NAME OF THE ORGANISM: Candidatus Phytoplasma prunorum (Apricot chlorotic leafroll mycoplasm) (PHYPPR)

GENERAL INFORMATION ON THE PEST

Name as submitted in the project specification (if different to the preferred name):
 
Apricot chlorotic leafroll mycoplasm  
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: Fruits (including hops) sector

Is it justified that the pest is listed at a taxonomic rank below species level?
 
Not relevant  
Conclusion:

* Candidate: Fruits (including hops) sector

Justification (if necessary):
 
For the Fruit and ornamental sectors: Candidatus phytoplasma prunorum has been detected frequently on Prunus armeniaca, P. salicina, P. domestica, P. persica and more rarely on P. amygdalus (Cieślińska, 2011). Wild species of P. spinosa and P. cerasifera are frequently host plants. This diversity is supporting a listing at the Genus level for Prunus.  
For the Forestry sector: Prunus avium is the only host of the Prunus genus listed in Annex I of EU Directive 1999/105. However experts also considered during the evaluation other Prunus species, since other species are more susceptible to the disease and could also be grown in forest nurseries. **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 (2012); Belgium (2012); Bulgaria (2012); Croatia (2012); Czech Republic (2012); France (2012); France/Corse (2012); Germany (2012); Greece (2012); Hungary (2012); Italy (2012); Italy/Sardegna (2012); Poland (2012); Romania (2012); Slovakia (2012); Slovenia (2012); Spain (2015); United Kingdom (2000); United Kingdom/England (2000)  
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/>). This pest is a candidate for the RNQP status according to the IIA2AWG.  
Comment by forestry experts: Very limited number of analyses were performed on Prunus avium, but besides older data, new reports are confirmed from Poland (Cieslinska 2015), Czech Republic (Ludvikova et al., 2011) and Hungary (Tarcali & Kovics, 2012). Since no targeted surveys of CPp infection on Prunus avium are undertaken, the distribution of CPp in Europe is unclear and suspected to be underestimated.

HOST PLANT N°1: Prunus (1PRNG) 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:
 
Evaluation continues  
 
Justification (if necessary):
 
All species of the Prunus genus are not covered by the EPPO PM 4/30 Standard, evaluation continues for the whole genus. **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:
 
Plants for planting are an efficient pathway. Pathogen concentration and distribution in the trees is fluctuant in space and during the year. Wild tolerant hosts are an important source of infection (Seljak and Rot, 2013) and are present in most of the regions producing stone fruit. Vector transmission is a pathway, especially in regions where the vector Cacopsylla pruni is present. In these regions vector transmission might be the main pathway, but it is still important, even in these regions, to delay the occurrence of symptoms and damages. Experts concluded that plants for planting are a significant pathway compared to other pathways. **5 - Economic impact:**  
Are there documented reports of any economic impact on the host?
 
Yes  
Justification:
 
The phytoplasma is present in the EU area. Prunus armeniaca and japanese plums (P. salicina) are particularly impacted as this phytoplasma can lead to the mortality of the plants (ANSES, 2012). It causes substantial economic losses due to tree decline, reduction in fruit weight and quality. Economic incidence is less important for P. persica, P. amygdalus and P. domestica. In France, in the department Pyrenees-Orientales, about 80 % of the mortality and decline observed on  
apricot is due to ESFY and the production losses associated with ESFY in Italian plum orchards reach up to 40 % in Japanese plum. The economic incidence, however, depends on the susceptibility of the Prunus species, cultivars and varieties and the strain virulence. The disease is reported as “economically very important” and “severe” by different authors in major stone-fruit-growing areas of Europe (Prima phacie, 2012).  
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:
 
Crop losses and tree decline cause an unacceptable economic impact. **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:
 
Epidemiological data is lacking on the presence and impact of ESFY in certain regions (Steffek et al., 2012). However ‘Ca. P. prunorum’ is spread in most stone producing areas of Central and Southern Europe, where it has a substantial impact on apricots, Japanese plums and peaches. **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 approach, based on visual examination and/or testing. **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 'Candidatus Phytoplasma prunorum'. In the case of Prunus domestica rootstocks, it should derive from mother plants that have been tested within the previous 5 years and found free from the pest;  
AND  
(B) (a) Plants produced in areas known to be free from 'Candidatus Phytoplasma prunorum';  
or  
(b) Site of production found free from 'Candidatus Phytoplasma prunorum' over the last complete growing season by visual inspection and any symptomatic plants in the immediate vicinity rogued out and destroyed immediately;  
or  
(c) No more than 2% of plants in the site of production showing symptoms during inspections at appropriate times during the last growing season, and those plants and any symptomatic plants in the immediate vicinity rogued out and destroyed immediately, and a representative sample of the remaining asymptomatic plants in the lots in which symptomatic plants were found has been tested and found free from 'Candidatus Phytoplasma prunorum'.  
  
Pre-basic, Basic and Certified: Additional measures could include  
• Cultivation under insect-proof conditions (pre-basic);  
• Isolation of mother plants from host plants of the pest and the vector, including uncultivated plants;  
• Testing of candidate trees for mother plants;  
• Mother plants in protected cultivation - retesting of all plants (pre-basic) or a representative sample (basic and certified) at least every 15 years;  
• Other mother plants - testing of a representative sample (basic and certified) at least every 5 years;  
• More testing in case of finding of an infection, including testing of all mother plants in the production site;  
• Regular testing of mother plants in the case of Prunus domestica rootstocks in which symptoms cannot be seen.  
Justification (if necessary):
 
2% failure rate is a mean of proposals submitted within replies to the RNQP Questionnaire. Mother plants of CAC material should be inspected. There is a risk of Prunus spinosa (asymptomatic) being in the environment. Destroying contaminated plants in the immediate vicinity would be useful; however it is difficult to apply for non-quarantine pests. Prunus domestica rootstocks are asymptomatic.  
Experts discussed the ratio cost/benefit of a more systematic testing of CAC mother plants: This would allow detection of asymptomatic plants. However, this was counterbalanced by the difficulty of testing (testing of the roots would be more reliable, but not practical) and by the risk of reinfestation in case of high vector pressure. No consensus was reached within the core-HEWGplus on the added value of such a more systematic testing, in the context of the RNQP status. **REFERENCES:**

* ANSES (2012) Rapport d'expertise collective. Groupe de travail "ARP phytoplasmes des arbres fruitiers". Available at <https://www.anses.fr/fr/system/files/SVEG2011sa0137Ra.pdf>;
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* Mehle N, Ravnikar M, Seljak G, Knapic V, Dermastia M (2011) The most widespread phytoplasmas, vectors and measures for disease control in Slovenia. Phytopathogenic Mollicutes 1: 65- 76. Available at: <http://www.kmetijskizavod-ng.si/priponke/OVR/fitoplazme_slovenia.pdf>;
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* Seljak G, Rot M (2013) Preučevanje bionomije češpljeve bolšice (Cacopsylla pruni) na Primorskem. Zbornik predavanj in referatov 11. slovenskega posvetovanja o varstvu rastlin z mednarodno udeležbo = Lectures and papers presented at the 11th Slovenian Conference on Plant Protection with International Participation, Bled, 5.–6. marec 2013 p.: 89-95. Available at <http://dvrs.bf.uni-lj.si/spvr/2013/17Seljak.pdf>;
* Steffek R, Foliak S, Sauvion N, Labonne G, MacLeod A (2012) Distribution of ‘Candidatus Phytoplasma prunorum’ and its vector Cacopsylla pruni in European fruit-growing areas: a review. EPPO Bulletin 42, 191-202;