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Pest categorisation of *Grapholita prunivora*

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Abstract

The European Commission requested EFSA to conduct a pest categorisation of *Grapholita prunivora* (Lepidoptera: Tortricidae), an oligophagous moth whose larvae feed mostly on leaves and fruit of different Rosaceae including cultivated apples, plums, cherries and pecans. It overwinters in soil and bark crevices of its host plants. *G. prunivora* has reliable identification methods, both for adults and immature stages. It occurs in North America, where it can impact pome and stone fruit production, especially when broad spectrum insecticides targeting pome and stone fruit key pests are substituted by more selective crop protection methods (i.e. mating disruption, biological control). *G. prunivora* is regulated in the EU by EU Directive 2000/29/EC where it is listed in Annex IIAI using the synonym *Enarmonia prunivora*. Plants for planting, fruit, cut branches, and bark are potential pathways. Most, but not all hosts are regulated, e.g. pecan (*Carya* sp.). There are no records of interception of this species on Europhyt. Biotic and abiotic conditions are conducive for establishment and spread of *G. prunivora* in the EU. Therefore, were *G. prunivora* to establish, impact on pome and stone fruit production could be expected. Considering the criteria within the remit of EFSA to assess its regulatory plant health status, *G. prunivora* meets with no uncertainties the criteria for consideration as a potential Union quarantine pest (it is absent from the EU, potential pathways exist, and its establishment would cause an economic impact). Given that *G. prunivora* is not known to occur in the EU, it fails to meet this criterion required for regulated non-quarantine pest (RNQP) status.

Keywords: European Union, pest risk, plant health, plant pest, quarantine, Tortricidae, lesser appleworm, plum moth

Requestor: European Commission

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Table of contents

1. Introduction

1.1. Background and Terms of Reference as provided by the requestor

1.1.1. Background

Council Directive 2000/29/EC[1] on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community establishes the present European Union plant health regime. The Directive lays down the phytosanitary provisions and the control checks to be carried out at the place of origin on plants and plant products destined for the Union or to be moved within the Union. In the Directive's 2000/29/EC annexes, the list of harmful organisms (pests) whose introduction into or spread within the Union is prohibited, is detailed together with specific requirements for import or internal movement.

Following the evaluation of the plant health regime, the new basic plant health law, Regulation (EU) 2016/2031[2] on protective measures against pests of plants, was adopted on 26 October 2016 and will apply from 14 December 2019 onwards, repealing Directive 2000/29/EC. In line with the principles of the above mentioned legislation and the follow-up work of the secondary legislation for the listing of EU regulated pests, EFSA is requested to provide pest categorisations of the harmful organisms included in the annexes of Directive 2000/29/EC, in the cases where recent pest risk assessment/pest categorisation is not available.

1.1.2. Terms of reference

EFSA is requested, pursuant to Article 22(5.b) and Article 29(1) of Regulation (EC) No 178/2002[3], to provide scientific opinion in the field of plant health.

EFSA is requested to prepare and deliver a pest categorisation (step 1 analysis) for each of the regulated pests included in the appendices of the annex to this mandate. The methodology and template of pest categorisation have already been developed in past mandates for the organisms listed in Annex II Part A Section II of Directive 2000/29/EC. The same methodology and outcome is expected for this work as well.

The list of the harmful organisms included in the annex to this mandate comprises 133 harmful organisms or groups. A pest categorisation is expected for these 133 pests or groups and the delivery of the work would be stepwise at regular intervals through the year as detailed below. First priority covers the harmful organisms included in Appendix 1, comprising pests from Annex II Part A Section I and Annex II Part B of Directive 2000/29/EC. The delivery of all pest categorisations for the pests included in Appendix 1 is June 2018. The second priority is the pests included in Appendix 2, comprising the group of *Cicadellidae* (non-EU) known to be vector of Pierce's disease (caused by *Xylella fastidiosa*), the group of *Tephritidae* (non-EU), the group of potato viruses and virus-like organisms, the group of viruses and virus-like organisms of *Cydonia* Mill., *Fragaria* L., *Malus* Mill., *Prunus* L., *Pyrus* L., *Ribes* L., *Rubus* L. and *Vitis* L.. and the group of *Margarodes* (non-EU species). The delivery of all pest categorisations for the pests included in Appendix 2 is end 2019. The pests included in Appendix 3 cover pests of Annex I part A section I and all pests categorisations should be delivered by end 2020.

For the above mentioned groups, each covering a large number of pests, the pest categorisation will be performed for the group and not the individual harmful organisms listed under "such as" notation in the Annexes of the Directive 2000/29/EC. The criteria to be taken particularly under consideration for these cases, is the analysis of host pest combination, investigation of pathways, the damages occurring and the relevant impact.

Finally, as indicated in the text above, all references to 'non-European' should be avoided and replaced by 'non-EU' and refer to all territories with exception of the Union territories as defined in Article 1 point 3 of Regulation (EU) 2016/2031.

[1] Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community. OJ L 169/1, 10.7.2000, p. 1–112.

[2] Regulation (EU) 2016/2031 of the European Parliament of the Council of 26 October 2016 on protective measures against pests of plants. OJ L 317, 23.11.2016, p. 4–104.

[3] Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. OJ L 31/1, 1.2.2002, p. 1–24.

1.1.2.1. Terms of Reference: Appendix 1

List of harmful organisms for which pest categorisation is requested. The list below follows the annexes of Directive 2000/29/EC.

Annex IIAI

(a) Insects, mites and nematodes, at all stages of their development

Aleurocantus spp.
Anthonomus bisignifer (Schenkling)
Anthonomus signatus (Say)
Aschistonyx eppoi Inouye
Carposina niponensis Walsingham
Enarmonia packardi (Zeller)
Enarmonia prunivora Walsh
Grapholita inopinata Heinrich
Hishomonus phycitis
Leucaspis japonica Ckll.
Listronotus bonariensis (Kuschel)
Numonia pyrivorella (Matsumura)
Oligonychus perditus Pritchard and Baker
Pissodes spp. (non-EU)
Scirtothrips aurantii Faure
Scirtothrips citri (Moultex)
Scolytidae spp. (non-EU)
Scrobipalpopsis solanivora Povolny
Tachypterellus quadrigibbus Say
Toxoptera citricida Kirk.
Unaspis citri Comstock

(b) Bacteria

Citrus variegated chlorosis
Erwinia stewartii (Smith) Dye
Xanthomonas campestris pv. *oryzae* (Ishiyama) Dye and pv. *oryzicola* (Fang. et al.) Dye

(c) Fungi

Alternaria alternata (Fr.) Keissler (non-EU pathogenic isolates)
Anisogramma anomala (Peck) E. Müller
Apiosporina morbosa (Schwein.) v. Arx
Ceratocystis virescens (Davidson) Moreau
Cercoseptoria pini-densiflorae (Hori and Nambu) Deighton
Cercospora angolensis Carv. and Mendes
Elsinoe spp. Bitanc. and Jenk. Mendes
Fusarium oxysporum f. sp. *albedinis* (Kilian and Maire) Gordon
Guignardia piricola (Nosa) Yamamoto
Puccinia pittieriana Hennings
Stegophora ulmea (Schweinitz: Fries) Sydow & Sydow
Venturia nashicola Tanaka and Yamamoto

