NAME OF THE ORGANISM: Potato spindle tuber viroid (PSTVD0)

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: Seed potato sector, Vegetable seed sector, Vegetable propagating and planting material (other than seeds) sector, Ornamental sector

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

* Candidate: Vegetable seed sector, Vegetable propagating and planting material (other than seeds) sector, Ornamental sector
* Not evaluated: Seed potato sector

**2 – Status in the EU:**
   
Is this pest already a quarantine pest for the whole EU?
 
Yes  
Presence in the EU:
 
Yes  
List of countries (EPPO Global Database):
 
Austria (2011); Croatia (2014); Czech Republic (2014); Germany (2011); Italy (2011); Malta (2013); Poland (2016); Slovenia (2013); Spain (2011)  
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 considered to be already a quarantine pest for the whole EU (annex IA1 of the directive 2000/29/EC). However, in view of its presence in the EU (see data of the presence of this pest on the EU territory available in EPPO Global Database: <https://gd.eppo.int/>), classification within the directive should be revised. This pest is not evaluated in the context of the EU RNQP Project but because it was submitted for evaluation by the Working Party on Phytosanitary Regulation (WPPR, 2016). As a consequence, evaluation continues.

HOST PLANT N°1: Capsicum annuum (CPSAN) for the Vegetable seed sector.

Origin of the listing:
 
EFSA PRA (EFSA PLH, 2011)  
Plants for planting:
 
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:
 
Although PSTVd in Capsicum annum seed has not been reported, a high probability rating of this is suggested by analogy, but this rating is associated with a high uncertainty (EFSA, 2011). However, if present, any infection arising from seed will likely spread rapidly to neighbouring susceptible plant species by mechanical means in the nursery (EFSA, 2011). Therefore seeds as plants for planting can be considered a main pathway for this pest/host/intended use combination. **5 - Economic impact:**  
Are there documented reports of any economic impact on the host?
 
Yes  
Justification:
 
PSTVd has been recorded in three pepper crops in New Zealand. The infected pepper plants displayed only very mild symptoms (i.e. a certain “waviness” or distortion of the leaf margins near the top of the plants). However, after artificial (mechanical) inoculation of PSTVd to pepper cv. Yolo Wonder, fruit size was significantly reduced. It was concluded (in the absence of other pospiviroids) that PSTVd has the potential to cause minor damage in pepper (EFSA, 2011). Peppers may be grown on premises growing other susceptible crops such as tomato, so could act as a source of transmission during the growing season.  
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:
 
The infected pepper plants displayed only very mild symptoms (i.e. a certain “waviness” or distortion of the leaf margins near the top of the plants). However, after artificial (mechanical) inoculation of PSTVd to pepper cv. Yolo Wonder, fruit size was significantly reduced. It was concluded (in the absence of other pospiviroids) that PSTVd has the potential to cause minor damage in pepper (EFSA-PLH, 2011). Peppers may be grown on premises growing other susceptible crops such as tomato and potato, so could act as a source of transmission during the growing season.  
Remark: there may be financial losses due to the costs of testing for and removing asymptomatic infected plants and these costs can be considerable. For example, In the Netherlands in 2006-2007 ornamental plants infected with PSTVd were traced (costing the government 700,000 Euros) and destroyed (costing industry 3 to 5 million Euros). The plants did not show any noticeable symptoms, but were destroyed to prevent infection spreading to tomato and potato crops. **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:
 
There is no management option that can prevent infestation other than exclusion and avoiding the use of infected plants (EFSA-PLH, 2011). Since tomato pospiviroid infections result in variable symptoms, requirements for using plant propagation material (including seeds) that is certified as free from pospiviroids, based on surveillance and targeted tests, should be an effective measures. This position is reinforced by the situation observed on PSTVd: the official measures significantly reduced the overall level of PSTVd circulating within the EU territory, and the incidence of this pathogen. However it is not possible to conclude whether the reduction in PSTVd prevalence in ornamentals has led to a reduction of outbreaks in potato, tomato and pepper productions. **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. This pest would qualify for RNQP status if it were to be deregulated as a quarantine pest, but the SEWG makes no recommendation on the removal of the quarantine pest status. Moreover an alternative to the listing under the RNQP Status could be to recommend, in the risk management measures for tomato, isolation from other potential sources of infection, including other infected host plants. **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
No  
Proposed Tolerance levels:
 
