NAME OF THE ORGANISM: Erwinia amylovora (ERWIAM)

GENERAL INFORMATION ON THE PEST

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

Pest category:

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

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

Not relevant
Conclusion:

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

Justification (if necessary):

Fire blight has been described in nearly 200 plant species, mostly within the family Rosaceae, and within the subfamily Maloideae. The most frequent host genera are Chaenomeles, Cotoneaster, Crataegus, Cydonia, Eriobotrya, Malus, Mespilus, Pyrus, Photinia, Pyracantha, Sorbus and Stranvaesia (EFSA PLH, 2014). This is justified to continue the evaluation of E. amylovora on host plants listed at the genus level. **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 (2015); Bulgaria (2012); Croatia (2007); Cyprus (1990); Czech Republic (2013); Denmark (1987); Estonia (2013); Finland (2014); France (2011); Germany (2013); Greece (2000); Greece/Kriti (1990); Hungary (2012); Ireland (2010); Italy (2013); Italy/Sicilia (1992); Latvia (2014); Lithuania (2010); Luxembourg (1984); Netherlands (2015); Poland (2001); Romania (2011); Slovakia (2005); Slovenia (2003); Spain (2016); Sweden (2008); United Kingdom (2014); United Kingdom/England (2014); United Kingdom/Northern Ireland (2014); United Kingdom/Scotland (2014)
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: Amelanchier (1AMEG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Many publications list the genera as an ornamental host of E. amylovora. In the first case in Bulgaria, many Amelanchier sp. shrubs had severely blighted flowers, fruitlets, shoots and branches, and dried, amber ooze droplets on the shoots (Bobev et al., 2007). Remark: Losses are more important on pear, apple and quince (EFSA PLH, 2014). Artificial inoculations on immature pear fruits and young shoots of Maloideae and Ruboideae showed a restricted pathogenicity for the strains from Rubus and Amelanchier, with the latter inciting blight symptoms only on Amelanchier (Giorgi & Scortichini, 2005).
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Existing control is mainly based on prevention and exclusion. The use of chemical or biological products can prevent infection, and sanitation methods applied to infected plants can control the disease to a certain extent. No curative chemical control agents are available to eradicate E. amylovora (EFSA, 2014). **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:**

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

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* Bobev SG, van Vaerenbergh J & Maes M (2007) First report of fire blight on Pyrus elaeagrifolia and Amelanchier sp. in Bulgaria. Plant Disease 91, pp.110;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;
* Giorgi S & Scortichini M (2005) Molecular characterization of Erwinia amylovora strains from different host plants through RFLP analysis and sequencing of hrpN and dspA/E genes. Plant Pathology 54, 789-798;

HOST PLANT N°2: Chaenomeles (1CNMG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Many publications list the genera as an ornamental host of E. amylovora. A recent paper reports an outbreak in a nursery on Chinese quince (Chaenomeles sinensis) (Myung et al, 2016). Remark: Losses are more important on pear, apple and quince (EFSA PLH, 2014). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Although no curative measures are available (thermotherapy / chemical), current measures in Council Directive 2000/29 (removal of symptomatic plants) are appropriate (although they fail to address asymptomatic infections). **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:**

Recommended for listing as an RNQP based on data and possible indirect economic impacts. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;
* Myung I S, Yun M J, Lee Y H, Kim G D & Lee Y K (2016) First report of fire blight caused by Erwinia amylovora on Chinese quince in South Korea. Plant Disease 100; 2521;

HOST PLANT N°3: Cotoneaster (1CTTG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Many publications list the genera as an ornamental host of E. amylovora and it can have quite severe effects on this host depending on variety and climatic conditions. Within the ornamental and wild plants, members of the genus Cotoneaster are generally very susceptible and it can maintain epidemics between periods of disease attack on fruit production host plants (EFSA PLH, 2014). Remark: Losses are more important on pear, apple and quince (EFSA PLH, 2014). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Existing control is mainly based on prevention and exclusion. The use of chemical or biological products can prevent infection, and sanitation methods applied to infected plants can control the disease to a certain extent. No curative chemical control agents are available to eradicate E. amylovora (EFSA, 2014). **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:**

