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Pest categorisation of *Septoria malagutii*

EFSA Panel on Plant Health (PLH),
Claude Bragard, Katharina Dehnen-Schmutz, Francesco Di Serio, Paolo Gonthier, Marie-Agnès Jacques, Josep Anton Jaques Miret, Annemarie Fejer Justesen, Alan MacLeod, Christer Sven Magnusson, Panagiotis Milonas, Juan A Navas-Cortes, Stephen Parnell, Roel Potting, Philippe Lucien Reignault, Hans-Hermann Thulke, Wopke Van der Werf, Jonathan Yuen, Lucia Zappalà, Irene Vloutoglou, Bernard Bottex and Antonio Vicent Civera

Abstract

The Panel on Plant Health performed a pest categorisation of *Septoria malagutii*, the causal agent of annular leaf spot of potato, for the EU. The pest is a well-defined fungal species and reliable methods exist for its detection and identification. *S. malagutii* is present in Bolivia, Ecuador, Peru and Venezuela. The pest is not known to occur in the EU and is listed as *Septoria lycopersici* var. *malagutii* in Annex IAI of Directive 2000/29/EC, meaning its introduction into the EU is prohibited. The major cultivated host is *Solanum tuberosum* (potato), but other *Solanum* species including wild solanaceous plants are also affected. All hosts and pathways of entry of the pest into the EU are currently regulated. Host availability and climate matching suggest that *S. malagutii* could establish in parts of the EU and further spread mainly by human-assisted means. The pest affects leaves, stems and petioles of potato plants (but not the underground parts, including tubers) causing lesions, leaf necrosis and premature defoliation. In some infested areas, the disease has been reported to cause almost complete crop loss with favourable weather conditions and susceptible potato cultivars. The introduction of the pest into the EU would potentially cause impacts to potato production. The main uncertainties concern the host range, the maximum period the pest survives on host debris in soil, the maximum distance over which conidia of the pest could be dispersed by wind-driven rain and the magnitude of potential impacts to the EU. *S. malagutii* meets all the criteria assessed by EFSA for consideration as potential Union quarantine pest. The criteria for considering *S. malagutii* as a potential Union regulated non-quarantine pest are not met, since the pest is not known to occur in the EU.

Keywords: Annular leaf spot of potato, European Union, Quarantine, Septoria leaf spot of potato, *Septoria lycopersici* var. *malagutii*, *Solanum tuberosum*

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Correspondence: alpha@efsa.europa.eu

Panel members: Claude Bragard, Katharina Dehnen-Schmutz, Francesco Di Serio, Paolo Gonthier, Marie-Agnès Jacques, Josep Anton Jaques Miret, Annemarie Fejer Justesen, Alan MacLeod, Christer Sven Magnusson, Panagiotis Milonas, Juan A. Navas-Cortes, Stephen Parnell, Roel Potting, Philippe L. Reignault, Hans-Hermann Thulke, Wopke Van der Werf, Antonio Vicent, Jonathan Yuen, Lucia Zappalà.

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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 wit
hin 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 categorizations 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 pest 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

Septoria lycopersici var. *malagutii* 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 for the area of the EU excluding Ceuta, Melilla and the outermost regions of Member States referred to in Article 355(1) of the Treaty on the Functioning of the European Union (TFEU), other than Madeira and the Azores. The pest has been reclassified as a new species, *Septoria malagutii* Ciccarone & Boerema ex E.T. Cline, based on cultural and morphological characteristics as well as multilocus sequence analyses (Cline and Rossman, 2006; Verkley et al., 2013 – see Section 3.1.1).

2. Data and methodologies

2.1. Data

2.1.1. Literature search

A search of literature (1997–2018) in Web of Science and Scopus was conducted at the beginning of the categorisation. The search focused on *Septoria malagutii* and its geographic distribution, life cycle, host plants and the damage it causes. The following terms of search (TS) and combinations were used: TS = (("*Septoria malagutii*" OR "*Septoria lycopersici* var. *malagutii*" OR "annular leaf spot of potato" OR "Septoria leaf spot of potato") AND (Solanaceae OR *Solanum* OR Potato OR Tomato OR eggplant) AND (geograph* OR distribution OR "life cycle" OR lifecycle OR damag*)).

Further references and information were obtained from experts, 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 Plan 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 Member States (MS) and the phytosanitary measures taken to eradicate or avoid their spread.

2.2. Methodologies

The Panel performed the pest categorisation for *S. malagutii*, following guiding principles and steps presented in the EFSA guidance on quantitative pest risk assessment (EFSA PLH Panel, 2018) and 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 regulated non-quarantine pest 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 regulated non-quarantine pest. 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 regulated non-quarantine pest 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)

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
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?
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 *Septoria malagutii* is well-established.