(d) Virus and virus-like organisms

Beet curly top virus (non-EU isolates)
Black raspberry latent virus
Blight and blight-like
Cadang-Cadang viroid
Citrus tristeza virus (non-EU isolates)
Leprosis
Little cherry pathogen (non- EU isolates)
Naturally spreading psorosis
Palm lethal yellowing mycoplasm
Satsuma dwarf virus
Tatter leaf virus
Witches' broom (MLO)

Annex IIB

(a) Insect mites and nematodes, at all stages of their development

Anthonomus grandis (Boh.)
Cephalcia lariciphila (Klug)
Dendroctonus micans Kugelan
Gilphinia hercyniae (Hartig)
Gonipterus scutellatus Gyll.
Ips amitinus Eichhof
Ips cembrae Heer
Ips duplicatus Sahlberg
Ips sexdentatus Börner
Ips typographus Heer
Sternochetus mangiferae Fabricius

(b) Bacteria

Curtobacterium flaccumfaciens pv. flaccumfaciens (Hedges) Collins and Jones

(c) Fungi

Glomerella gossypii Edgerton
Gremmeniella abietina (Lag.) Morelet
Hypoxylon mammatum (Wahl.) J. Miller

1.1.2.2. Terms of Reference: Appendix 2

List of harmful organisms for which pest categorisation is requested per group. The list below follows the categorisation included in the annexes of Directive 2000/29/EC.

Annex IAI

(a) Insects, mites and nematodes, at all stages of their development

Group of Cicadellidae (non-EU) known to be vector of Pierce's disease (caused by *Xylella fastidiosa*), such as:

1) *Carneocephala fulgida* Nottingham
2) *Draeculacephala minerva* Ball
3) *Graphocephala atropunctata* (Signoret)

Group of Tephritidae (non-EU) such as:

1) *Anastrepha fraterculus* (Wiedemann)
2) *Anastrepha ludens* (Loew)
3) *Anastrepha obliqua* Macquart
4) *Anastrepha suspensa* (Loew)
5) *Dacus ciliatus* Loew
6) *Dacus curcurbitae* Coquillet
7) *Dacus dorsalis* Hendel
8) *Dacus tryoni* (Froggatt)
9) *Dacus tsuneonis* Miyake
10) *Dacus zonatus* Saund.
11) *Epochra canadensis* (Loew)
12) *Pardalaspis cyanescens* Bezzi
13) *Pardalaspis quinaria* Bezzi
14) *Pterandrus rosa* (Karsch)
15) *Rhacochlaena japonica* Ito
16) *Rhagoletis completa* Cresson
17) *Rhagoletis fausta* (Osten-Sacken)
18) *Rhagoletis indifferens* Curran
19) *Rhagoletis mendax* Curran
20) *Rhagoletis pomonella* Walsh
21) *Rhagoletis suavis* (Loew)

(c) Viruses and virus-like organisms

Group of potato viruses and virus-like organisms such as:

1) Andean potato latent virus
2) Andean potato mottle virus
3) Arracacha virus B, oca strain
4) Potato black ringspot virus
5) Potato virus T
6) non-EU isolates of potato viruses A, M, S, V, X and Y (including Yo, Yn and Yc) and Potato leafroll virus

Group of viruses and virus-like organisms of *Cydonia* Mill., *Fragaria* L., *Malus* Mill., *Prunus* L., *Pyrus* L., *Ribes* L., *Rubus* L. and *Vitis* L., such as:

1) Blueberry leaf mottle virus
2) Cherry rasp leaf virus (American)
3) Peach mosaic virus (American)
4) Peach phony rickettsia
5) Peach rosette mosaic virus
6) Peach rosette mycoplasm
7) Peach X-disease mycoplasm
8) Peach yellows mycoplasm
9) Plum line pattern virus (American)
10) Raspberry leaf curl virus (American)
11) Strawberry witches' broom mycoplasma
12) Non-EU viruses and virus-like organisms of *Cydonia Mill., Fragaria L., Malus Mill., Prunus L., Pyrus L., Ribes L., Rubus L.* and *Vitis L.*

Annex IIAI

(a) Insects, mites and nematodes, at all stages of their development

Group of *Margarodes* (non-EU species) such as:

1) *Margarodes vitis* (Phillipi)
2) *Margarodes vredendalensis* de Klerk
3) *Margarodes prieskaensis* Jakubski

1.1.2.3. Terms of Reference: Appendix 3

List of harmful organisms for which pest categorisation is requested. The list below follows the annexes of Directive 2000/29/EC.

Annex IAI

(a) Insects, mites and nematodes, at all stages of their development

Acleris spp. (non-EU)
Amauromyza maculosa (Malloch)
Anomala orientalis Waterhouse
Arrhenodes minutus Drury
Choristoneura spp. (non-EU)
Conotrachelus nenuphar (Herbst)
Dendrolimus sibiricus Tschetverikov
Diabrotica barberi Smith and Lawrence
Diabrotica undecimpunctata howardi Barber
Diabrotica undecimpunctata undecimpunctata Mannerheim
Diabrotica virgifera zeae Krysan & Smith
Diaphorina citri Kuway
Heliothis zea (Boddie)
Hirschmanniella spp., other than *Hirschmanniella gracilis* (de Man) Luc and Goodey
Liriomyza sativae Blanchard
Longidorus diadecturus Eveleigh and Allen
Monochamus spp. (non-EU)
Myndus crudus Van Duzee
Nacobbus aberrans (Thorne) Thorne and Allen
Naupactus leucoloma Boheman
Premnotrypes spp. (non-EU)
Pseudopityophthorus minutissimus (Zimmermann)
Pseudopityophthorus pruinosus (Eichhoff)
Scaphoideus luteolus (Van Duzee)
Spodoptera eridania (Cramer)
Spodoptera frugiperda (Smith)
Spodoptera litura (Fabricus)
Thrips palmi Karny
Xiphinema americanum Cobb sensu lato (non-EU populations)
Xiphinema californicum Lamberti and Bleve-Zacheo

(b) Fungi

Ceratocystis fagacearum (Bretz) Hunt
Chrysomyxa arctostaphyli Dietel
Cronartium spp. (non-EU)
Endocronartium spp. (non-EU)
Guignardia laricina (Saw.) Yamamoto and Ito
Gymnosporangium spp. (non-EU)
Inonotus weirii (Murril) Kotlaba and Pouzar
Melampsora farlowii (Arthur) Davis
Mycosphaerella larici-leptolepis Ito et al.
Mycosphaerella populorum G. E. Thompson
Phoma andina Turkensteen
Phyllosticta solitaria Ell. and Ev.
Septoria lycopersici Speg. var. *malagutii* Ciccarone and Boerema
Thecaphora solani Barrus
Trechispora brinkmannii (Bresad.) Rogers

(c) Viruses and virus-like organisms

Tobacco ringspot virus
Tomato ringspot virus
Bean golden mosaic virus
Cowpea mild mottle virus
Lettuce infectious yellows virus
Pepper mild tigré virus
Squash leaf curl virus
Euphorbia mosaic virus
Florida tomato virus

(d) Parasitic plants

Arceuthobium spp. (non-EU)

Annex IAII

(a) Insects, mites and nematodes, at all stages of their development

Meloidogyne fallax Karssen
Popillia japonica Newman
Rhizoecus hibisci Kawai and Takagi

(b) Bacteria

Clavibacter michiganensis (Smith) Davis et al. ssp. *sepedonicus* (Spieckermann and Kotthoff) Davis et al.
Ralstonia solanacearum (Smith) Yabuuchi et al.