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

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°4: Crataegus (1CSCG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Many publications list the genera as an ornamental host of E. amylovora and it can have quite severe effects on this host depending on variety and climatic conditions. Within the ornamental and wild plants, members of the genus Crataegus are generally very susceptible and it can maintain epidemics between periods of disease attack on fruit production host plants (EFSA PLH, 2014). Remark: Losses are more important on pear, apple and quince (EFSA PLH, 2014). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
Within the ornamental and wild plants, members of the genus Crataegus are generally very susceptible, and Crataegus cultivars, can maintain epidemics between periods of disease attack on fruit production host plants.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Existing control is mainly based on prevention and exclusion. The use of chemical or biological products can prevent infection, and sanitation methods applied to infected plants can control the disease to a certain extent. No curative chemical control agents are available to eradicate E. amylovora (EFSA, 2014). **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:**

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

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°5: Cydonia (1CYDG) 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. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
- Non-certified material (‘CAC’):
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.

- Pre-basic, Basic, Certified material: Additional measures could include
• Isolation from host plants of Erwinia amylovora, or
• [where this is legally enforceable] Inspection of host plants in the immediate vicinity and removal and destruction of any symptomatic plants. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°6: Cydonia (1CYDG) 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:

Qualified

Justification (if necessary):

PM 4/27 is also suitable for the certification of ornamental plants of Malus, Pyrus and Cydonia. **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. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.pdf>;
* EPPO (1999) EPPO Standards PM 4/27 (1) Certification schemes. Pathogen-tested material of Malus, Pyrus and Cydonia. Bulletin OEPP/EPPO Bulletin 29, 239-252;
* 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 Erwinia amylovora (Burr.) Winsl. et al.;
* Zeller W (1979) Resistance and resistance breeding in ornamentals. Report of the EPPO colloquium on fireblight, Wageningen, 29-30 November 1977. Bulletin OEPP/EPPO Bulletin 9, 35-44;

HOST PLANT N°7: Eriobotrya (1EIOG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

E. amylovora is an important pest of loquat (Eriobotrya japonica) in Mediterranean countries. The pest caused outbreaks in loquat orchards (in Spain: Lopez et.al, 2002 and 1999; Turkey: Tokgonul, 1994). A serious outbreak of E. amylovora on loquat was reported from Israel (Zilberstaine et al., 1996). All tested loquat cultivars in Turkey and Greece were found to be highly susceptible for leave infections (Aktepe et al., 2014; Tsiantos & Psallidas, 2004). Publications about trials to combat E. amylovora in loquat (Turkey: Bastas & Maden, 2007; Israel: Miriam et al, 1999) or about Streptomycin resistance (Israel: Manulis et al., 1999 and 1998) gives some indication about the importance of E. amylovora on this host. Some authors indicated that the damage to loquat (Eriobotrya) and apple is less severe than to quince and pear (Beniglio & Ozakman, 1999; Momol & Yegen, 1993). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Although no curative measures are available (thermotherapy / chemical), current measures in Council Directive 2000/29 (removal of symptomatic plants) are appropriate (although they fail to address asymptomatic infections). **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:**

Recommended for listing as an RNQP - based on data and its indirect unacceptable economic impact on Malus, Pyrus and Cydonia plants for planting. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
- Non-certified material (‘CAC’):
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.

- Pre-basic, Basic, Certified material: Additional measures could include
• Isolation from host plants of Erwinia amylovora, or
• [where this is legally enforceable] Inspection of host plants in the immediate vicinity and removal and destruction of any symptomatic plants. **REFERENCES:**

