cargo	1
Lampyridae spp.	Permit Cargo	1
Languriidae spp.	Permit Cargo	1
Largus cinctus	Permit Cargo	2
Lasioderma serricorne	Baggage, General cargo, Permit	19
Lasiodiplodia sp.	Baggage	1
Lasioseius sp.	Permit Cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Lathridiidae spp.	Baggage, Permit Cargo	8
Lehmannia valentiana	Baggage, Permit Cargo	3
Lema sp.	General cargo	1
Lepidoptera spp.	Baggage, General Cargo, Mail,	76
Lepidosaphes beckii	Baggage	1
Lepidosaphes rubrovittata	Baggage	1
Lepidosaphes sp.	Baggage	
Leptinotarsa decemlineata	General cargo	1
Leptochloa sp.	Baggage, Permit Cargo	2
Leptoglossus sp.	Permit Cargo	1
Lestodiplosis sp.	Baggage	1
Leucania sp.	Permit Cargo	1
Leucinodes orbonalis	Baggage, General cargo, Permit	102
Leucinodes sp.	Baggage	2
Leveillula taurica	Baggage, Permit Cargo	5
Levicepolis monodonta	Permit Cargo	2
Ligyrocoris sp.	Permit Cargo	2
Ligyrocoris sylvestris	Permit Cargo	1
Ligyrus sp.	Permit Cargo	4
Limosininae spp.	Permit Cargo	1
Limothrips cerealium	Permit Cargo	1
Lineodes integra	Baggage, Permit Cargo	12
Lineodes sp.	Baggage	3
Linepithema humile	Baggage	1
Liothrips sp.	Permit Cargo	1
Liriomyza bryoniae	General Cargo	14
Liriomyza sativae	Permit Cargo	1
Liriomyza sp.	Baggage, General cargo, Permit	62
Liriomyza trifolii	Permit Cargo	16
Lissorhoptrus oryzophilus	Permit Cargo	5
Listroderes costirostris	Permit Cargo	1
Listronotus sp.	Baggage, General Cargo	3
Lobiopa sp.	Permit Cargo	2
Lobometopon metallicum	Baggage, General cargo, Permit	25
Lobometopon sp.	Permit Cargo	8
Lobopoda sp.	Permit Cargo	1
Lonchaea sp.	Baggage	1
Lonchaeidae spp.	Baggage, General Cargo, Mail,	526
Lorita sp.	Permit Cargo	1
Lucilia sp.	Baggage, Permit Cargo	5
Lycaenidae spp.	Baggage, General cargo, Permit	19
Lyctus africanus	Permit Cargo	1
Lyctus planicollis	Permit Cargo	1
Lygaeidae spp.	Baggage, Permit Cargo	14

Pest Intercepted	Where Intercepted	Interceptions (no.)