(c) Fungi

Melampsora medusae Thümen
Synchytrium endobioticum (Schilbersky) Percival

Annex I B

(a) Insects, mites and nematodes, at all stages of their development

Leptinotarsa decemlineata Say
Liriomyza bryoniae (Kaltenbach)

(b) Viruses and virus-like organisms

Beet necrotic yellow vein virus

1.2. Interpretation of the Terms of Reference

Enarmonia prunivora Walsh is one of a number of pests listed in the Appendices to the Terms of Reference (ToR) to be subject to pest categorisation to determine whether it fulfils the criteria of a quarantine pest or those of a regulated non-quarantine pest (RNQP) for the area of the EU excluding Ceuta, Melilla and the outermost regions of Member States (MS) referred to in Article 355(1) of the Treaty on the Functioning of the European Union (TFEU), other than Madeira and the Azores. However, the current valid name for *E. prunivora* Walsh is *Grapholita prunivora* (Walsh, 1868). The species under scrutiny in this opinion will be referred to using its currently valid name.

2. Data and methodologies

2.1. Data

2.1.1. Literature search

A literature search on *G. prunivora* was conducted at the beginning of the categorisation in the ISI Web of Science bibliographic database, using the scientific name of the pest as well as its synonyms as search terms. Relevant papers were reviewed and further references and information were obtained from experts, as well as from citations within the references and grey literature.

2.1.2. Database search

Pest information, on host(s) and distribution, was retrieved from the European and Mediterranean Plant Protection Organization (EPPO) Global Database (EPPO, 2018) and relevant publications.

Data about the import of commodity types that could potentially provide a pathway for the pest to enter the EU and about the area of hosts grown in the EU were obtained from EUROSTAT (Statistical Office of the European Communities).

The Europhyt database was consulted for pest-specific notifications on interceptions and outbreaks. Europhyt is a web-based network run by the Directorate General for Health and Food Safety (DG SANTÉ) of the European Commission, and is a subproject of PHYSAN (Phyto-Sanitary Controls) specifically concerned with plant health information. The Europhyt database manages notifications of interceptions of plants or plant products that do not comply with EU legislation, as well as notifications of plant pests detected in the territory of the MS and the phytosanitary measures taken to eradicate or avoid their spread.

2.2. Methodologies

The Panel performed the pest categorisation for *G. prunivora,* following guiding principles and steps presented in the EFSA guidance on the harmonised framework for pest risk assessment (EFSA PLH Panel, 2018) and as defined in the International Standard for Phytosanitary Measures No 11 (FAO, 2013) and No 21 (FAO, 2004).

This work was initiated following an evaluation of the EU plant health regime. Therefore, to facilitate the decision-making process, in the conclusions of the pest categorisation, the Panel addresses explicitly each criterion for a Union quarantine pest and for a Union RNQP in accordance with Regulation (EU) 2016/2031 on protective measures against pests of plants, and includes additional information required in accordance with the specific terms of reference received by the European Commission. In addition, for each conclusion, the Panel provides a short description of its associated uncertainty.

Table 1 presents the Regulation (EU) 2016/2031 pest categorisation criteria on which the Panel bases its conclusions. All relevant criteria have to be met for the pest to potentially qualify either as a quarantine pest or as a RNQP. If one of the criteria is not met, the pest will not qualify. A pest that does not qualify as a quarantine pest may still qualify as a RNQP that needs to be addressed in the opinion. For the pests regulated in the protected zones only, the scope of the categorisation is the territory of the protected zone; thus, the criteria refer to the protected zone instead of the EU territory.

It should be noted that the Panel's conclusions are formulated respecting its remit and particularly with regard to the principle of separation between risk assessment and risk management (EFSA founding regulation (EU) No 178/2002); therefore, instead of determining whether the pest is likely to have an unacceptable impact, the Panel will present a summary of the observed pest impacts. Economic impacts are expressed in terms of yield and quality losses and not in monetary terms, whereas addressing social impacts is outside the remit of the Panel.

Table 1: Pest categorisation criteria under evaluation, as defined in Regulation (EU) 2016/2031 on protective measures against pests of plants (the number of the relevant sections of the pest categorisation is shown in brackets in the first column)

Criterion of pest categorisation	Criterion in Regulation (EU) 2016/2031 regarding Union quarantine pest	Criterion in Regulation (EU) 2016/2031 regarding protected zone quarantine pest (articles 32–35)	Criterion in Regulation (EU) 2016/2031 regarding Union regulated non-quarantine pest
Identity of the pest (Section 3.1)	Is the identity of the pest established, or has it been shown to produce consistent symptoms and to be transmissible?	Is the identity of the pest established, or has it been shown to produce consistent symptoms and to be transmissible?	Is the identity of the pest established, or has it been shown to produce consistent symptoms and to be transmissible?
Absence/ presence of the pest in the EU territory (Section 3.2)	Is the pest present in the EU territory? If present, is the pest widely distributed within the EU? Describe the pest distribution briefly!	Is the pest present in the EU territory? If not, it cannot be a protected zone quarantine organism	Is the pest present in the EU territory? If not, it cannot be a regulated non-quarantine pest. (A regulated non-quarantine pest must be present in the risk assessment area)
Regulatory status (Section 3.3)	If the pest is present in the EU but not widely distributed in the risk assessment area, it should be under official control or expected to be under official control in the near future	The protected zone system aligns with the pest free area system under the International Plant Protection Convention (IPPC). The pest satisfies the IPPC definition of a quarantine pest that is not present in the risk assessment area (i.e. protected zone)	Is the pest regulated as a quarantine pest? If currently regulated as a quarantine pest, are there grounds to consider its status could be revoked?

Criterion of pest categorisation	Criterion in Regulation (EU) 2016/2031 regarding Union quarantine pest	Criterion in Regulation (EU) 2016/2031 regarding protected zone quarantine pest (articles 32–35)	Criterion in Regulation (EU) 2016/2031 regarding Union regulated non-quarantine pest
Pest potential for entry, establishment and spread in the EU territory (Section 3.4)	Is the pest able to enter into, become established in, and spread within, the EU territory? If yes, briefly list the pathways!	Is the pest able to enter into, become established in, and spread within, the protected zone areas? Is entry by natural spread from EU areas where the pest is present possible?	Is spread mainly via specific plants for planting, rather than via natural spread or via movement of plant products or other objects? Clearly state if plants for planting is the main pathway!
Potential for consequences in the EU territory (Section 3.5)	Would the pests' introduction have an economic or environmental impact on the EU territory?	Would the pests' introduction have an economic or environmental impact on the protected zone areas?	Does the presence of the pest on plants for planting have an economic impact, as regards the intended use of those plants for planting?
Available measures (Section 3.6)	Are there measures available to prevent the entry into, establishment within or spread of the pest within the EU such that the risk becomes mitigated?	Are there measures available to prevent the entry into, establishment within or spread of the pest within the protected zone areas such that the risk becomes mitigated? Is it possible to eradicate the pest in a restricted area within 24 months (or a period longer than 24 months where the biology of the organism so justifies) after the presence of the pest was confirmed in the protected zone?	Are there measures available to prevent pest presence on plants for planting such that the risk becomes mitigated?
Conclusion of pest categorisation (Section 4)	A statement as to whether (1) all criteria assessed by EFSA above for consideration as a potential quarantine pest were met and (2) if not, which one(s) were not met	A statement as to whether (1) all criteria assessed by EFSA above for consideration as potential protected zone quarantine pest were met, and (2) if not, which one(s) were not met	A statement as to whether (1) all criteria assessed by EFSA above for consideration as a potential regulated non-quarantine pest were met, and (2) if not, which one(s) were not met

The Panel will not indicate in its conclusions of the pest categorisation whether to continue the risk assessment process, but following the agreed two-step approach, will continue only if requested by the risk managers. However, during the categorisation process, experts may identify key elements and knowledge gaps that could contribute significant uncertainty to a future assessment of risk. It would be useful to identify and highlight such gaps so that potential future requests can specifically target the major elements of uncertainty, perhaps suggesting specific scenarios to examine.