* Aktepe B P, Aysan Y & Tepe S (2014) Determination of fire blight susceptibility of loquat cultivars. Acta Horticulturae 1056, 231-233;
* Bastas K K & Maden S (2007) Evaluation of host resistance inducers and conventional products for fire blight management in loquat and quince. Phytoprotection 88, 93-101;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;
* Lopez M M, Gorris M T, Llop P, Cambra M, Rosello M, Berra D, Borruel M, Plaza B, Garcia P & Palomo J L (2001) Chronicle of a disease foretold (that advances slowly): the 2001 Spanish situation. Acta Horticulturae 590, 35-38;
* Lopez M M, Llop P, Donat V, Penalver J, Rico A, Ortiz A, Murillo J, Llorente I, Badosa E & Montesinos E (1999) Fire blight in Spain: situation and monitoring. Acta Horticulturae 489, 187-191;
* Manulis S, Zutra D, Kleitman F, Dror O, David I, Zilberstaine M & Shabi E (1998) Distribution of streptomycin-resistant strains of Erwinia amylovora in Israel and occurrence of blossom blight in the autumn. Phytoparasitica 26, 223-230;
* Miriam Z, Shula M & Frieda K (1999) Etiology and control measures of fire blight in Loquat. Acta Horticulturae 489, 495-497;
* Momol M T & Yegen O (1993) Fire blight in Turkey: 1985-1992. Acta Horticulturae 338, 37-39;
* Tokgonul S (1994) Studies on fire blight (Erwinia amylovora) on apple, quince and loquat in the east Mediterranean region of Turkey. [Turkish] Bitki Koruma Bulteni 31, 31-38;
* Tsiantos J & Psallidas P (2004) Fire blight resistance in various loquat, apple and pear cultivars and selections in Greece. Journal of Plant Pathology 86, 227-232;
* Zilberstaine M, Herzog Z, Manulis S & Zutra D (1996) Outbreak of fire blight threatening the loquat industry in Israel. Acta Horticulturae 411, 177-178;

HOST PLANT N°8: Eriobotrya (1EIOG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

E. amylovora is an important pest of loquat (Eriobotrya japonica) in Mediterranean countries. The pest caused outbreaks in loquat orchards (in Spain: Lopez et.al, 2002 and 1999; Turkey: Tokgonul, 1994). A serious outbreak of E. amylovora on loquat was reported from Israel (Zilberstaine et al., 1996). All tested loquat cultivars in Turkey and Greece were found to be highly susceptible for leave infections (Aktepe et al., 2014; Tsiantos & Psallidas, 2004). Publications about trials to combat E. amylovora in loquat (Turkey: Bastas & Maden, 2007; Israel: Miriam et al, 1999) or about Streptomycin resistance (Israel: Manulis et al., 1999 and 1998) gives some indication about the importance of E. amylovora on this host. Some authors indicated that the damage to loquat (Eriobotrya) and apple is less severe than to quince and pear (Beniglio & Ozakman, 1999; Momol & Yegen, 1993). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting, for fruit production.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Although no curative measures are available (thermotherapy / chemical), current measures in Council Directive 2000/29 (removal of symptomatic plants) are appropriate (although they fail to address asymptomatic infections). **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:**

Recommended for listing as an RNQP - based on data and its indirect unacceptable economic impact on Malus, Pyrus and Cydonia plants for planting. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* Aktepe B P, Aysan Y & Tepe S (2014) Determination of fire blight susceptibility of loquat cultivars. Acta Horticulturae 1056, 231-233;
* Bastas K K & Maden S (2007) Evaluation of host resistance inducers and conventional products for fire blight management in loquat and quince. Phytoprotection 88, 93-101;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;
* Lopez M M, Gorris M T, Llop P, Cambra M, Rosello M, Berra D, Borruel M, Plaza B, Garcia P & Palomo J L (2001) Chronicle of a disease foretold (that advances slowly): the 2001 Spanish situation. Acta Horticulturae 590, 35-38;
* Lopez M M, Llop P, Donat V, Penalver J, Rico A, Ortiz A, Murillo J, Llorente I, Badosa E & Montesinos E (1999) Fire blight in Spain: situation and monitoring. Acta Horticulturae 489, 187-191;
* Manulis S, Zutra D, Kleitman F, Dror O, David I, Zilberstaine M & Shabi E (1998) Distribution of streptomycin-resistant strains of Erwinia amylovora in Israel and occurrence of blossom blight in the autumn. Phytoparasitica 26, 223-230;
* Miriam Z, Shula M & Frieda K (1999) Etiology and control measures of fire blight in Loquat. Acta Horticulturae 489, 495-497;
* Momol M T & Yegen O (1993) Fire blight in Turkey: 1985-1992. Acta Horticulturae 338, 37-39;
* Tokgonul S (1994) Studies on fire blight (Erwinia amylovora) on apple, quince and loquat in the east Mediterranean region of Turkey. [Turkish] Bitki Koruma Bulteni 31, 31-38;
* Tsiantos J & Psallidas P (2004) Fire blight resistance in various loquat, apple and pear cultivars and selections in Greece. Journal of Plant Pathology 86, 227-232;
* Zilberstaine M, Herzog Z, Manulis S & Zutra D (1996) Outbreak of fire blight threatening the loquat industry in Israel. Acta Horticulturae 411, 177-178;

HOST PLANT N°9: Malus (1MABG) 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. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
- Non-certified material (‘CAC’):
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.