Lygaeoidea spp.	Baggage, General cargo,	14
Lygus lineolaris	General Cargo, Permit Cargo	13
Lygus sp.	Permit Cargo	2
Lymantriidae spp.	General Cargo, Permit Cargo	2
Lytta sp.	Permit Cargo	1
Maconellicoccus hirsutus	Baggage, Permit Cargo	6
Macrolophus melanotoma	Permit Cargo	3
Macrolophus pygmaeus	Permit Cargo	1
Macrolophus sp.	Permit Cargo	48
Macrophoma sp.	Permit Cargo	1
Macroplax fasciata	Baggage	1
Macrosiphum euphorbiae	General Cargo, Permit Cargo	11
Macrosteles sp.	General Cargo	1
Magnoliophyta sp.	Baggage, General cargo, Permit	13
Mallodon sp.	Permit Cargo	1
Mamestra brassicae	Baggage, Mail, Permit Cargo	10
Mamestra sp.	General Cargo, Permit Cargo	2
Manduca sp.	Baggage, Permit Cargo	2
Margarodidae spp.	Baggage, General cargo, Stores	3
Marmara sp.	Permit Cargo	11
Maruca vitrata	Baggage	1
Mecidea major	Permit Cargo	1
Megalopygidae spp.	Baggage	1
Megaselia sp.	General Cargo	1
Melacoryphus circumlitus	Permit Cargo	2
Melacoryphus lateralis	Permit Cargo	3
Melacoryphus rubicollis	Baggage	1
Melalgus sp.	Permit Cargo	1
Melanaethus sp.	Permit Cargo	1
Melanaethus spinolai	Permit Cargo	1
Melanagromyza sp.	Baggage	1
Melanoides tuberculata	Permit Cargo	1
Melanophila sp.	General Cargo	1
Melanoplus differentialis	General Cargo	1
Meliola sp.	Baggage	1
Melipotis sp.	Permit Cargo	1
Meloidae spp.	Baggage	2
Melolonthinae spp.	Baggage	1
Melyridae spp.	Baggage	3
Membracidae spp.	Baggage	4
Mesostigmata spp.	Baggage, General cargo, Permit	127
Metamasius hemipterus	Permit Cargo	4
Metamasius sp.	Permit Cargo	1
Metoponium sp.	Permit Cargo	4

Pest Intercepted	Where Intercepted	Interceptions (no.)
Metriona trisignata	Baggage	1
Microconidia sp.	Baggage, Permit Cargo	2
Microlepidoptera spp.	Permit Cargo	1
Microplax sp.	Baggage	1
Microsphaeropsis sp.	Baggage	1
Micrutalis sp.	Permit Cargo	1
Mikania micrantha	Permit Cargo	3
Mikania sp.	Permit Cargo	1
Miridae spp.	Baggage, General cargo, Permit	130
Mollusca spp.	Baggage, Permit Cargo	2
Monacha cartusiana	Stores	1
Monomorium floricola	Baggage	1
Monomorium pharaonis	General Cargo, Permit Cargo	2
Monoxia sp.	Baggage, Permit Cargo	3
Moodna bisinuella	Permit Cargo	1
Mordellistena sp.	Permit Cargo	1
Musca domestica	Baggage, Stores	3
Musca sp.	Permit Cargo	1
Muscidae spp.	Baggage, General cargo, Permit	49
Muscina sp.	Baggage, Permit Cargo	5
Mussidia nigrivenella	Baggage	2
Mycetophagidae spp.	Baggage, General cargo, Permit	19
Mycetophilidae spp.	General cargo, Permit cargo	3
Mycosphaerella sp.	Baggage, Permit Cargo	3
Mymaridae spp.	Permit Cargo	3
Myochrous cyphus	Permit Cargo	1
Myochrous sp.	Baggage, General cargo, Permit	17
Myodocha intermedia	Permit Cargo	1
Myrmicinae, species of (Formicidae)	Baggage	1
Myrothecium roridum	Permit Cargo	1
Myzus persicae	Baggage, General cargo, Permit	62
Myzus sp.	Permit Cargo	6
Nabidae spp.	Baggage, General cargo, Permit	6
Nabis sp.	Permit Cargo	1
Nasonovia ribisnigri	Stores	2
Nasutitermes sp.	Permit Cargo	2
Necrobia ruficollis	Permit Cargo	1
Necrobia rufipes	Baggage	1
Nematocera spp.	Baggage	1
Nemobiinae spp.	Permit Cargo	2
Nemobius carolinus	Permit Cargo	1
Neoconocephalus sp.	Permit Cargo	1
Neoleucinodes elegantalis	Baggage, Permit cargo,Quarters,	67
Neoleucinodes sp.	Baggage, Stores	36

Pest Intercepted	Where Intercepted	Interceptions (no.)