3. Pest categorisation

3.1. Identity and biology of the pest

3.1.1. Identity and taxonomy

Is the identity of the pest established, or has it been shown to produce consistent symptoms and to be transmissible?

Yes, the identity of *G. prunivora* is well established.

The lesser appleworm or plum moth, *G. prunivora* (Walsh), is an insect of the order Lepidoptera, family Tortricidae, which can be a pest of apples, cherries and plums in North America (Michigan State University, 2018). This species was originally described by Benjamin D. Walsh in 1868 (Walsh, 1868) from specimens captured in Illinois (USA) and placed in the genus *Semasia* Stephens, 1829 (Krawczyk, 1996). Other synonyms include *Cydia prunivora* (Walsh), *Enarmonia prunivora* (Walsh), *Epinotia prunivora* (Walsh) and *Laspeyresia prunivora* (Walsh) (Krawczyk, 1996; EPPO, 2018).

3.1.2. Biology of the pest

The life cycle and phenology of *G. prunivora* is similar to that of the codling moth, *Cydia pomonella* L. (EPPO, 1979), a key pest of apples in the EU (EPPO, 1999). *G. prunivora* overwinters as a fully grown larva in the debris on the ground (Brown and Jones, 1953) or in cracks and crevices of the bark of host trees (Quaintance, 1908) (see Section 3.4.1 host range). In the western fruit district of New York State (north-eastern USA), and in Ontario (Canada), pupation takes place in May and lasts for 2–3 weeks (EPPO, 1979). The flight of this first generation extends for about 1 month, from May until June (Brown, 1953; Chapman and Lienk, 1971). Eggs are deposited singly, either on young fruits or on the adaxial surface of leaves (Taylor, 1909). Hatching takes place in 1–2 weeks in Oregon (north western USA) weather conditions (Brown, 1953). Larvae of the first summer generation become fully grown over the latter half of July to early August (EPPO, 1979). Many of them complete their development on fallen fruits on the ground (EPPO, 1979). Subsequently, they pupate either in the fruit or in the ground (Brown and Jones, 1953). Pupation lasts 12–24 days depending on the weather conditions (Taylor, 1909; Brown, 1953; Chapman and Lienk, 1971). In Oregon, *G. prunivora* required 1.5–2 months to complete the cycle and, as a consequence, the adults of the second generation could be observed as early as late June (Brown and Jones, 1953). However, in eastern USA states, the second generation starts in late July until October (Chapman and Lienk, 1971; Howitt, 1993). *G. prunivora* is therefore a multivoltine species, which completes two or three generations per year (Dean, 1969; Chapman and Lienk, 1971; Rivard and Mailloux, 1974). The third generation, though, may be incomplete when larvae cannot finalise development (EPPO, 1979).

3.1.3. Intraspecific diversity

Neven and Mantey (2004) studied life history data of a golden colour sport (strain) discovered in the F_5 generation of a laboratory colony started with specimens collected in the State of Washington (north-western USA). These authors reported a 12.0% decrease in successful mating events for golden compared to wild-type females. Moreover, golden females laid 15.0% fewer eggs, and egg hatching also decreased. Whether these differences may have a genetic basis, though, was not reported.

3.1.4. Detection and identification of the pest

Are detection and identification methods available for the pest?

Yes, detection and identification methods for *G. prunivora*, including molecular methods for immature stages, are available.

Detection:

Symptoms: According to EPPO (1979), 'at first sight, damage may be confused with that caused by *C. pomonella*, especially when the larvae penetrate to the pips. In general, as the larvae feed, they hollow out superficial galleries (usually less than 6 mm deep) under the skin, which remains intact at first, but then wrinkles, turns brown and ampoules form where excrements accumulate. The ampoules usually form in the calyx end of the fruit, but they may also be found near the peduncle or around the apple. Those apples attacked by the first generation tend to fall prematurely, while, later in the season, the fruit may remain on the tree until harvest, but is rendered unsaleable'.

Pheromone trapping: According to Roelofs et al. (1969), the main components of *G. prunivora* sex pheromone are (*Z*)-8-dodecenyl acetate (Z8-12:Ac) and (*E*)-8-dodecenyl acetate (E8-12:Ac). These primary components are shared among other *Grapholita* spp. with their ratio in the mixture playing a key role (Krawczyk, 1996). For *G. prunivora*, the best mixture of sex pheromone chemicals contains 2.2% of E8-12:Ac (Roelofs and Carde, 1974). However, Baker and Carde (1979) found that optimum blend for capturing this species in pheromone traps included 5.1% of the *cis*-(*E*)-isomer.

Identification:

Adults and late instars of *G prunivora* can be identified using morphological characterisation for which taxonomic keys exist (see below). However, smaller larval stages (L1–L3) often cannot be reliably separated from closely related species with currently used morphological traits. Bárcenas et al. (2005) developed a diagnostic polymerase chain reaction (PCR) for differentiating among larvae of the North American internal pome fruit-feeding, oriental fruit moth, *Grapholita molesta* (Busck), cherry fruitworm, *Grapholita packardi* Zeller, *C. pomonella* and *G. prunivora*. This method, which facilitates identification of intercepted internal feeding Lepidoptera in pome fruit, was validated as a decision-making tool for quarantine identifications for Mexico.

Morphology: Descriptions of the different stages can be found in Quaintance (1908), Foster and Jones (1909), Taylor (1909), MacKay (1959), Chapman and Lienk (1971), Krawczyk (1996) and Gilligan et al. (2008). Below, a summary of their main characteristics is presented.

Egg: Up to 0.70 mm long and 0.55 mm wide, creamy when freshly laid and showing a pinkish ring after a few days. A day before hatching, the darker anterior and posterior of the larva are visible through the chorion as a dark spot.

Larvae: As mentioned above, larvae of *G. prunivora* and those of *G. molesta* and *G. packardi* are very similar and difficult to distinguish. Fully grown larvae are 6–10 mm long and pinkish. Contrary to the other two species, *G. prunivora* retains this colour after storage in 70% alcohol.

Pupa: Golden brown and 4.5–6.0 mm long, enclosed in a cocoon about 6 mm long made of bits of surrounding bark and white silk.

Adult: 7.5–9.5 mm long, with a wingspan within the range of 9.5–11 mm. The forewing pattern contains scales of white, blue, greyish orange, rosaceous brown and dark brown.

3.2. Pest distribution

3.2.1. Pest distribution outside the EU

G. prunivora is present in the Nearctic Region only (Figure 1).

The distribution of *G. prunivora* outside of the EU is detailed in Table 2.

