NAME OF THE ORGANISM: Grapevine leafroll-associated virus 1 (GLRAV1)

GENERAL INFORMATION ON THE PEST

Name as submitted in the project specification (if different to the preferred name):
 
  
Pest category:
 
Viruses and viroids **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: Vine sector

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

* Candidate: Vine sector

**2 – Status in the EU:**
   
Is this pest already a quarantine pest for the whole EU?
 
No  
Presence in the EU:
 
Yes  
Conclusion:
 
candidate  
Justification (if necessary):
 
GLRaV-1 is found in Italy (Fortusini et al., 1996), Poland (Komorowska et al., 2014), Spain (Fiore et al., 2016) in the United-Kingdom (Immanuel et al., 2015) and also Croatia, Czech Republic, France and Greece (Habili et al., 2007)….

HOST PLANT N°1: Vitis (1VITG) for the Vine sector.

Origin of the listing:
 
Council Directive 68/193/EEC  
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):
 
In the RNQP Questionnaire, HR asked for deregulation arguing that the economic impact is acceptable with regards to the intended use. As a consequence, it is proposed to continue to apply the methodology on this pest, even though this pest is already listed in EPPO PM 4/8(2) Standard, with a particular attention to the economic impact. **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 method of transmission of the closterovirus GLRaV-1 is known to be via plants for planting (and is tested for and found in many certification schemes). However it is also suggested that coccids (scale insects) are involved in the natural spread of leafroll disease and of GLRaV-1 (and GLRaV-3)(Fortusini et al., 1996). Later Habili et al., 2007 suggested that the vectors were two species of scale insects and two species of mealybugs. In the absence of additional information on transmission, findings in new areas are considered to be the result of introduction by plants for planting. GLRaV1 is often found in combination with other grapevine viruses in infected vineyards. In absence of additional data on vector transmission, experts considered that plants for planting is the main pathway in area where the pest is present. **5 - Economic impact:**  
Are there documented reports of any economic impact on the host?
 
Yes  
Justification:
 
There are few references directly referring to yield or quality effects caused by GLRaV1 by itself, it is one of at least ten viruses causing grapevine leafroll disease, and it is usually found in association with other viruses. In Australia, the occurrence of GLRaV-1 strongly correlated with the low-yielding character of Sultana clones tested, suggesting that the virus may contribute to low yields in some leafroll-infected Sultana clones. It can cause delayed fruit maturity and reduced sugar content by 25-50% of the berries. In the Sultana clones with severe virus symptoms the mean yield was reduced by 35% over six seasons and the main cause was shown to be by infection with GLRaV-1 (Habili et al., 2007). In general though, it is second to that of GLRaV-3 in its severity and rate of infection (Habili et al., 2007).  
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:
 
GLRaV1 is often associated with GLRaV3. The association of these two types can have unacceptable impact on the vines (vitis vinifera). American rootstocks are usually symptomless but transmit the disease (Martelli, 2014). **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:
 
Tests on Vitis indicators, ELISA testing, molecular tests and visual inspection are effective methods for virus detection. **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 EPPO PM 4/8 Standard and data **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
Yes  
Proposed Tolerance levels:
 
Zero tolerance based on visual examination for the marketed plants, and on testing stock nurseries for Pre-basic, Basic and Certified material. **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
Yes  
Proposed Risk management measure:
 
Based on visual examination carried out at least twice during the last growing season at appropriate times for the expression of symptoms.  
- Non-certified (‘standard’): Not more than 10% of plants showing any virus symptoms and all plants showing symptoms rogued out and destroyed within two weeks.  
- Pre-basic (“initial”), Basic, Certified: additional measures (in addition to non-certified) could include protected cultivation of higher grade material, isolation distance from other vines and other host plants, periodic testing of mother plants, measures to control vectors, and a rest period from host plants of the virus before planting.’  
Justification (if necessary):
 
For this pest there is no need for soil testing, but the vector should be controlled. **REFERENCES:**

* Fiore N, Zamorano A, Sanchez-Diana N, Gonzalez X, Pallas V & Sanchez-Navarro J (2016) First detection of Grapevine rupestris stem pitting-associated virus
* and Grapevine rupestris vein feathering virus, and new phylogenetic groups for Grapevine fleck virus and Hop stunt viroid isolates, revealed from grapevine field surveys in Spain. Phytopathologia Mediterranea, 55(2);
* Fortusini A, Scattini G, Cinquanta S & Prati S (1996) Natural spread of grapevine leafroll virus 1 (GLRV-1), grapevine leafroll virus 3 (GLRV-3) and grapevine fleck virus (GFkV). Informatore Fitopatologico, 46 Vol 12, 39-43;
* Habili N, Kominek P & Little A (2007) Grapevine leafroll associated virus 1 as a common grapevine pathogen. In Plant Viruses 1(1). 63-68. Global Science Books;
* Immanuel T M, Delmiglio C, Ward L I, Denton J O & Clover G R G (2015) First reports of Grapevine virus A, Grapevine fleck virus, and Grapevine leafroll-associated virus 1 in the United Kingdom. Plant disease, 6(99);
* Komorowska B, Berniak H & Golis T (2014) Detection of grapevine viruses in Poland. Journal of Phytopathology, 5(162);