Neopamera albocincta	Permit Cargo	1
Neopamera bilobata	Permit Cargo	1
Neopamera sp.	Permit Cargo	1
Neortholomus jamaicensis	Baggage	1
Neoseiulus sp.	Baggage, Permit Cargo	4
Neotephritis finalis	Permit Cargo	1
Neotrichophorus sp.	Permit Cargo	1
Nesidiocoris tenuis	Permit Cargo	1
Nesothrips sp.	Baggage, Permit Cargo	2
Neuroptera spp.	Baggage, General cargo, Permit	37
Nezara viridula	Permit Cargo	2
Nitidulidae spp.	Baggage, General cargo, Permit	35
Nitidulinae spp.	Permit Cargo	1
Noctua pronuba	Permit Cargo	1
Noctuidae spp.	Baggage, General Cargo, Holds,	650
Nolidae spp.	Permit Cargo	1
Nymphalidae spp.	Baggage	1
Nysius sp.	General Cargo, Mail, Permit Cargo	18
Ochrimnus sp.	Baggage	1
Ocrasa nostralis	Permit Cargo	1
Odontomachus sp.	Permit Cargo	1
Odontota sp.	Permit Cargo	1
Odontothrips sp.	Permit Cargo	1
Oebalus ornatus	Permit Cargo	2
Oecanthus sp.	General Cargo	1
Oecophoridae spp.	Baggage, Permit Cargo	11
Ogdoecosta sp.	Permit Cargo	1
Olethreutinae spp.	Baggage, General cargo, Permit	130
Omalonyx sp.	Permit Cargo	1
Onthophagus sp.	Permit Cargo	2
Opatrinus sp.	Permit Cargo	3
Ophiderma sp.	Permit Cargo	1
Opogona sp.	Baggage	2
Oribatida spp.	Baggage, General cargo, Permit	13
Orius insidiosus	General Cargo	3
Orius sp.	Baggage, General cargo, Permit	23
Orphulella punctata	General Cargo	1
Orthalicus jamaicensis	Permit Cargo	1
Orthezia praelonga	Baggage	2
Orthezia pseudinsignis	Baggage	1
Orthezia sp.	Baggage, Permit Cargo	3
Ortheziidae spp.	General Cargo	1
Orthoptera spp.	Baggage, Permit cargo, Quarters	3
Oryzaephilus mercator	Baggage	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Oryzaephilus surinamensis	Baggage, Permit Cargo, Stores	6
Ostrinia nubilalis	Baggage, General cargo, Permit	77
Ostrinia sp.	Baggage, General cargo, Permit	3
Otiorhynchus cribricollis	Baggage	1
Otiorhynchus sp.	Permit Cargo	3
Otiorhynchus sulcatus	General Cargo	1
Otitidae spp.	Baggage, Mail, Permit cargo,	116
Ovatus crataegarius	Baggage	1
Oxalis sp.	Baggage, Permit Cargo	3
Oxalis stricta	Permit Cargo	1
Oxycarenus hyalinipennis	Baggage, Permit Cargo	4
Oxycarenus sp.	Baggage	1
Oxygrylius ruginasus	Permit Cargo	1
Ozophora burmeisteri	Permit Cargo	2
Ozophora sp.	Permit Cargo	1
Pachybrachis sp.	Permit Cargo	2
Pagiocerus sp.	Baggage	1
Pallifera sp.	Stores	1
Pangaeus bilineatus	Permit Cargo	2
Pangaeus sp.	Permit Cargo	1
Pantomorus sp.	Permit Cargo	1
Paracoccus marginatus	Baggage	2
Paracoccus solani	General cargo, Permit cargo	2
Paracoccus sp.	Permit Cargo	2
Paragonatas divergens	Baggage	1
Paralipsa gularis	Baggage, Permit Cargo	6
Paranapiacaba sp.	Permit Cargo	1
Parapiesma cinereum	Baggage, Permit Cargo	2
Parasitidae spp.	Baggage, General cargo, Permit	9