- Pre-basic, Basic, Certified material: Additional measures could include
• Isolation from host plants of Erwinia amylovora, or
• [where this is legally enforceable] Inspection of host plants in the immediate vicinity and removal and destruction of any symptomatic plants. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°10: Malus (1MABG) 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:

Qualified

Justification (if necessary):

PM 4/27 is also suitable for the certification of ornamental plants of Malus, Pyrus and Cydonia. **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. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;
* Lecomte P; Cadic A, Chartier R & Paulin JP (2001) Ornamental apple and fire blight: many resistant genotypes. PHM Revue Horticole 422, 58-60;

HOST PLANT N°11: Mespilus (1MSPG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

After its first finding, the pest is described as having caused during year 1996 in Hungary most damage on apple, pear, quince and medlar (Zsolt, 2004). In Croatia, medlar and quince had the highest percentage of infected trees, with apple and pear susceptibility depending on cultivar (Cvjetkovic & Halupecki, 1999). The main hosts im Bulgaria are quince and pear (over 40% of affected trees), then apple, medlar and Cotoneaster (Dimitrova & Andreev, 2004). During 1986-91 pear, quince and medlar (Mespilus) trees were most severely affected by fire blight while damage to apple and loquat trees was less severe (Benlioglu & Ozakman, 1999). Recent reports of the presence of E. amylovora on Medlar (without information on impact) are available for Montenegro (Balaz et al, 2012), Bulgaria (Bobev et al, 2011) and Serbia (Gavrilovic et.al., 2008). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Although no curative measures are available (thermotherapy / chemical), current measures in Council Directive 2000/29 (removal of symptomatic plants) are appropriate (although they fail to address asymptomatic infections). **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:**

Recommended for listing as an RNQP - based on data and its indirect unacceptable economic impact on Malus, Pyrus and Cydonia plants for planting. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
- Non-certified material (‘CAC’):
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.

- Pre-basic, Basic, Certified material: Additional measures could include
• Isolation from host plants of Erwinia amylovora, or
• [where this is legally enforceable] Inspection of host plants in the immediate vicinity and removal and destruction of any symptomatic plants. **REFERENCES:**

* Balaz J, Radunovic D & Krstic M (2012) Status of Erwinia amylovora in Montenegro. Proceedings of the International Symposium on Current Trends in Plant Protection, Belgrade, Serbia, 25-28th September, 2012. 373-378;
* Benlioglu K & Ozakman M (1999) Characterization of Turkish isolates of Erwinia amylovora. Acta Horticulturae 489, 127-131;
* Bobev S G, Vaerenbergh J, van Tahzima R & Maes M (2011) Fire blight spread in Bulgaria and characteristics of the pathogen Erwinia amylovora. Acta Horticulturae 896; 133-140;
* Cvjetkovic B & Halupecki E (1999) Experiences in controlling fire blight (Erwinia amylovora) in Croatia. Zbornik predavanj in referatov 4. Slovenskega Posvetovanja o Varstvu Rastlin v Portorozu od 3. do 4. Marca 1999, 197-200;
* Dimitrova E & Andreev L (2004) Fireblight situation in Bulgaria and measures undertaken by the NPPO. Bulletin OEPP 34, 343-345;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;
* Gavrilovic V, Milijasevic S & Zivkovic S (2006) Characterization of epiphytic bacteria originating from quince and medlar trees and their antagonistic activity against Erwinia amylovora in vitro. Mitteilungen aus der Biologischen Bundesanstalt fur Land- und Forstwirtschaft 408, 270;
* Zsolt M (2004) Fireblight in Bekes County (Hungary) in 1996/2002. Bulletin OEPP 34, 391-394;

HOST PLANT N°12: Mespilus (1MSPG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