Table 2: Distribution of *Grapholita prunivora* outside the EU (EPPO Global database, accessed 10/10/2018)

Continent	Country	State	Status
America	Canada		Present, restricted distribution
		British Columbia	Present, no details
		Manitoba	Present, no details
		New Brunswick	Present, no details
		Nova Scotia	Present, no details
		Ontario	Present, no details
		Québec	Present, no details
	Mexico		Present, restricted distribution
	United States of America		Present, restricted distribution
		Arkansas	Present, no details
		California	Present, no details
		Colorado	Present, no details
		Georgia	Present, no details
		Idaho	Present, no details
		Illinois	Present, no details
		Indiana	Present, no details
		Iowa	Present, no details
		Maine	Present, no details
		Maryland	Present, no details
		Massachusetts	Present, no details
		Michigan	Present, no details

Continent	Country	State	Status
		Missouri	Present, no details
		New York	Present, no details
		Ohio	Present, no details
		Oregon	Present, no details
		Pennsylvania	Present, no details
		Virginia	Present, no details
		Washington	Present, no details
		West Virginia	Present, no details
		Wisconsin	Present, no details

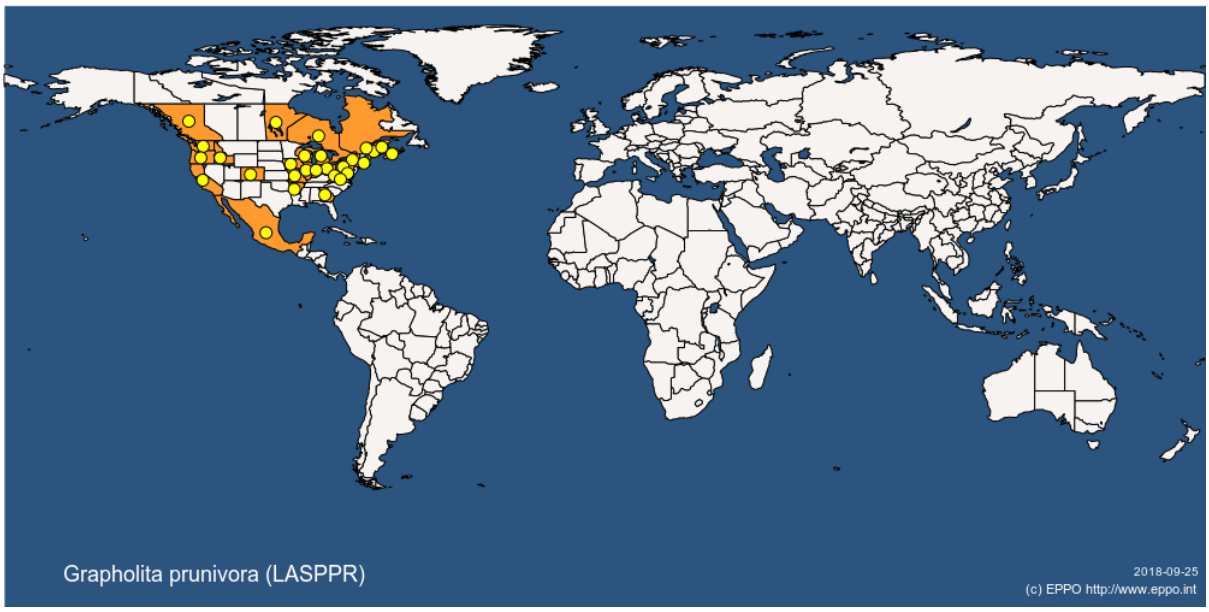

Figure 1: Global distribution map for *Grapholita prunivora* (extracted from the EPPO Global Databse accessed on 25/9/2018)

3.2.2. Pest distribution in the EU

Is the pest present in the EU territory? If present, is the pest widely distributed within the EU?

No, *G. prunivora* is not known to occur in the EU.

According to EPPO (2018) (accessed on 25 September 2018), the current distribution of *G. prunivora* does not include any of the 28 EU MS. In Slovenia, this pest is reported as absent, no pest record.

3.3. Regulatory status

3.3.1. Council Directive 2000/29/EC

G. prunivora is listed as *Enarmonia prunivora* Walsh in Council Directive 2000/29/EC. Details are presented in Tables 3 and 4 (see Section 1.2).

Table 3: *Grapholita prunivora* in Council Directive 2000/29/EC

Annex II, Part A	**Harmful organisms whose introduction into, and spread within, all member states shall be banned if they are present on certain plants or plant products**	
Section I	**Harmful organisms not known to occur in the community and relevant for the entire community**	
(a)	Insects, mites and nematodes, at all stages of their development	
	Species	**Subject of contamination**
5.	*Enarmonia prunivora* Walsh	Plants of *Crataegus* L., *Malus* Mill., *Photinia* Ldl., *Prunus* L. and *Rosa* L., intended for planting, other than seeds, and fruit of *Malus* Mill. and *Prunus* L., originating in non-European countries

3.3.2. Legislation addressing the hosts of *Grapholita prunivora*

Table 4: Regulated hosts and commodities that may involve *Grapholita prunivora* in Annexes III and V of Council Directive 2000/29/EC

Annex III, Part A	**Plants, plant products and other objects the introduction of which shall be prohibited in all Member States**	
	Description	**Country of origin**
9	Plants of […] *Cydonia* Mill., *Crataegus* L., *Malus* Mill., […], *Pyrus* L., and *Rosa* L. intended for planting, other than dormant plants free from leaves, flowers and fruit	Non-European countries
9.1	Plants of *Photinia* Ldl., intended for planting, other than dormant plants free from leaves, flowers and fruit	USA, China, Japan, the Republic of Korea and Democratic People's Republic of Korea
14	Soil and growing medium as such, which consists in whole or in part of soil or solid organic substances such as parts of plants, humus including peat or bark, other than that composed entirely of peat	Turkey, Belarus, ►A1 _____ ◄ Moldavia, Russia, Ukraine and third countries not belonging to continental Europe, other than the following: ►A1 _____ ◄ Egypt, Israel, Libya, ►A1 _____ ◄ Morocco, Tunisia
18	Plants of *Cydonia* Mill., *Malus* Mill., *Prunus* L., and *Pyrus* L. and their hybrids, and […], intended for planting, other than seeds	Without prejudice to the prohibitions applicable to the plants listed in Annex IIIA(9), where appropriate, non-European countries, other than Mediterranean countries, Australia, New Zealand, Canada, the continental states of the USA
Annex V	**Plants, plant products and other objects which must be subject to a plant health inspection (at the place of production if originating in the Community, before being moved within the Community—in the country of origin or the consignor country, if originating outside the Community) before being permitted to enter the Community**	
Part B	**Plants, plant products and other objects originating outside the Community**	
Section I	**Plants, plant products and other objects which are potential carriers of harmful organisms of relevance for the entire Community**	
1	Plants, intended for planting, other than seeds	
	1. Plants, intended for planting, other than seeds but including seeds of […] *Prunus* L., […]	
	2. Parts of plants, other than fruits and seeds, of: — […] *Quercus* L […], — *Prunus* L., originating in non-European countries, — Cut flowers of […] *Rosa* L. […] originating in non-European countries, — Cut branches of […] *Ulmus davidiana* Planch. […] with or without foliage, originating in Canada […] and USA, […]	
	3. Fruits of: — […] *Cydonia* Mill., […], *Malus* Mill., […] *Prunus* L., […] *Pyrus* L., […]., originating in non-European countries.	