The fungus causing the annular leaf spot disease of potato (*Solanum tuberosum*) in South America was initially described by Jimenez and French (1972) as 'strain A' of *Septoria lycopersici*, which is a common pathogen of tomato (*Solanum lycopersicum*). Based on its distinctive host range (i.e. potato) and preference for cooler temperatures as well as the brown pigmentation of the agar culture media, Piglionica et al. (1978) described the fungus affecting potato as a new variety of *Septoria lycopersici*, namely *S. lycopersici* var. *malagutii* to differentiate it from *S. lycopersici* var. *lycopersici* (current name: *S. lycopersici*). The pest has been reclassified as *Septoria malagutii* based on multilocus sequence analyses and cultural and morphological characteristics (Cline and Rossman, 2006; Verkley et al., 2013). *S. malagutii* is a species distinct from *S. lycopersici* (Cline and Rossman, 2006).

Based on the above, this pest categorisation focuses on *S. malagutii*, the potato pathogen listed in Council Directive 2000/29/EC as *Septoria lycopersici* Speg. var. *malagutii* Ciccarone and Boerema.

The Index Fungorum database (www.indexfungorum.org) provides the following taxonomical identification for *S. malagutii.*

Current scientific name: *Septoria malagutii* Ciccarone & Boerema ex E.T. Cline 2006

Family – Mycosphaerellaceae

Genus – *Septoria*

Species – *malagutii*

Other reported synonyms (EPPO, 2018): *Septoria lycopersici* strain A*; Septoria lycopersici* var. *malagutii*

Common name (EPPO, 2018): annular leaf spot of potato

Other common names (EPPO, 2018): Septoria leaf spot of potato.

3.1.2. Biology of the pest

The pathogen survives on wild solanaceous hosts (see Section 3.4.1) and possibly host plant debris in the soil (French, 2001). However, it is uncertain how long the pest can survive on these plant debris. Aerial parts of potato become infected by the conidia (pycnidiospores) splashed (rain-splash or overhead irrigation) from inoculum sources (plant debris on soil surface or wild hosts). The minimum, optimal and maximum temperatures for mycelial growth and sporulation *in vitro* are 3°C, 20–21°C and 27°C, respectively (Jimenez and French, 1972; Piglionica et al., 1978). According to French (2001), a moist period of up to 2 days and wet leaves are required for infection of potato plants at 16–22°C. The disease has been reported from areas in the Andean highlands above 2,000 m with cold and humid conditions (Piglionica et al., 1978; Coca Morante, 2016). No teleomorphic stage of the pathogen is known (Cline and Rossman, 2006).

3.1.3. Detection and identification of the pest

Are detection and identification methods available for the pest?

Yes. The pest can be detected and identified based on host association, symptomatology as well as cultural and morphological characteristics. Nevertheless, for reliable detection and identification of the pest, isolation and culturing, followed by multilocus sequence analyses, should also be considered.

S. malagutii may be difficult to distinguish from other pathogens causing similar symptoms on potato aerial parts, such as *Alternaria solani* (early blight) and *Stagonosporopsis andigena* (black blight of potato). However, the brown colour of the concentric lesions and the presence of black pycnidia in

the centre of the lesions can distinguish *S. malagutii* from the other potato pathogens (French, 2001; Coca Morante, 2016; EPPO, 2018). The pest can be distinguished from the closely related *S. lycopersici* based on multilocus sequence analyses (Cline and Rossman, 2006; Verkley et al., 2013).

Symptoms

S. malagutii affects stems, leaves and petioles of its hosts (French, 2001). The pest has not been reported to affect underground plant parts (e.g. roots, tubers, stolons). Initially, the spots are small (1–5 mm), circular to irregular, dark brown, and with irregular, concentric rings on the upper side of the leaves. At first these spots appear isolated from one another, but over time they coalesce, giving rise to lesions up to 12 mm in diameter (French, 2001; Coca Morante, 2016). In the centre of the lesions, scattered black pycnidia are visible. As the disease progresses, the lesions may coalesce, and the affected leaves become fragile and susceptible to wind damage (EPPO, 2018). Eventually, leaf tissues become necrotic and leaves may drop prematurely (French, 2001; EPPO, 2018). On stems and petioles, the lesions are more elongated, 2 mm wide and up to 15 mm long (French, 2001; EPPO, 2018).

Morphology

In naturally infected leaf lesions, the pycnidia are erumpent, and 90–230 μm in diameter (Jimenez and French, 1972; French, 2001). The conidia are hyaline and filiform, curved, sometimes straight or sigmoid, 27–136 μm long and 1.8–3.4 μm wide, with 1–9 septa (average 6) (Jimenez and French, 1972). On potato dextrose agar, the colonies have aerial, white mycelium and the underlying colour is purplish-grey to pale purplish-grey (Cline and Rossman, 2006). On corn meal agar, the underlying colour is described as lead grey and the agar below turns brown (French, 2001).

3.2. Pest distribution

3.2.1. Pest distribution outside the EU

S. malagutii is indigenous to areas in the Andean region of South America (EPPO, 2018) (Figure 1 and Table 2). The pest has been reported to be present in Bolivia, Ecuador, Peru and Venezuela (EPPO, 2018), and at altitudes between 3,500 and 4,300 m in Bolivia (Coca Morante, 2016), above 3,000 m in Ecuador (Carrera and Orellana, 1978; EPPO, 2018), between 3,800 and 4,200 m in Peru (Torres et al., 1970; EPPO, 2018), and between 1,600 and 2,500 m in Venezuela (Piglionica et al., 1978; EPPO, 2018). *S. malagutii* has not been reported from any other part of the world.