Paratrechina longicornis	Permit Cargo	1
Paratrechina sp.	Baggage, Permit Cargo	3
Parkia sp.	Baggage	1
Pectinophora gossypiella	Baggage	1
Pelidnota sp.	Permit Cargo	1
Penicillium sp.	Permit Cargo, Stores	3
Pennisetum ciliare	Permit Cargo	1
Pennisetum pedicellatum	Baggage	1
Pennisetum sp.	Permit Cargo	1
Pentatomidae spp.	Baggage, General cargo, Permit	215
Pentatominae spp.	General Cargo, Permit cargo	3
Pentatomoidea spp.	Baggage, Permit Cargo	31
Periconia sp.	Permit Cargo	1
Peridroma saucia	Baggage, Permit Cargo	2
Perigenes sp.	Permit Cargo	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Perillus bioculatus	Permit Cargo	1
Peritrechus fratenus	Permit Cargo	1
Phalacridae spp.	General Cargo, Permit cargo	9
Pheidole sp.	Baggage, Permit Cargo	4
Phenacoccus gossypii	Baggage, General Cargo	4
Phenacoccus helianthi	Permit Cargo	1
Phenacoccus madeirensis	Baggage, General cargo, Permit	30
Phenacoccus parvus	Baggage, General cargo, Permit	21
Phenacoccus solani	General Cargo, Mail, Permit Cargo	11
Phenacoccus solenopsis	Baggage, General cargo, Permit	21
Phenacoccus sp.	Baggage, General cargo, Permit	15
Phileurus sp.	Baggage	1
Phlaeothripidae spp.	Baggage, General cargo, Permit	24
Phlugis sp.	Permit Cargo	1
Phoma destructiva	Permit Cargo	4
Phoma sp.	Baggage, Permit Cargo, Stores	14
Phomopsis capsici	Baggage, Permit Cargo	6
Phomopsis sp.	Baggage, Permit Cargo	4
Phoradendron sp.	Permit Cargo	1
Phoridae spp.	Baggage, General Cargo, Mail,	39
Phragmites sp.	Permit Cargo	1
Phthorimaea operculella	Baggage, General Cargo	2
Phycitinae spp.	Baggage, General cargo, Mail,	17
Phylinae spp.	General Cargo	1
Phyllophaga sp.	Baggage, General cargo, Permit	27
Phyllosticta sp.	Baggage, Permit Cargo	4
Phyllostictina capsici	Baggage, Permit Cargo	2
Phyllotreta sp.	Permit Cargo	1
Phylloxera sp.	Permit Cargo	1
Phytocoris sp.	Permit Cargo	4
Phytomyzinae spp.	Baggage, Permit Cargo	3
Phytophthora capsici	Baggage	1
Phytoseiidae spp.	Baggage, General cargo, Permit	107
Picris sp.	Permit Cargo	1
Piesmatidae spp.	Permit Cargo	1
Pinnaspis sp.	Baggage, General Cargo	2
Pinnaspis strachani	Baggage	3
Piophilidae spp.	Baggage	1
Piper nigrum	Baggage	1
Pityophthorus sp.	General Cargo, Permit Cargo	26
Plagiometriona sp.	Baggage, Permit Cargo	2
Planicephalus flavicosta	Permit Cargo	1
Planococcus citri	Baggage, Permit Cargo	30
Planococcus citricus	Permit Cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Planococcus halli	Baggage	1
Planococcus minor	Baggage, General cargo, Permit	49
Planococcus sp.	Baggage, General cargo, Permit	27
Plantago sp.	Stores	1
Platynota rostrana	General Cargo, Permit Cargo	2
Platynota sp.	Baggage, General cargo, Permit	54
Platynota stultana	Permit Cargo	3