Many publications list the genera as an ornamental host of E. amylovora. In 1989 new disease symptoms were recorded on quince in the region of Plovdiv, Bulgaria and were also found on pear, Mespilus germanica and apple (Bobev et al 1999). After its first finding, the pest is described as having caused during year 1996 in Hungary most damage on apple, pear, quince and medlar (Zsolt, 2004). In Croatia, medlar and quince had the highest percentage of infected trees, with apple and pear susceptibility depending on cultivar (Cvjetkovic & Halupecki, 1999). The main hosts im Bulgaria are quince and pear (over 40% of affected trees), then apple, medlar and Cotoneaster (Dimitrova & Andreev, 2004). During 1986-91 pear, quince and medlar (Mespilus) trees were most severely affected by fire blight while damage to apple and loquat trees was less severe (Benlioglu & Ozakman, 1999). Recent reports of the presence of E. amylovora on Medlar (without information on impact) are available for Montenegro (Balaz et al., 2012), Bulgaria (Bobev et al, 2011) and Serbia (Gavrilovic et.al., 2008). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Existing control is mainly based on prevention and exclusion. The use of chemical or biological products can prevent infection, and sanitation methods applied to infected plants can control the disease to a certain extent. No curative chemical control agents are available to eradicate E. amylovora (EFSA, 2014). **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:**

Recommended for listing as an RNQP - based on data and its indirect unacceptable economic impact on Malus, Pyrus and Cydonia plants for planting. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* Balaz J, Radunovic D & Krstic M (2012) Status of Erwinia amylovora in Montenegro. Proceedings of the International Symposium on Current Trends in Plant Protection, Belgrade, Serbia, 25-28th September, 2012. 373-378;
* Benlioglu K & Ozakman M (1999) Characterization of Turkish isolates of Erwinia amylovora. Acta Horticulturae 489, 127-131;
* Bobev S, Garbeva P, Crepel C, Maes M & Hauben L (1999) Fire blight in Bulgaria - characteristics of E. amylovora isolates. Proceedings of the Eighth International Workshop on Fire Blight, Kusadasi, Turkey, 12-15 October, 1998 . Acta Horticulturae 489, 121-126;
* Bobev SG, Vaerenbergh J, van Tahzima R & Maes M (2011) Fire blight spread in Bulgaria and characteristics of the pathogen Erwinia amylovora. Acta Horticulturae 896; 133-140;
* Cvjetkovic B & Halupecki E (1999) Experiences in controlling fire blight (Erwinia amylovora) in Croatia. Zbornik predavanj in referatov 4. Slovenskega Posvetovanja o Varstvu Rastlin v Portorozu od 3. do 4. Marca 1999, 197-200;
* Dimitrova E & Andreev L (2004) Fireblight situation in Bulgaria and measures undertaken by the NPPO. Bulletin OEPP 34, 343-345;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;
* Gavrilovic V, Milijasevic S & Zivkovic S (2006) Characterization of epiphytic bacteria originating from quince and medlar trees and their antagonistic activity against Erwinia amylovora in vitro. Mitteilungen aus der Biologischen Bundesanstalt fur Land- und Forstwirtschaft 408, 270;
* Zsolt M (2004) Fireblight in Bekes County (Hungary) in 1996/2002. Bulletin OEPP 34, 391-394;

HOST PLANT N°13: Photinia davidiana (STVDA) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

Many publications list the genera as an ornamental host of E. amylovora. Most of the literature found are confirmations of pest status of Photinia davidiana. Losses are more important on pear, apple and quince (EFSA PLH, 2014). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Minor
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?

Yes
Is there unacceptable economic impact caused to other hosts (or the same host with a different intended use) produced at the same place of production due to the transfer of the pest from the named host plant for planting?

Yes
Conclusion:

Candidate
Justification:

There are uncertainties about the direct economic impact. However the indirect economic impact is considered as not acceptable. **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:

Existing control is mainly based on prevention and exclusion. The use of chemical or biological products can prevent infection, and sanitation methods applied to infected plants can control the disease to a certain extent. No curative chemical control agents are available to eradicate E. amylovora (EFSA, 2014). **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:**

Recommended for listing as an RNQP - based on data and its indirect unacceptable economic impact on Malus, Pyrus and Cydonia plants for planting. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°14: Pyracantha (1PYEG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Many publications list the genera as an ornamental host of E. amylovora and it can have quite severe effects on this host depending on variety and climatic conditions. Within the ornamental and wild plants, the majority of Pyracantha species are generally very susceptible and Pyracantha cultivars can maintain epidemics between periods of disease attack on fruit production host plants (EFSA PLH, 2014). Remark: Losses are more important on pear, apple and quince (EFSA PLH, 2014). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Existing control is mainly based on prevention and exclusion. The use of chemical or biological products can prevent infection, and sanitation methods applied to infected plants can control the disease to a certain extent. No curative chemical control agents are available to eradicate E. amylovora (EFSA, 2014). **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:**

Recommended for listing as an RNQP - based on data and its indirect unacceptable economic impact on Malus, Pyrus and Cydonia plants for planting. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°15: Pyrus (1PYUG) 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. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
- Non-certified material (‘CAC’):
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.