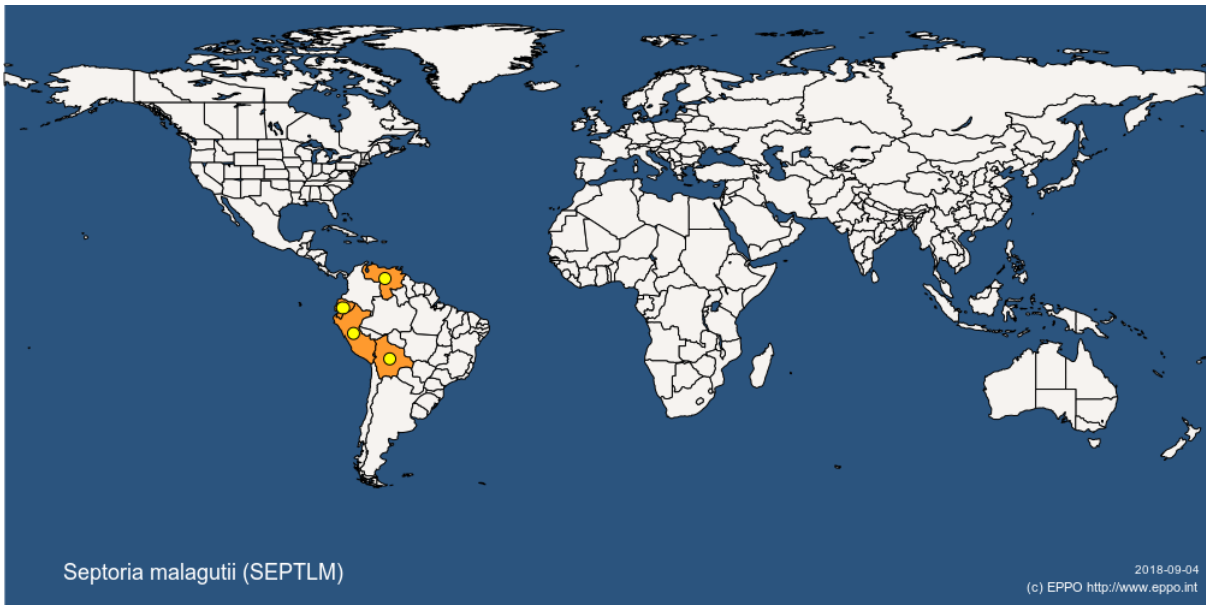

Figure 1: Global distribution map for *Septoria malagutii* (extracted from the EPPO Global Database accessed on 4/9/2018)

Table 2: Global distribution of *Septoria malagutii* based on information extracted from the EPPO Global Database (last updated: 12/9/2017; last accessed: 4/9/2018)

Continent	Country	Status
America	Bolivia	Present, restricted distribution
	Ecuador	Present, few occurrences
	Peru	Present, restricted distribution
	Venezuela	Present, restricted distribution

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. The pest in not known to be present in the EU territory.

3.3. Regulatory status

3.3.1. Council Directive 2000/29/EC

Septoria malagutii is listed as *S. lycopersici* var. *malagutii* in Council Directive 2000/29/EC. Details are presented in Tables 3 and 4.

Table 3: *Septoria malagutii* as *S. lycopersici* var. *malagutii* in Council Directive 2000/29/EC

Annex I, Part A	**Harmful organisms whose introduction into, and spread within, all member states shall be banned**
Section I	**Harmful organisms not known to occur in any part of the community and relevant for the entire community**
(c)	**Fungi**
14.	*Septoria lycopersici* Speg. var. *malagutii* Ciccarone and Boerema

3.3.2. Legislation addressing the hosts of *Septoria malagutii*

Table 4: Regulated hosts and commodities that may involve *Septoria malagutii* as *S. lycopersici* var. *malagutii* in Annexes III, IV 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
10.	Tubers of *Solanum tuberosum* L., seed potatoes	Third countries other than Switzerland
11.	Plants of stolon- or tuber-forming species of *Solanum* L. or their hybrids, intended for planting, other than those tubers of *Solanum tuberosum* L. as specified under Annex III A (10)	Third countries
13.	Plants of *Solanaceae* intended for planting, other than seeds and those items covered by Annex III A (10), (11) or (12)	Third countries, other than European and Mediterranean countries
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, Moldavia, Russia, Ukraine and third countries not belonging to continental Europe, other than the following: Egypt, Israel, Libya, Morocco, Tunisia