	6. Wood within the meaning of the first subparagraph of Article 2(2), where it: (a) has been obtained in whole or part from one of the order, genera or species as described hereafter, except wood packaging material defined in Annex IV, Part A, Section I, Point 2: — *Quercus* L., including wood which has not kept its natural round surface, originating in the USA, except wood which meets the description referred to in (b) of CN code 4416 00 00 and where there is documented evidence that the wood has been processed or manufactured using a heat treatment to achieve a minimum temperature of 176°C for 20 min, — [. . .] *Ulmus davidiana* Planch. [. . .] including wood which has not kept its natural round surface, originating in Canada, [. . .] and USA, — *Amelanchier* Medik., [. . .], *Crataegus* L., *Cydonia* Mill., *Malus* Mill., *Prunus* L., [. . .]*Pyrus* L. [. . .], iincluding wood which has not kept its natural round surface, except sawdust or shavings, originating in Canada or the USA,
7.	(a) Soil and growing medium as such, which consists in whole or in part of soil or solid organic substances such as parts of plants, humus including peat or bark, other than that composed entirely of peat. (b) ►M3 Soil and growing medium, attached to or associated with plants, consisting in whole or in part of material specified in (a) or consisting in part of any solid inorganic substance, intended to sustain the vitality of the plants, originating in: [. . .] — non-European countries, other than Algeria, Egypt, Israel, Libya, Morocco, Tunisia. ◄

3.4. Entry, establishment and spread in the EU

3.4.1. Host range

G. prunivora is an oligophagous species, feeding almost exclusively on Rosaceae hosts. These include: *Amelanchier* spp. (serviceberries), *Carya* spp. (pecan), *Crataegus* spp. (hawthorns), *Crataegus holmesiana*, *Cydonia oblonga* (quince), *Malus* spp. (ornamental apples, crabapple), *Malus domestica* (apple), *Photinia* spp. (christmasberry), *Prunus* spp. (stone fruit), *Prunus armeniaca* (apricot), *Prunus avium* (sweet cherry), *Prunus domestica* (plum), *Prunus persica* (peach), *Prunus salicina* (Japanese plum), *Pyrus* spp. (pears), *Rosa* spp. (roses). Larvae can also develop in galls of *Ulmus* spp. (elms, Ulmaceae) and *Quercus* spp. (oaks, Fagaceae) (Krawczyk, 1996; EPPO, 2018).

Although most plants for planting are banned from third countries, dormant plants from continental USA and Canada, where the pest occurs, are allowed (Table 4). One host is not regulated at all (*Carya* spp.).

3.4.2. Entry

Is the pest able to enter into the EU territory?

Yes, plants for planting (excluding seeds and pollen), cut branches, fruit, bark and soil are the main pathways. Nowadays, soil is a closed pathway. The remaining pathways are closed for some hosts while they remain open for others.

No records of interception of *G. prunivora* have been found in the Europhyt database (25/9/2018). However, larvae and pupae of *G. prunivora* could be present on the following commodities, which could, therefore constitute a pathway into the EU when imported from an infested area:

1) Plants for planting (excluding seeds), where all immature stages could be found even when plants are dormant,
2) Cut branches, where larvae and pupae could be present,
3) Fruit, where eggs, larvae and pupae could be found,
4) Bark, where overwintering mature larvae can seek refuge, and
5) Soil, where mature larvae and pupae could be present.

The soil pathway can be considered as closed, as soil from *G. prunivora* infested countries is banned from entering into the EU (Annex IIIA 14). The plants for planting and fruit pathways can be considered as closed for some hosts for which present regulations ban their imports (*Photinia* spp., *Quercus* spp. and *Rosa* spp., plants for planting intended for planting, other than seeds, and fruit of *Malus* spp. and *Prunus* spp., originating in non-European countries). The plant for planting pathway however, is open

for dormant plants of *Crataegus* spp., *Cydonia* spp., *Malus* spp., *Prunus* spp. and *Pyrus* spp. from Canada and the USA. The same pathway is open for a few additional hosts (e.g. *Amelanchier spp.*, *Carya* spp., *Ulmus* spp.). Furthermore, cut branches and bark provide two more potential pathways.

3.4.3. Establishment

Is the pest able to become established in the EU territory?

Yes, biotic and abiotic conditions are conducive for establishment of *G. prunivora* in large parts of the EU

3.4.3.1. EU distribution of main host plants

Known hosts of *G. prunivora* occur in large parts of the EU, in the wild (i.e. *Amelanchier* spp., *Crataegus* spp., *Rosa* spp.), in cultivated areas (i.e. *Malus*, *Prunus*) (Tables 5 and 6), recreational areas and backyard gardens (i.e. *Malus* spp., *Prunus* spp., *Rosa* spp.)

Table 5: Apples (EUROSTAT F1110 accessed 26 July 2018) Area (cultivation/harvested/production) (1,000 ha)

Country	2013	2014	2015	2016	2017
European Union (current composition)	536.77	524.50	538.50	523.70	:
Belgium	7.06	7.07	6.87	6.49	6.16
Bulgaria	4.81	3.95	4.77	4.11	3.97
Czech Republic	8.98	8.96	8.31	7.49	7.35
Denmark	1.38	1.38	1.39	1.35	1.28
Germany	31.74	31.74	31.74	31.74	33.98
Estonia	0.90	0.90	0.60	0.51	0.69
Ireland	0.62	0.64	0.64	0.70	0.70
Greece	12.95	12.26	11.85	9.94	9.67
Spain	30.79	30.73	30.72	30.87	30.55
France	50.68	50.17	49.65	49.65	50.31
Croatia	5.80	5.94	5.76	5.89	5.80
Italy	53.01	52.00	52.16	56.16	57.26
Cyprus	0.63	0.61	0.61	0.53	0.50
Latvia	2.80	2.70	2.40	2.40	3.30
Lithuania	11.67	11.27	10.68	9.70	9.82
Luxembourg	0.24	0.24	0.26	0.26	0.27
Hungary	33.36	33.26	32.80	32.80	32.09
Malta	0.00	0.00	0.00	0.00	0.00
Netherlands	7.91	7.85	7.60	7.30	7.00
Austria	6.97	6.76	6.62	6.67	6.67
Poland	162.40	163.10	180.40	164.76	:
Portugal	13.66	13.85	14.01	14.98	14.79
Romania	60.28	56.13	55.88	55.53	55.80
Slovenia	2.64	2.55	2.47	2.42	2.36
Slovakia	3.65	2.56	2.38	2.31	2.18
Finland	0.59	0.60	0.63	0.62	0.63
Sweden	1.26	1.29	1.33	1.54	1.58
United Kingdom	20.00	16.00	16.00	17.00	16.60

Table 6: Plums (EUROSTAT F1250 accessed 13 July 2018) Area (cultivation/harvested/production) (1,000 ha)