Platypodidae spp.	Permit Cargo	1
Pleurodonte guadeloupensis	Baggage	1
Plodia interpunctella	Baggage, General cargo, Mail,	32
Plusia sp.	Permit Cargo	1
Plusiinae spp.	Baggage, General cargo, Permit	16
Plutella sp.	Stores	1
Plutella xylostella	Baggage, Permit Cargo, Stores	5
Plutellidae spp.	Permit Cargo	1
Poaceae spp.	Permit Cargo	1
Podisus sp.	Permit Cargo	1
Pogonomyrmex rugosus	Permit Cargo	1
Polygyridae spp.	Permit Cargo	2
Polymerus testaceipes	Permit Cargo	1
Polyphagotarsonemus latus	Permit Cargo	1
Polyphylla sp.	Baggage, Permit Cargo	2
Praticolella griseola	Baggage, Permit Cargo	42
Praticolella sp.	Permit Cargo	3
Praticolella strebeliana	Permit Cargo	29
Premnotrypes sp.	Baggage	1
Prenolepis imparis	General Cargo	1
Prietocella barbara	Baggage, Stores	2
Proba sp.	Baggage	1
Prodiplosis sp.	Baggage, Permit Cargo	5
Prosapia sp.	Permit Cargo	1
Prosopis sp.	General Cargo	1
Prosterninae spp.	Permit Cargo	1
Prostigmata spp.	Baggage, Permit Cargo	2
Protopulvinaria longivalvata	Baggage	1
Prytanes confusus	Permit Cargo	3
Prytanes oblonga	Permit Cargo	2
Prytanes sp.	Permit Cargo	3
Psephenidae spp.	Permit Cargo	1
Pseudaletia unipuncta	Permit Cargo	1
Pseudatomoscelis seriatus	Permit Cargo	2
Pseudobaris cylindricollis	Permit Cargo	1
Pseudocaeciliidae spp.	Permit Cargo	1
Pseudococcidae spp.	Baggage, General cargo, Mail,	597

Pest Intercepted	Where Intercepted	Interceptions (no.)
Pseudococcus elisae	Baggage, Permit Cargo	5
Pseudococcus jackbeardsleyi	Baggage, Permit Cargo	17
Pseudococcus odermatti	Baggage, Permit Cargo	2
Pseudococcus sp.	Baggage, General cargo, Permit	20
Pseudococcus viburni	General Cargo, Permit Cargo	71
Pseudomyrmex mexicanus	Permit Cargo	1
Pseudopachybrachius basalis	General Cargo, Permit Cargo	2
Pseudopachybrachius vinctus	Permit Cargo	1
Pseudopamera aurivilliana	Permit Cargo	1
Pseudopamera sp.	Baggage, Permit Cargo	4
Psilidae spp.	Permit Cargo	6
Psocidae spp.	Permit Cargo	2
Psocoptera spp.	Baggage, General cargo, Permit	195
Psychidae spp.	Baggage	1
Psychodidae spp.	General Cargo, Permit Cargo	10
Psylla sp.	Permit Cargo	1
Psyllidae spp.	Baggage, General cargo, Permit	444
Psylliodes sp.	Permit Cargo	1
Psylloidea spp.	Baggage	6
Pteromalidae spp.	Baggage, Permit Cargo	3
Pteronemobius sp.	Permit Cargo	2
Pterophoridae spp.	Baggage, General cargo, Permit	9
Pthorimaea opercullela	Baggage	1
Ptiliidae spp.	Baggage, Stores	2
Ptochiomera nodosa	Permit Cargo	1
Puccinia sp.	Baggage	1
Pulvinaria psidii	Baggage	1
Pulvinaria sp.	Baggage, General cargo	4
Pulvinaria urbicola	Baggage, Permit Cargo	9
Puto barberi	Baggage	1
Pycnoderes sp.	Baggage	1
Pyralidae spp.	Baggage, General cargo, Mail,	60
Pyralinae spp.	Baggage	1
Pyrausta sp.	Baggage, Permit Cargo	6