Annex IV, Part A	**Special requirements which shall be laid down by all member states for the introduction and movement of plants, plant products and other objects into and within all Member States**	
Section I	**Plants, plant products and other objects originating outside the Community**	
	Plants, plant products and other objects	Special requirements
34.	Soil and growing medium, attached to or associated with plants, consisting in whole or in part of soil or solid organic substances such as parts of plants, humus including peat or bark or consisting in part of any solid inorganic substance, intended to sustain the vitality of the plants, originating in: — Turkey, — Belarus, Georgia, Moldova, Russia, Ukraine, — non-European countries, other than Algeria, Egypt, Israel, Libya, Morocco, Tunisia	Official statement that: (a) the growing medium, at the time of planting, was: — either free from soil, and organic matter, or — found free from insects and harmful nematodes and subjected to appropriate examination or heat treatment or fumigation to ensure that it was free from other harmful organisms, or — subjected to appropriate heat treatment or fumigation to ensure freedom from harmful organisms, and (b) since planting: — either appropriate measures have been taken to ensure that the growing medium has been maintained free from harmful organisms, or — within two weeks prior to dispatch, the plants were shaken free from the medium leaving the minimum amount necessary to sustain vitality during transport, and, if replanted, the growing medium used for that purpose meets the requirements laid down in (a)
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 in territories, other than those territories referred to in Part A**	
Section I	**Plants, plant products and other objects which are potential carriers of harmful organisms of relevance for the entire Community**	
4.	Tubers of *Solanum tuberosum* L.	
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) 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: —Turkey, — Belarus, Moldova, Russia, Ukraine, — 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

The only cultivated natural host of *S. malagutii* is *Solanum tuberosum* (potato) (French, 2001; EPPO, 2018). In the infested areas, the pest has also been reported on other tuber-forming *Solanum*

spp. as well as on various solanaceous wild plants/weeds (Carrera and Orellana, 1978; EPPO, 2018). In greenhouse inoculation trials, the following species were found to be susceptible to the pest: *Solanum acaule, Solanum demissum, Solanum phureja, Solanum tuberosum* subsp. *andigena, Solanum tuberosum* subsp. *tuberosum, Solanum melongena, Datura metel, Datura stramonium* and *Nicotiana rustica* (Jimenez and French, 1972; French, 2001). According to inoculation studies carried out by Piglionica et al. (1978), *S. malagutii* was able to infect leaves of tomato cultivars 'Bonny Best' and 'Supermarmande', but produced smaller lesions than those of *S. lycopersici*. *S. malagutii* has not been reported to infect tomato in nature (Cline and Rossman, 2006), nor the above-mentioned experimental hosts. Uncertainty exists whether tomato (*Solanum lycopersicum*) and eggplant (*Solanum melongena*) are potential hosts of the pest because these two plant species are not usually grown in the areas where the pest has been reported (see Section 3.2.1). Based on the above, the Panel focused the pest categorisation on *Solanum tuberosum*, as the major cultivated natural host of the pest.

3.4.2. Entry

Is the pest able to enter into the EU territory? (Yes or No) If yes, identify and list the pathways!

Yes, however, all the pathways associated with host plants for planting and soil and growing media (associated or not with plants for planting) originating in infested third countries are regulated under the current EU legislation (Council Directive 2000/29/EC).

S. malagutii is not known to be seed-borne and potato, which is considered the only cultivated natural host, is propagated with seed tubers, which are not known to be affected by the pest (see Section 3.1.3). The pest is unlikely to enter the EU territory by natural means (rain or wind-driven rain) because of the distance between the infested third countries and the risk assessment area. The pest has been reported to survive in host plant debris in the soil (see Section 3.1.2). However, uncertainty exists with respect to the maximum period the pest could survive in host plant debris in the soil, because there is no information in the available literature.

Based on the above, the Panel identified the following pathways for the entry of the pest into the risk assessment area, in the absence of the current EU legislation:

- soil and growing media associated or not with host and non-host plants for planting and carrying infected host plant debris, and
- host plants for planting of the family Solanaceae, other than seed tubers, originating in infested third countries and used for ornamental purposes.

The following potential pathways of entry of *S. malagutii* into the EU territory are closed (prohibited) by the current EU legislation (Table 4):

1) Stolon- or tuber-forming plants for planting of *Solanum* spp., or their hybrids, other than *Solanum tuberosum* seed tubers, originating in third countries,
2) Plants for planting of the family Solanaceae, other than *Solanum tuberosum* seed tubers and stolon- or tuber-forming *Solanum* species, originating in third countries, other than European non-EU28 countries and Mediterranean countries,
3) Soil and growing media attached to or associated with plants originating in Turkey, Belarus, Georgia, Moldova, Russia, Ukraine and non-European countries, other than Algeria, Egypt, Israel, Libya, Morocco and Tunisia
4) Soil and growing media not attached to or associated with plants originating in Turkey, Belarus, Moldavia, Russia, Ukraine and third countries not belonging to continental Europe other than Egypt, Israel, Libya, Morocco and Tunisia.

Based on the above, all the pathways associated with host plants for planting, and soil and growing media, as commodities or substrates, originating in infested third countries are regulated (Council Directive 2000/29/EC).