Country	2013	2014	2015	2016	2017
European Union (current composition)	162.01	157.36	154.79	152.73	:
Belgium	0.05	0.04	0.04	0.03	0.03
Bulgaria	5.89	4.88	6.83	6.71	6.82
Czech Republic	1.92	1.91	1.87	1.88	1.76
Denmark	0.08	0.06	0.06	0.06	0.06
Germany	4.35	4.35	4.34	4.35	4.83
Estonia	0.00	0.00	0.00	0.00	0.02
Ireland	0.00	0.00	0.00	0.00	0.00
Greece	1.57	1.81	2.05	2.60	2.08
Spain	16.61	17.00	16.06	15.28	15.20
France	16.95	16.05	14.97	14.81	15.06
Croatia	4.80	4.85	5.12	4.83	:
Italy	12.41	12.27	11.63	11.57	11.68
Cyprus	0.51	0.52	0.58	0.45	0.45
Latvia	0.20	0.10	0.10	0.10	0.10
Lithuania	0.82	0.81	0.77	0.73	0.73
Luxembourg	0.04	0.04	0.03	0.04	0.04
Hungary	7.66	7.36	7.22	7.22	7.98
Malta	0.00	0.00	0.00	0.00	0.00
Netherlands	0.00	0.00	0.26	0.25	0.26
Austria	0.24	0.19	0.18	0.18	0.19
Poland	16.50	15.30	13.90	13.39	:
Portugal	1.68	1.69	1.79	1.80	1.78
Romania	68.01	66.55	65.67	65.11	65.67
Slovenia	0.03	0.03	0.04	0.04	0.04
Slovakia	0.64	0.52	0.56	0.58	0.52
Finland	0.00	0.00	0.00	0.00	0.00
Sweden	0.05	0.04	0.04	0.04	0.04
United Kingdom	1.00	1.00	0.70	0.70	0.60

3.4.3.2. Climatic conditions affecting establishment

G. prunivora occurs North America (see Figure 1) in areas with climate types occurring in the EU as well (i.e. Köppen–Geiger Cfa, Cfb, Csb, Dfa, Dfb, Dsb climate types). Because in the areas where *G. prunivora* occurs, it can be found wherever hosts are found and these hosts, either cultivated or not occur across the EU, biotic and abiotic conditions are conducive for establishment of this moth in the EU.

3.4.4. Spread

Is the pest able to spread within the EU territory following establishment?

Yes. Although adult moths can fly over relatively short distances, movement of infested material (either plants, fruit, cut branches or soil), would be the main means of spread.

RNQPs: Is spread mainly via specific plants for planting, rather than via natural spread or via movement of plant products or other objects?

Yes, spread is mainly via plants for planting.

According to EPPO (1979), *C. prunivora* can spread within countries by flight but is more likely to move in international trade as larvae in fruits or as pupae in soil accompanying planting material of host species. Indeed, studies carried out in the USA states of Michigan (Krawczyk, 1996) and Georgia (Gentry et al., 1975) show that *G. prunivora* adult males are active at dusk only. Flight activity is limited to only late afternoon and early evening hours, starting 3 hours before sunset and ending no later than 30 minutes after sunset, with a trend to start flying later in the day during days with high temperatures, but earlier on cooler days (Krawczyk, 1996).

3.5. Impacts

Would the pests' introduction have an economic or environmental impact on the EU territory?

Yes, the introduction of *G. prunivora* would most probably have an economic impact in the EU.

RNQPs: Does the presence of the pest on plants for planting have an economic impact, as regards the intended use of those plants for planting?[4]

Yes, the presence of the pest on plants for planting has an economic impact on its intended use.

G. prunivora is a typical example of a secondary pest. Growers making regular insecticide applications against major fruit pests usually do not see fruit damage caused by this moth. However, in orchards where insecticide use is discontinued (i.e. because using mating disruption or other 'softer' techniques against key pome/stone fruit pests), damage can be conspicuous. Indeed, observations carried out in the USA in apple orchards where chemical control had been abandoned (Glass and Lienk, 1971) or greatly reduced (Weires et al., 1979) showed that 39–72% of the fruit was damaged.

3.6. Availability and limits of mitigation measures

Are there measures available to prevent the entry into, establishment within or spread of the pest within the EU such that the risk becomes mitigated?

Yes, extending the existing measures (see Section 3.3) to infested countries, as well as including not-sufficiently covered hosts (i.e. *Carya* spp.) (see Section 3.6.1) would mitigate the risks of entry, establishment, and spread within the EU.

RNQPs: Are there measures available to prevent pest presence on plants for planting such that the risk becomes mitigated?

Yes, sourcing plants and plant parts including fruit from PFA would mitigate the risk.

3.6.1. Identification of additional measures

Phytosanitary measures are currently applied to most hosts of *G. prunivora* (see Section 3.3). As a pest listed in Annex IIAI of 2000/29 EC, this tortricid is prohibited from entry into the EU on plants of *Crataegus* spp., *Malus* spp., *Photinia* spp., *Prunus* spp. and *Rosa* spp., intended for planting, other than seeds, and fruit of *Malus* spp. and *Prunus* spp., originating in non-European countries. However, leaf-free dormant plants of *Crataegus* spp., *Cydonia* spp., *Malus* spp., *Prunus* spp., *Pyrus* spp. and *Photinia* spp. from infested countries in northern America are still allowed. Therefore, banning the import of these commodities, even when leaf-free and dormant from infested countries, and including hosts not covered yet (i.e. *Carya*) would reduce the risks of entry, establishment and spread into the EU.

3.6.1.1. Additional control measures

Potential control measures for the mitigation of risk from *G. prunivora* are listed in Table 7.

[4] See Section 2.1 on what falls outside EFSA's remit.

Table 7: Selected control measures (a full list is available in EFSA PLH Panel, 2018) inhibiting pest entry, establishment or spread in relation to those hosts without specific regulation

Information sheet (with hyperlink for those completed)	Control measure summary	Risk component (entry/ establishment/spread/ impact)
Growing plants in isolation	As a pest that is a poor flyer and which does not disperse widely, growing plants in isolation is a measure to consider. Non-orchard hosts (i.e. nurseries) could be grown within physical protection, e.g. a dedicated structure such as glass, plastic or mesh greenhouse	Entry
Chemical treatments on crops including reproductive material (Work in progress, not yet available)	In the USA, *G. prunivora* is not a pest in pome and stone fruit orchards where growers regularly apply insecticides (Krawczyk, 1996)	Entry, establishment, spread, impact
Waste management	Consignments intercepted with *G. prunivora* spp. should be disposed of appropriately	Establishment
Biological control and behavioural manipulation (Work in progress, not yet available)	Although no reference for specific natural enemies have been found, generalist predators (i.e. antes, rove beetles, earwigs) could easily exploit many life stages of *G. prunivora* The sexual pheromone of *G. prunivora* (see Section 3.1.4) could be used for monitoring and control purposes (mass trapping, mating disruption)	Entry, establishment, spread, impact

3.6.1.2. Additional supporting measures

Supporting measures are organisational measures or procedures supporting the choice of appropriate risk reduction options that do not directly affect pest abundance. Potential supporting measures relevant to *G. prunivora* are listed in Table 8.