Pyraustinae spp.	Baggage, General cargo, Mail,	108
Rasahus biguttatus	Permit Cargo	2
Reduviidae spp.	General Cargo, Permit Cargo	5
Reuteroscopus sp.	Permit Cargo	1
Rhabdopterus sp.	Permit Cargo	1
Rhagium sp.	Permit Cargo	1
Rhamphothrips pandens	Permit Cargo	1
Rhaphigaster nebulosa	Baggage, Permit Cargo	2
Rhizopus sp.	Baggage, Permit Cargo	2
Rhopalapion longirostre	Baggage	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Rhopalidae spp.	Baggage	1
Rhyparochromidae spp.	Baggage	1
Rhytidoporus indentatus	Permit Cargo	1
Riodinidae spp.	Baggage	2
Rottboellia cochinchinensis	Quarters	1
Saccharicoccus sacchari	Baggage	2
Saccharum spontaneum	Stores	1
Saissetia coffeae	Baggage	1
Saissetia neglecta	Baggage	1
Saissetia sp.	Baggage	1
Sancassania sp.	Baggage	1
Saprophyte sp.	Baggage, General cargo, Mail,	14
Sarasinula plebeia	Permit Cargo	1
Sarcophagidae spp.	Baggage, Permit Cargo	2
Sarcophaginae spp.	Baggage	1
Saturniidae spp.	Baggage	1
Scarinae spp.	Permit Cargo	1
Scatella sp.	Permit Cargo	1
Scatopsidae spp.	Permit Cargo	2
Scelionidae spp.	Permit Cargo	2
Schinus terebinthifolius	General Cargo	1
Schizocerella pilicornis	Permit Cargo	1
Schizomyia sp.	Baggage	1
Sciaridae spp.	Baggage, General cargo, Mail,	42
Sciocoris maculatus	Baggage	1
Scirtidae spp.	Permit Cargo	3
Scirtothrips dorsalis	Permit Cargo	6
Scirtothrips sp.	Baggage, Permit Cargo	8
Sclerotium rolfsii	Stores	1
Scolytidae spp.	General Cargo, Permit Cargo	44
Scolytus sp.	Permit Cargo	1
Scorpiones spp.	Permit Cargo	1
Scrophulariaceae spp.	Permit Cargo	1
Scymninae spp.	Permit Cargo	1
Scyphomphorus sp.	Permit Cargo	1
Scythridinae spp.	Permit Cargo	1
Secondary fungi	Baggage, Permit Cargo, Stores	35
Sennius sp.	Permit Cargo	1
Sepsidae spp.	Permit Cargo	2
Septoria sp.	Quarters, Stores	2
Serica sp.	Permit Cargo	1
Sericoderus sp.	General Cargo, Permit Cargo	8
Sesamia nonagrioides	Baggage	2
Setaria italica	General Cargo, Permit Cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Setaria sp.	Baggage, General Cargo	2
Setaria verticillata	Baggage	1
Silvanidae spp.	Baggage, Permit Cargo, Stores	6
Sitona humeralis	Permit Cargo	1
Sitona lineatus	Baggage, General Cargo	2
Sitona sp.	Baggage, General cargo, Permit	4
Sitophilus oryzae	Baggage	1
Sitophilus sp.	Baggage, General cargo, Permit	4
Sitophilus zeamais	Baggage	3
Sminthuridae spp.	Baggage	1
Solenopsis geminata	Baggage, Stores	2
Solenopsis sp.	Baggage, Permit Cargo	3
Sonchus arvensis	General Cargo, Permit Cargo	3
Sonchus asper	Permit Cargo	1
Sonchus oleraceus	Baggage, Permit Cargo	2
Sonchus sp.	Permit Cargo	1
Sorghum halepense	Permit Cargo	3
Sparganothis sp.	Permit Cargo	1
Sphaceloma psidii	Baggage	1
Sphaeroceridae spp.	General Cargo, Permit Cargo	2