The Panel identified the following potential pathway of entry of *S. malagutii* into the EU, which is open and not regulated by the EU legislation:

- infected host plant debris in soil adhering to agricultural machinery and implements, footwear, and vehicles originating in infested third countries.

The Panel considers this pathway as uncertain because of the distance between the infested countries and the risk assessment area, and due to the absence of import data in the Eurostat database (accessed on 2/5/2018). Therefore, this pathway is not considered as a major pathway of entry and is not further addressed in the following sections.

There is no record of interception of *S. malagutii* in the Europhyt database (online; search performed on 4/9/2018).

3.4.3. Establishment

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

Yes. The biotic (host availability) and abiotic (climate suitability) factors occurring in part of the risk assessment area are favourable for the establishment of *S. malagutii*.

3.4.3.1. EU distribution of main host plants

Potatoes are widely grown in the EU territory (Table 5; Source: Eurostat, data extracted on 6/11/2018).

Table 5: Area (in 1,000 ha) cultivated with *Solanum tuberosum* in the 28 EU Member States between 2013 and 2017 (Source: Eurostat, extracted on 6/11/2018)

Countries	2013	2014	2015	2016	2017	Mean of EU area grown with *Solanum tuberosum* (in 1,000 ha) during the period 2013–2017
European Union (EU28)	1,741	1,663	1,656	1,689	1,746	1,699
Poland	337	267	293	301	321	304
Germany	243	245	237	243	251	243
Romania	208	203	196	186	171	193
France	161	168	167	179	194	174
Netherlands	156	156	156	156	161	157
United Kingdom	139	141	129	139	145	139
Belgium	75	80	79	89	93	83
Spain	72	76	72	72	71	73
Italy	50	52	50	48	49	50
Denmark	40	20	42	46	50	39
Portugal	27	27	25	23	24	25
Sweden	24	24	23	24	25	24
Lithuania	28	27	23	22	19	24
Czech Republic	23	24	23	23	23	23
Finland	22	22	22	22	21	22
Greece	25	24	21	19	19	22
Austria	21	21	20	21	23	21
Hungary	21	21	19	16	15	18
Latvia	12	11	10	11	22	13
Bulgaria	13	10	11	8	13	11
Croatia	10	10	10	10	10	10

Only Member States growing more than 10,000 ha are reported.

Potatoes are also grown, but to a lesser extent, in Ireland, Slovakia, Cyprus, Estonia, Slovenia, Malta and Luxembourg.

3.4.3.2. Climatic conditions affecting establishment

French (2001) indicated that the disease is prevalent in cold, moist areas of the Andean highlands of South America at elevations as high as 4,200 m (see Section 3.2.1). Jimenez and French (1972) and Piglionica et al. (1978) reported the presence of the disease in the Andes of Peru and Venezuela with humid and cold microclimates with temperatures from 5°C to 20°C. In Ecuador, Carrera and Orellana (1978) observed the disease in areas with temperatures around 8°C and high relative humidity of

90%. Likewise, Coca Morante et al. (2014) found the disease in the Andean highlands in Bolivia, with constant cloudiness, high ambient humidity and cold temperatures. Coca Morante (2016) identified the disease in Bolivia where the conditions were damp and cold (7–15°C C) during the growing season from November to May.

S. malagutii has been reported in Bolivia, Peru, Ecuador and Venezuela at altitudes ranging from 1,600 to 4,300 m (EPPO, 2018). These areas are characterised by different Köppen–Geiger climate types (Peel et al., 2007) (Figure 2). The prevalent climate types are temperate (mainly Cwb: dry winter, warm summer, and Cfb: without dry season, warm summer) and arid (BSk: steppe, cold, BWk: desert, cold). The polar tundra climate (ET) is also present in those areas.

Temperate climate types, such as Cfb, are present in most areas of Western Europe, the UK and Ireland, and in the north of the Iberian Peninsula (Fig. 3). Also, arid climate types, such as BSk, are present in areas of southern EU Member States, like Spain. Therefore, the climatic conditions occurring in some parts of the EU are suitable for the establishment of *S. malagutii*.