- Pre-basic, Basic, Certified material: Additional measures could include
• Isolation from host plants of Erwinia amylovora, or
• [where this is legally enforceable] Inspection of host plants in the immediate vicinity and removal and destruction of any symptomatic plants. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°16: Pyrus (1PYUG) 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:

Qualified

Justification (if necessary):

PM 4/27 is also suitable for the certification of ornamental plants of Malus, Pyrus and Cydonia. **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. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* Chatfield JA, Taylor NA, Draper EA, Nameth S & Boggs JF (2002) Infectious disease problems of ornamental plants in Ohio: 2001. Special Circular - Ohio Agricultural Research and Development Center 186, 46-52;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.pdf>;
* EPPO (1999) EPPO Standards PM 4/27 (1) Certification schemes. Pathogen-tested material of Malus, Pyrus and Cydonia. Bulletin OEPP/EPPO Bulletin 29, 239-252;
* 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 Erwinia amylovora (Burr.) Winsl. et al.;

HOST PLANT N°17: Sorbus (1SOUG) 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?**

No
Conclusion:

Evaluation continues **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:

The main risk of introduction and spread of fire blight over medium and long distances is through plant material contaminated with E. amylovora, and mainly through plant nursery materials, because the pathogen can live as an epiphyte or an endophyte in buds and shoots. Once infections have taken place, rain and wind (especially thunderstorms) play an important role in the transport of inoculum over short distances and probably also over medium to long distances (aero currents). Insect pollinators are efficient carriers over short and medium distances. Workers in orchards can serve as an efficient system of disseminating E. amylovora, especially over short to medium distances, by means of hands, clothing, pruning and spraying tools (EFSA PLH, 2014). To conclude, if the pest is present on the plants for planting, it may be easily spread over the place of production and no curative measure will be available. Taking preventive measures into account (e.g. spraying of copper compounds), plants for planting are considered to be a significant pathway compared to others. It is justified to regulate this pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Many publications list the genera as an ornamental host of E. amylovora and it can have quite severe effects on this host depending on variety and climatic conditions. Within the ornamental and wild plants, members of the genus Sorbus spp. especially S. aria are generally very susceptible (EFSA PLH, 2014). Remarks: Losses are more important on pear, apple and quince (EFSA PLH, 2014). Whatever the direct economic impacts on this host, E. amylovora can have indirect unacceptable economic impacts on Malus and Pyrus plants for planting.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

 **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:

Existing control is mainly based on prevention and exclusion. The use of chemical or biological products can prevent infection, and sanitation methods applied to infected plants can control the disease to a certain extent. No curative chemical control agents are available to eradicate E. amylovora (EFSA, 2014). **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:**

Recommended for listing as an RNQP - based on data and its indirect unacceptable economic impact on Malus, Pyrus and Cydonia plants for planting. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

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

Yes
Proposed Risk management measure:

The proposed measures are without prejudice to additional measures needed to provide the appropriate level of assurance in relation to plants moving into the protected zone or other areas where Erwinia amylovora is recognised as a quarantine organism:
(a) Plants produced in areas known to be free from Erwinia amylovora;
or
(b) The production site has been inspected at an appropriate time during the last growing season and plants showing symptoms, and any surrounding host plants, have been immediately rogued out and destroyed.
Justification (if necessary):

Plants grown in buffer zones for passporting for movement into the protected zone, if this measure is maintained, would meet the requirements of either the first or the second option for movements within the rest of the EU. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Erwinia amylovora (Burr.) Winsl. et al. EFSA Journal 2014;12(12):3922, 37 pp. doi:10.2903/j.efsa.2014.3922 <http://www.efsa.europa.eu/en/efsajournal/doc/3922.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 Erwinia amylovora (Burr.) Winsl. et al.;