NAME OF THE ORGANISM: Phytophthora fragariae (PHYTFR)

GENERAL INFORMATION ON THE PEST

Name as submitted in the project specification (if different to the preferred name):

Pest category:

Chromista **1- Identity of the pest/Level of taxonomic listing:**
Is the organism clearly a single taxonomic entity and can it be adequately distinguished from other entities of the same rank?

Yes
Is the pest defined at the species level or lower?:

Yes
Can listing of the pest at a taxonomic level higher than species be supported by scientific reasons or can species be identified within the taxonomic rank which are the (main) pests of concern?

* Not relevant: Fruits (including hops) sector, Ornamental sector

Is it justified that the pest is listed at a taxonomic rank below species level?

Not relevant
Conclusion:

* Candidate: Fruits (including hops) sector, Ornamental sector

**2 – Status in the EU:**

Is this pest already a quarantine pest for the whole EU?

No
Presence in the EU:

Yes
List of countries (EPPO Global Database):

Austria (2014); Belgium (2007); Cyprus (1993); Denmark (2013); Finland (2013); France (1993); Germany (1998); Ireland (1993); Italy (1992); Lithuania (1998); Luxembourg (1992); Netherlands (2015); Slovakia (1994); Slovenia (1995); Sweden (1993); United Kingdom (1993); United Kingdom/England (1994); United Kingdom/Northern Ireland (1994); United Kingdom/Scotland (1994)
Conclusion:

candidate
Justification (if necessary):

Data of the presence of this pest on the EU territory are available in EPPO Global Database (<https://gd.eppo.int/>).

HOST PLANT N°1: Fragaria (1FRAG) for the Fruits (including hops) sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

Yes
Conclusion:

Qualified **CONCLUSION ON THE STATUS:**

Recommended for listing as an RNQP - based on EPPO PM 4 Standard. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Zero tolerance based on visual examination for the marketed material. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Non-certified material (‘CAC’):
(A) Derived from mother plants which have been inspected and found free from symptoms of Phytophthora fragariae.
AND
(B) (a) Plants produced in areas known to be free from Phytophthora fragariae;
or
(b) Site of production found free from Phytophthora fragariae over the last complete growing season at appropriate times by visual inspection of the foliage and, where indicative symptoms are seen, a representative sample of roots, with any plants found to be infected, and plants in a surrounding zone of at least 5m radius, marked, excluded from lifting and marketing, and then destroyed [not removed immediately to avoid spreading the pathogen before the uninfected plants are lifted].

Pre-basic, Basic, Certified material, additional measures could include:
o Recording of cropping and soil borne disease history of fields;
o Rest period from host plants of at least ten years between findings of the pest and next planting;
o Testing of pre-basic mother plants;
o Pre-basic, basic: no symptoms seen at two inspections at appropriate times during the last growing season. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the risks to plant health posed by Phytophthora fragariae Hickman var. fragariae in the EU territory, with the identification and evaluation of risk reduction options. EFSA Journal 2014;12(1):3539, 63 pp. doi:10.2903/j.efsa.2014.3539 <http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/3539.pdf>;
* EU COM (2016) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Phytophthora fragariae Hickman;

HOST PLANT N°2: Fragaria (1FRAG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

Yes
Conclusion:

Evaluation continues

Justification (if necessary):

Fragaria x ananassa is covered by EPPO PM 4/11 Standard. There are various varieties of ornamental strawberry grown, of different species such as F. chiloensis or F. vesca, with different flower colours or foliage. Fragaria chiloensis, F. vesca and F. x ananassa (cultivated strawberry) are all minor hosts according to the EPPO Global Database. Ornamental strawberry may be propagated vegetatively (e.g. cv. Lipstick) or by seed (alpine strawberry F. vesca). **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

Yes
Conclusion:

Candidate

Justification:

No references could be found to the susceptibility or resistance of ornamental strawberry to infestation by Phytophthora fragariae, as compared to the variation in normal strawberry cultivars, however F. vesca is used frequently as a bait plant for Pf due to its susceptibility (EFSA 2014). Therefore it concluded these species would react to the pest in a similar way to commercial cultivars and in some cases be more susceptible. The pathogen can survive as oospores in plant debris or the soil for at least 10 years. Soil bait tests, rotation of crops, prevention of soil water movement and use of fumigants can provide some management avoidance.
It is concluded plants for planting are a pathway, and can be considered a significant pathway compared to others if being grown in uninfested growing media or soil (EFSA, 2014). **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

No specific documented references could be found for impacts on ornamental strawberry, as distinct from F. x ananassa - cultivated strawberry, so it is concluded they may react to infection by the pest in a similar way. There are many references to the economic effects of red-core in commercial strawberry, and F. vesca bait plants used for diagnosis will die within a few weeks under suitable wet soil conditions. However, for the ornamental sector, experts considered that a substantially free from requirement would be sufficient.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Is the economic impact due to the presence of the pest on the named host plant for planting, acceptable to the propagation and end user sectors concerned?

No
Conclusion:

Candidate
Justification:

Remark: Experts considered that propagation for fruit and ornamental strawberry is performed by different producers in different places of production. **6 - Are there feasible and effective measures available to prevent the presence of the pest on the plants for planting at an incidence above a certain threshold (including zero) to avoid an unacceptable economic impact as regards the relevant host plants?**

Yes

Conclusion:

candidate
Justification:

 **7- Is the quality of the data sufficient to recommend the pest to be listed as a RNQP?**

Yes

Conclusion:

Candidate
Justification:

 **CONCLUSION ON THE STATUS:**

Not recommended for listing as an RNQP: This pest/host/intended use combination meets all the criteria for RNQP status. However, the requirement for absence of visual symptoms on the traded material (current general 'Substantially free from' requirement in the EU) was considered to be sufficient for ornamental fragaria. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the risks to plant health posed by Phytophthora fragariae Hickman var. fragariae in the EU territory, with the identification and evaluation of risk reduction options. EFSA Journal 2014;12(1):3539, 63 pp. doi:10.2903/j.efsa.2014.3539 <http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/3539.pdf>;
* EPPO (2008) Certification scheme for strawberry. Bulletin OEPP/EPPO Bulletin 38, 430–437;
* EU COM (2016) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Phytophthora fragariae Hickman;