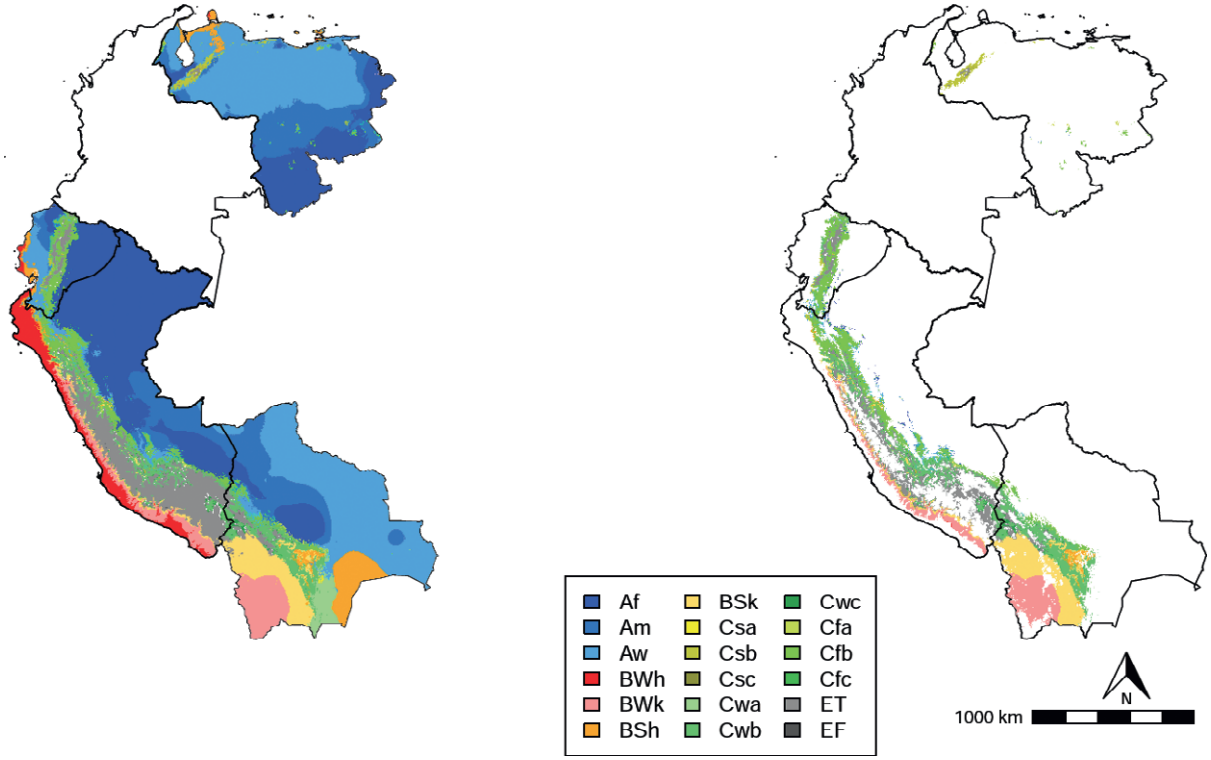

Figure 2: Köppen–Geiger climate type map of Bolivia, Peru, Ecuador and Venezuela (left) and for altitudes ranging from 1,600 to 4,300 m (right)[4]

[4] Based on the criteria of Peel et al. (2007) and data at 30-s spatial resolution from the WorldClim 1.4 database (Hijmans et al., 2005).

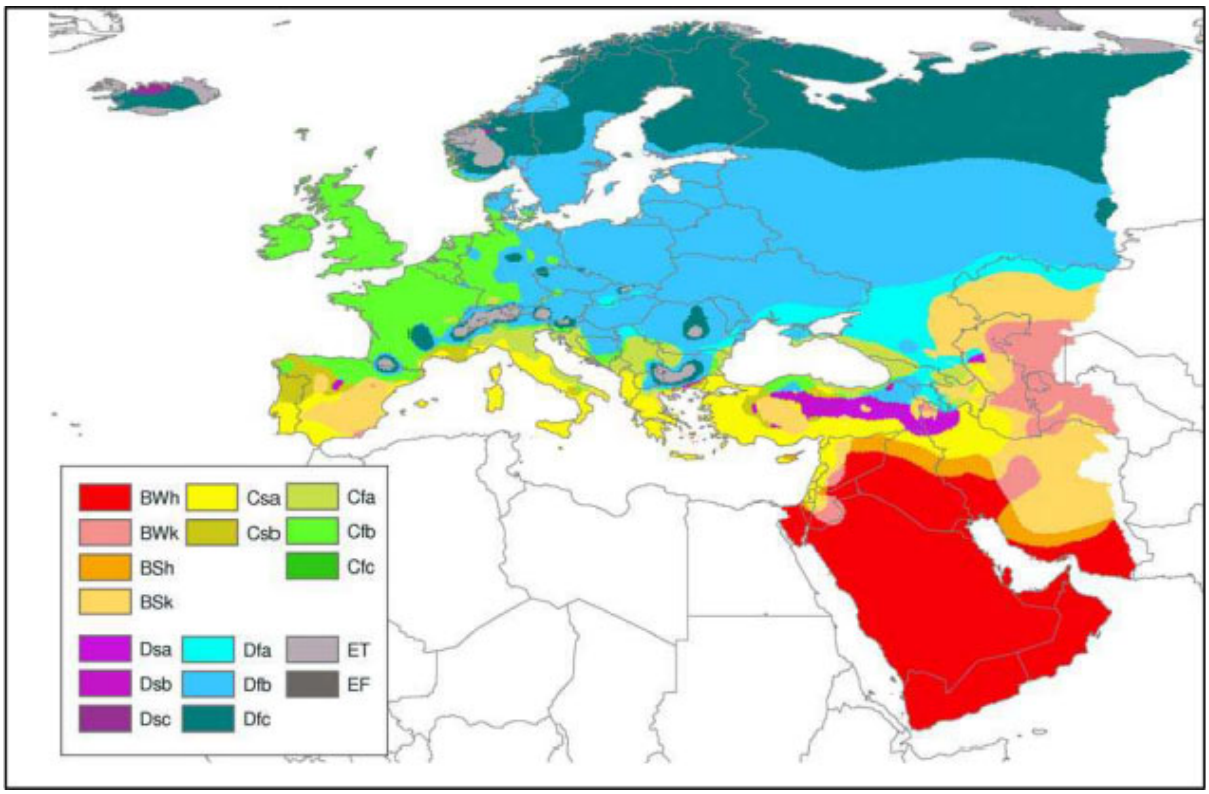

Figure 3: Köppen–Geiger climate type map of Europe, from Peel et al. (2007)