Table 8: Selected additional supporting measures (a full list is available in EFSA PLH Panel, 2018) inhibiting pest entry, establishment or spread in relation to those hosts without specific regulation

Information sheet (with hyperlink for those completed)	Supporting measure summary	Risk component (entry/ establishment/spread/ impact)
Inspection and trapping	Imported host plants for planting, fruit and cut branches could be inspected for compliance from freedom of *G. prunivora*	Entry, establishment, spread (within containment zones)
Laboratory testing	Examination, other than visual, to determine if pests are present using official diagnostic protocols	Entry
Sampling (Work in progress, not yet available)	According to ISPM 31, it is usually not feasible to inspect entire consignments, so phytosanitary inspection is performed mainly on samples obtained from a consignment	Entry, establishment, spread
Phytosanitary certificate and plant passport (Work in progress, not yet available)	An official paper document or its official electronic equivalent, consistent with the model certificates of the IPPC, attesting that a consignment meets phytosanitary import requirements (ISPM 5)	Entry, establishment, spread
Certified and approved premises	Mandatory/voluntary certification/approval of premises is a process including a set of procedures and of actions implemented by producers, conditioners and traders contributing to ensure the phytosanitary compliance of consignments. It can be a part of a larger system maintained by a National Plant Protection Organization in order to guarantee the fulfilment of plant health requirements of plants and plant products intended for trade	Entry, establishment, spread

Information sheet (with hyperlink for those completed)	Supporting measure summary	Risk component (entry/ establishment/spread/ impact)
Certification of reproductive material (voluntary/official) (Work in progress, not yet available)	Reproductive material could be examined and certified free from *G. prunivora*	Entry, establishment, spread
Delimitation of Buffer zones	Sourcing plants from a pest free place of production, site or area, surrounded by a buffer zone, would minimise the probability of spread into the pest free zone	Entry
Surveillance (Work in progress, not yet available)	ISPM 5 defines surveillance as an official process which collects and records data on pest occurrence or the absence by survey, monitoring or other procedures	Establishment, spread

3.6.1.3. Biological or technical factors limiting the effectiveness of measures to prevent the entry, establishment and spread of the pest

- Eggs and young instars, especially if boring into fruit, may be difficult to detect.

3.6.1.4. Biological or technical factors limiting the ability to prevent the presence of the pest on plants for planting

- Eggs and young instars, especially if boring into fruit, may be difficult to detect.

3.7. Uncertainty

By its very nature of being a rapid process, uncertainty is high in a categorisation. However, the uncertainties in this case are insufficient to affect the conclusions of the categorisation.

4. Conclusions

Considering the criteria within the remit of EFSA to assess its regulatory plant health status, *G. prunivora* meets with no uncertainties the criteria for consideration as a potential Union quarantine pest (it is absent from the EU, potential pathways exist, and its establishment would cause an economic impact). Given that *G. prunivora* is not known to occur in the EU, it fails to meet this criterion required for RNQP status. Table 9 provides a summary of the conclusions of each part of this pest categorisation.

Table 9: The Panel's conclusions on the pest categorisation criteria defined in Regulation (EU) 2016/2031 on protective measures against pests of plants (the number of the relevant sections of the pest categorisation is shown in brackets in the first column)

Criterion of pest categorisation	Panel's conclusions against criterion in Regulation (EU) 2016/2031 regarding Union quarantine pest	Panel's conclusions against criterion in Regulation (EU) 2016/2031 regarding Union regulated non-quarantine pest	Key uncertainties
Identity of the pest (Section 3.1)	The identity of *G. prunivora* is clearly established	The identity of *G. prunivora* is clearly established	None
Absence/presence of the pest in the EU territory (Section 3.2)	The pest is not present in the EU territory	The pest is not present in the EU territory. Therefore, it cannot be a regulated non-quarantine pest (RNQP)	None
Regulatory status (Section 3.3)	The pest is currently listed in Annex IIAI of 2000/29 EC	There are no grounds to consider its status of quarantine pest to be revoked	None

Criterion of pest categorisation	Panel's conclusions against criterion in Regulation (EU) 2016/2031 regarding Union quarantine pest	Panel's conclusions against criterion in Regulation (EU) 2016/2031 regarding Union regulated non-quarantine pest	Key uncertainties
Pest potential for entry, establishment and spread in the EU territory (Section 3.4)	The pest able to enter into, become established in, and spread within, the EU territory. The main pathways are: • Plants for planting, • Fruit, • Cut branches, • Bark, and • Soil imported from infested areas	Spread is mainly via specific plants for planting, rather than via natural spread or via movement of plant products or other objects	None
Potential for consequences in the EU territory (Section 3.5)	The pests' introduction would most probably have an economic impact on the EU territory	The presence of the pest on plants for planting has an economic impact, as regards the intended use of those plants for planting	None
Available measures (Section 3.6)	There are measures available to prevent the entry into, establishment within or spread of the pest within the EU (i.e. sourcing plants from PFA)	There are measures available to prevent pest presence on plants for planting (i.e. sourcing plants from PFA, PFPP)	None
Conclusion on pest categorisation (Section 4)	All criteria assessed by EFSA above for consideration as a potential quarantine pest are met with no uncertainties	The criterion of the pest being present in the EU territory, which is a pre-requisite for consideration as a potential regulated non-quarantine, is not met	None
Aspects of assessment to focus on/ scenarios to address in future if appropriate			

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Abbreviations

CN	Combined nomenclature (8-digit code building on HS codes to provide greater resolution)
DG SANTÉ	Directorate General for Health and Food Safety
EPPO	European and Mediterranean Plant Protection Organization
FAO	Food and Agriculture Organization
HS	Harmonized System (6 digit World Customs Organization system to categorize goods)
IPPC	International Plant Protection Convention
ISPM	International Standards for Phytosanitary Measures
MS	Member State
PCR	polymerase chain reaction
PFA	Pest Free Area
PFPP	Pest Free Place of Production
PLH	EFSA Panel on Plant Health

PZ	Protected Zone
TFEU	Treaty on the Functioning of the European Union
ToR	Terms of Reference

Glossary

(terms are as defined in ISPM 5 unless indicated by[+])

Containment (of a pest)	Application of phytosanitary measures in and around an infested area to prevent spread of a pest (FAO, 1995, 2017)
Control (of a pest)	Suppression, containment or eradication of a pest population (FAO, 1995, 2017)
Control measures[+]	Measures that have a direct effect on pest abundance.
Entry (of a pest)	Movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled (FAO, 2017)
Eradication (of a pest)	Application of phytosanitary measures to eliminate a pest from an area (FAO, 2017)
Establishment (of a pest)	Perpetuation, for the foreseeable future, of a pest within an area after entry (FAO, 2017)
Impact (of a pest)	The impact of the pest on the crop output and quality and on the environment in the occupied spatial units
Introduction (of a pest)	The entry of a pest resulting in its establishment (FAO, 2017)
Pathway	Any means that allows the entry or spread of a pest (FAO, 2017)
Phytosanitary measures	Any legislation, regulation or official procedure having the purpose to prevent the introduction or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests (FAO, 2017)
Protected zones (PZ)	A Protected zone is an area recognised at EU level to be free from a harmful organism, which is established in one or more other parts of the Union.
Quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (FAO, 2017)
Regulated non-quarantine pest (RNQP)	A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party (FAO, 2017)
Risk reduction option (RRO)	A measure acting on pest introduction and/or pest spread and/or the magnitude of the biological impact of the pest should the pest be present. A RRO may become a phytosanitary measure, action or procedure according to the decision of the risk manager
Spread (of a pest)	Expansion of the geographical distribution of a pest within an area (FAO 2017)
Supporting measures[+]	Organisational measures or procedures supporting the choice of appropriate Risk Reduction Options that do not directly affect pest abundance