Sphenophorus sp.	Baggage, Permit Cargo	3
Sphingidae spp.	Baggage, General cargo, Permit	7
Sphragisticus nebulosus	General Cargo	1
Spilomelinae spp.	Permit Cargo	3
Spilosoma sp.	Baggage	1
Spodoptera albula	Permit Cargo	2
Spodoptera androgea	Permit Cargo	1
Spodoptera dolichos	Permit Cargo	6
Spodoptera eridania	Permit Cargo	5
Spodoptera exigua	Baggage, General cargo, Permit	180
Spodoptera frugiperda	Baggage, General cargo, Mail,	130
Spodoptera latifascia	Baggage, General cargo, Permit	37
Spodoptera littoralis	Baggage, Permit Cargo, Stores	5
Spodoptera litura	Baggage	3
Spodoptera ornithogalli	Permit Cargo	3
Spodoptera sp.	Baggage, General cargo,	50
Spodoptera sunia	Permit Cargo	3
Spoladea recurvalis	Permit Cargo	1
Staphylinidae spp.	Baggage, General cargo, Permit	15
Stegobium paniceum	Baggage	1
Stemphylium botryosum	Permit Cargo, Stores	2
Stemphylium sp.	Baggage, Quarters, Stores	7
Stenozygum sp.	Permit Cargo	1
Stephanopachys sp.	General cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Sternorrhyncha spp.	Baggage	1
Stratiolaelaps sp.	Baggage, Permit cargo	2
Succinea costaricana	Permit Cargo	2
Succinea cuvieri	Permit Cargo	1
Succinea luteola	Permit Cargo	1
Succinea margarita	Permit Cargo	2
Succinea putris	Permit Cargo	1
Succinea sp.	Baggage, Permit Cargo	37
Symmetrischema capsicum	Baggage, Permit cargo	30
Symmetrischema sp.	Baggage	2
Syrphidae spp.	General Cargo, Permit Cargo	108
Syrphinae spp.	Permit Cargo	7
Syrphini spp.	General Cargo, Permit Cargo	3
Systena sp.	Permit Cargo	2
Tachinidae spp.	General cargo	2
Tachyporinae spp.	Permit Cargo	1
Tapinoma melanocephalum	Baggage	3
Taraxacum officinale	General cargo	5
Tarsonemus confusus	Permit Cargo	1
Tarsonemus sp.	Permit Cargo, Stores	6
Tarsonemus waitei	Permit Cargo	1
Telenomus sp.	Permit Cargo	1
Tenebrionidae spp.	Baggage, General cargo, Mail,	7
Tepa sp.	Baggage	1
Tephritidae spp.	Baggage, General cargo, Mail,	954
Tetramorium bicarinatum	Baggage, General Cargo	2
Tetramorium caespitum	Baggage	1
Tetranychidae spp.	Baggage, General cargo, Permit	5
Tetranychus ludeni	Permit Cargo	1
Tetranychus sp.	Baggage, General cargo, Permit	24
Tetranychus urticae	Baggage, Permit Cargo	2
Tetrapriocera longicornis	Permit Cargo	1
Tettigometridae spp.	Permit Cargo	1
Tettigoniidae spp.	General Cargo, Permit Cargo	24
Texananus spatulatus	Baggage	1
Thaumatotibia leucotreta	Baggage, Mail, Permit Cargo	180
Thaumatotibia sp.	Baggage	15
Theba pisana	Stores	5
Thelidomus aspera	Baggage	1
Thripidae spp.	Baggage, General cargo, Permit	206
Thripinae spp.	Permit Cargo	2
Thrips angusticeps	Baggage	1
Thrips fuscipennis	Permit Cargo	1
Thrips major	General Cargo	2

Pest Intercepted	Where Intercepted	Interceptions (no.)