3.4.4. Spread

3.4.4.1. Vectors and their distribution in the EU

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

How? By natural and human-assisted means

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

Yes. Although the pest has not been reported to affect potato plants for planting (i.e. seed tubers), it could spread mainly via the movement of host plants for planting of the family Solanaceae, other than seed tubers, grown for ornamental purposes.

Following its establishment in the EU territory, the pest could potentially spread by both natural and human-assisted means.

Spread by natural means. The pest could potentially spread over short distances by water (rain, overhead irrigation) splashing and wind-driven rain (French, 2001; EPPO, 2018). Nevertheless, uncertainty exists on the maximum distance over which conidia of the pathogen could be dispersed by wind-driven rain.

Spread by human assistance. The pest could potentially spread over long distances via the movement of (i) infected host plants for planting of the family Solanaceae (other than seed tubers) grown for ornamental purposes, and (ii) soil and growing media associated or not with host and non-host plants for planting and carrying infected host plant debris. However, uncertainty exists about the host status of (i) plants for planting of *Solanum lycopersicum* and *Solanum melongena* (except seeds); and (ii) plants for planting of the family Solanaceae grown for ornamental purposes in the EU. Likewise, uncertainty exists on the maximum period the pest survives on host plant debris in soil.

3.5. Impacts

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

YES. The introduction of the pest in the EU territory would potentially cause direct and indirect impacts to potato production and *Solanum* host species grown for ornamental purposes.

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?

YES. The pest does not affect the potato plants for planting (i.e. seed tubers). However, the presence of the pest on host plants for planting of the family Solanaceae (other than seed tubers) intended for ornamental use would have an economic impact.

Potatoes rank fourth on the list of world food crops, after maize, rice, and wheat (FAOSTAT, online). The total world potato production was estimated at 381.7 million tonnes in 2014. The EU ranks third in fresh potato production after China and India (FAOSTAT, online). In 2015, the EU produced 53.2 million tonnes of potatoes, with Germany, France and the Netherlands as the largest producers (Table 6). The value of EU potato production, including seed potatoes, at basic prices was EUR 10 billion, representing 2.5% of the total EU agricultural output and 4.7% of the crop output at EU level (de Cicco and Jeanty, 2017). Most potatoes are traded in the internal EU market. The EU is a net potato exporter, but potatoes are imported into its territory in winter and spring from Southern and Eastern Mediterranean countries (de Cicco and Jeanty, 2017).

Table 6: Potato production, including potato seed tubers, in the 28 EU Member States in 2015 (Source: Eurostat; extracted on 2/5/2018)

Country	Harvested production (in 1,000 tonnes)	Share of 28 EU MSs harvested production (%)
EU-28	53,160	100.00
Germany	10,370	19.51
France	7,114	13.38
Netherlands	6,652	12.51
Poland	6,152	11.57
United Kingdom	5,598	10.53
Belgium	3,665	6.89

Only Member States contributing to more than 5% of the EU potato production are reported.

In Ecuador, Carrera and Orellana (1978) indicated that potato crops of the cultivars 'Chola' and 'Pufia' showed up to 60% of leaf area affected by *S. malagutii*. In Peru, Jimenez and French (1972) observed almost complete crop loss in areas with favourable weather conditions for disease development. In Bolivia, Coca Morante (2016) indicated that the disease was sometimes destructive. Indeed, Coca Morante et al. (2014) reported disease incidence of 100% and defoliation 50 days after plant emergence in untreated plots of the cultivars 'Waych'a Paceña' and 'Imilia Negra'. Disease incidence was reduced to 55–70% with fungicide applied every two weeks. These same authors reported yield reductions caused by *S. malagutii* of 42% and 51% in the cultivars 'Waych'a Paceña' and 'Imilia Negra', respectively.

The introduction of the pest in the EU territory would potentially cause direct and indirect impacts to potato production. However, uncertainty exists whether the agricultural practices (e.g. potato cultivars) and chemical control methods currently applied in the EU could reduce the impact of pest introduction.

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. Please, see Section 3.3.

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

Yes. The presence of the pest on host plants for planting of the family Solanaceae (other than seed tubers) could be prevented by sourcing them in pest-free areas or places of production

3.6.1. Identification of additional measures

Phytosanitary measures (sourcing from pest-free areas or pest-free places of production, inspection and laboratory testing both at the place of origin and at the EU entry point) are currently applied to the major host and pathways of entry, which are all regulated (Council Directive 2000/29/EC) (see Section 3.3). No additional major hosts or unregulated pathways of entry have been identified.