Thrips nigropilosus	Permit Cargo	1
Thrips palmi	Baggage, General cargo, Permit	185
Thrips sp.	Baggage, General cargo, Permit	57
Thrips tabaci	Baggage, General cargo, Permit	31
Thyanta perditor	Permit Cargo	1
Thyanta sp.	Permit Cargo	1
Thylodrias contractus	Baggage	1
Thysanoptera spp.	Baggage, Mail, Permit Cargo	18
Thysanura spp.	Miscellaneous	1
Tineidae spp.	Baggage, Permit Cargo	7
Tingidae spp.	Baggage, Stores	2
Tipulidae spp.	General Cargo	2
Tomarus sp.	Permit Cargo	8
Tomolips sp.	Permit Cargo	1
Tortricidae spp.	Baggage, General cargo, Mail,	360
Tortricinae spp.	Baggage, General cargo, Mail,	333
Tospovirus tomato spotted wilt virus	Permit Cargo	1
Trachyderes mandibularis	Permit Cargo	1
Trialeurodes vaporariorum	Baggage, Quarters.	2
Tribolium castaneum	Baggage, General Cargo, Holds	7
Tribolium sp.	Baggage, General cargo, Permit	8
Trichobaris compacta	Permit Cargo	1
Trichobaris mucorea	Permit Cargo	1
Trichoplusia ni	General cargo, Permit cargo	4
Trichoptera spp.	General cargo, Permit cargo	4
Tricorynus sp.	Baggage	1
Trifolium sp.	General Cargo	1
Trigonella foenum-graecum	General Cargo	1
Trimerotropis pallidipennis	Permit Cargo	1
Trioza sp.	Baggage, Permit Cargo	13
Triozidae spp.	Baggage, General cargo, Permit	3032
Trogoderma granarium	Baggage	1
Trogoderma sp.	Stores	5
Trombidiinae spp.	Baggage	1
Trombidium sp.	Baggage	1
Tychius cuprifer	Stores	1
Typhaea stercorea	Permit Cargo	2
Typhlocybinae spp.	Permit Cargo	5
Typhlodromus sp.	Permit Cargo	1
Typophorus sp.	Permit Cargo	1
Tyrophagus putrescentiae	Baggage, Permit Cargo	4
Udea sp.	Permit Cargo, Stores	2
Udea testacea	General cargo	1
Uleiota debilis	General cargo	1

Pest Intercepted	Where Intercepted	Interceptions (no.)
Ulidiidae spp.	Baggage, Permit Cargo	8
Ulus sp.	Permit Cargo	1
Utetheisa ornatrix	Permit Cargo	1
Veliidae spp.	Permit Cargo	1
Veronicella cubensis	General cargo, Permit cargo	2
Veronicella sloanii	Baggage	1
Veronicella sp.	Baggage, General Cargo	6
Veronicellidae spp.	Baggage, General Cargo	2
Verticillium sp.	Permit Cargo	1
Vespidae spp.	General cargo, Permit cargo	2
Winnertzia sp.	Permit Cargo	1
Xanthochilus saturnius	General Cargo	1
Xanthomonas campestris pv. vesicatoria	Baggage, Permit Cargo	4
Xanthomonas vesicatoria	Permit Cargo	1
Xenotarsonemus sp.	Permit Cargo	1
Xerophloea sp.	Permit Cargo	1
Xerotricha conspurcata	Baggage, General Cargo	2
Xestia sp.	Permit Cargo	1
Xestocephalus sp.	Permit Cargo	1
Xyleborus ferrugineus	Permit Cargo	1
Xyleborus intrusus	General cargo	1
Xyleborus volvulus	General cargo	1
Xylodiplosis sp.	Permit Cargo	1
Xylomeira torquata	Permit Cargo	1
Xyonysius sp.	Baggage	1
Zabrotes sp.	Permit Cargo	1
Zachrysia auricoma	Baggage	2
Zachrysia sp.	Permit Cargo	1
Zercoseius sp.	Permit Cargo	1
Zonitoides arboreus	Permit Cargo	5
Zygogramma sp.	Baggage, Permit Cargo	2
Grand Total		**27,807**