There are no measures that could prevent the establishment of the pest in the EU territory.

3.7. Uncertainty

1) Host range. It is not known whether wild or ornamental species of the genus *Solanum* in the EU territory are hosts of the pest. Uncertainty exists whether tomato (*Solanum lycopersicum*) and eggplant (*Solanum melongena*) are potential hosts of the pest.
2) Entry. Uncertainty exists on whether the pest could enter the EU territory on infected host plant debris in soil adhering to agricultural machinery and implements, footwear and vehicles, because of the distance between the infested countries and the risk assessment area, and due to the absence of import data in the Eurostat database.
3) Entry and spread. Uncertainty exists on the maximum period the pest survives on host plant debris in soil.
4) Spread. Uncertainty exists on the maximum distance over which conidia of the pathogen could be dispersed by wind-driven rain.
5) Impact. Uncertainty exists whether the agricultural practices (e.g. potato cultivars) and chemical control methods currently applied in the EU could reduce the impact of pest introduction.

4. Conclusions

S. malagutii meets all the criteria assessed by EFSA for consideration as potential Union quarantine pest (Table 7). The criteria for considering *S. malagutii* as a potential Union regulated non-quarantine pest are not met since the pest is not known to be present in the EU.

Table 7: 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 the pest (*Septoria malagutii*) is clearly defined and there are reliable methods for its detection and identification	The identity of the pest (*Septoria malagutii*) is clearly defined and there are reliable methods for its detection and identification	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
Absence/ presence of the pest in the EU territory (Section 3.2)	The pest is not known to be present in the EU territory	The pest is not known to be present in the EU territory	None
Regulatory status (Section 3.3)	The pest is currently officially regulated in the EU as a quarantine pest (Council Directive 2000/29/EC)	The pest is currently officially regulated in the EU as a quarantine pest (Council Directive 2000/29/EC). There are no grounds to consider its status could be revoked	None
Pest potential for entry, establishment and spread in the EU territory (Section 3.4)	Entry: All major pathways of entry of the pest into the risk assessment area are regulated (Council Directive 2000/29/EC) Establishment: The host availability and climate factors occurring in part of the risk assessment area are favourable for the establishment of the pest Spread: Following introduction, the pest could potentially spread by natural and human-assisted means	The pest does not affect potato seed tubers. Therefore, potato plants for planting is not a means of spread Host plants for planting of the family Solanaceae, other than seed tubers, grown for ornamental purposes are potential means of spread of the pest	It is not known whether wild or ornamental species of the genus *Solanum* in the EU territory are hosts of the pest. Uncertainty exists whether *S. lycopersicum* and *S. melongena* are potential hosts of the pest (Uncertainty 1) Uncertainty exists on whether the pest could enter the EU territory on host plant debris in soil adhering to agricultural machinery and implements, footwear and vehicles (Uncertainty 2) Uncertainty exists on the maximum period the pest survives on host debris in soil (Uncertainty 3) No information on the maximum distance over which conidia of the pathogen could be dispersed by wind-driven rain (Uncertainty 4)
Potential for consequences in the EU territory (Section 3.5)	The introduction of the pest in the EU territory would potentially cause direct and indirect impacts to potato production	The presence of the pest on host plants for planting of the family Solanaceae, other than seed tubers, intended for ornamental use would have an economic impact	Uncertainty exists whether the agricultural practices and chemical control methods currently applied in the EU could reduce the impact of pest introduction (Uncertainty 5)
Available measures (Section 3.6)	There are measures available to prevent the introduction into and spread within the EU of the pest such that the risk becomes mitigated. These measures are described in Council Directive 2000/29/EC	The presence of the pest on host plants for planting of the family Solanaceae (other than seed tubers) could be prevented by sourcing them in pest-free areas or places of production	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
Conclusion on pest categorisation (Section 4)	*Septoria malagutii* meets all the criteria assessed by EFSA for consideration as potential Union quarantine pest	The criteria for considering *Septoria malagutii* as a potential Union regulated non-quarantine pest are not met since the pest is not known to be present in the EU	None
Aspects of assessment to focus on/ scenarios to address in future if appropriate	None		

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Abbreviations

DG SANTÉ	Directorate General for Health and Food Safety
EPPO	European and Mediterranean Plant Protection Organization
FAO	Food and Agriculture Organization
IPPC	International Plant Protection Convention
ISPM	International Standards for Phytosanitary Measures
MS	Member State
PLH	EFSA Panel on Plant Health
PZ	Protected Zone
TFEU	Treaty on the Functioning of the European Union
ToR	Terms of Reference

Glossary

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)
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)
Measures	Control (of a pest) is defined in ISPM 5 (FAO 2017) as 'Suppression, containment or eradication of a pest population' (FAO, 1995). Control measures are measures that have a direct effect on pest abundance. Supporting measures are organisational measures or procedures supporting the choice of appropriate Risk Reduction Options that do not directly affect pest abundance
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	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)