 **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
No  
Proposed Risk management measure:
 
 **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2011) Scientific Opinion on the assessment of the risk of solanaceous pospiviroids for the EU territory and the identification and evaluation of risk management options. EFSA Journal 2011;9(8):2330 [132 pp.]. doi:10.2903/j.efsa.2011. 2330; www.efsa.europa.eu/efsajournal;
* MAF (2012) Import Risk Analysis: Tomato and Capsicum seed for sowing from all countries. Ministry of Agriculture and Forestry of New-Zealand, Information Bureau. Available at: <http://www.mpi.govt.nz/document-vault/2887>;

HOST PLANT N°2: Capsicum annuum (CPSAN) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:
 
EFSA PRA (EFSA PLH, 2011)  
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:
 
Although PSTVd in Capsicum annum seed has not been reported, a high probability rating of this is suggested by analogy, but this rating is associated with a high uncertainty (EFSA-PLH, 2011). However, if present, any infection arising from seed will likely spread rapidly to neighbouring susceptible plant species by mechanical means in the nursery (EFSA-PLH, 2011). Therefore young plants as plants for planting (arising from infected seed, or mechanical means from other hosts), can be considered a main pathway for this pest/host/intended use combination. **5 - Economic impact:**  
Are there documented reports of any economic impact on the host?
 
Yes  
Justification:
 
PSTVd has been recorded in three pepper crops in New Zealand. The infected pepper plants displayed only very mild symptoms (i.e. a certain “waviness” or distortion of the leaf margins near the top of the plants). However, after artificial (mechanical) inoculation of PSTVd to pepper cv. Yolo Wonder, fruit size was significantly reduced. It was concluded (in the absence of other pospiviroids) that PSTVd has the potential to cause minor damage in pepper (EFSA, 2011). Peppers may be grown on premises growing other susceptible crops such as tomato, so could act as a source of transmission during the growing season.  
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:
 
The infected pepper plants displayed only very mild symptoms (i.e. a certain “waviness” or distortion of the leaf margins near the top of the plants). However, after artificial (mechanical) inoculation of PSTVd to pepper cv. Yolo Wonder, fruit size was significantly reduced. It was concluded (in the absence of other pospiviroids) that PSTVd has the potential to cause minor damage in pepper (EFSA-PLH, 2011). Peppers may be grown on premises growing other susceptible crops such as tomato and potato, so could act as a source of transmission during the growing season.  
Remark: there may be financial losses due to the costs of testing for and removing asymptomatic infected plants and these costs can be considerable. For example, In the Netherlands in 2006-2007 ornamental plants infected with PSTVd were traced (costing the government 700,000 Euros) and destroyed (costing industry 3 to 5 million Euros). The plants did not show any noticeable symptoms, but were destroyed to prevent infection spreading to tomato and potato crops. **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:
 
There is no management option that can prevent infestation other than exclusion and avoiding the use of infected plants (EFSA-PLH, 2011). Since tomato pospiviroid infections result in variable symptoms, requirements for using plant propagation material (including seeds) that is certified as free from pospiviroids, based on surveillance and targeted tests, should be an effective measures. This position is reinforced by the situation observed on PSTVd: the official measures significantly reduced the overall level of PSTVd circulating within the EU territory, and the incidence of this pathogen. However it is not possible to conclude whether the reduction in PSTVd prevalence in ornamentals has led to a reduction of outbreaks in potato, tomato and pepper productions. **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. This pest would qualify for RNQP status if it were to be deregulated as a quarantine pest, but the SEWG makes no recommendation on the removal of the quarantine pest status. Moreover an alternative to the listing under the RNQP Status could be to recommend, in the risk management measures for tomato, isolation from other potential sources of infection, including other infected host plants. **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
No  
Proposed Tolerance levels:
 
 **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
No  
Proposed Risk management measure:
 
 **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2011) Scientific Opinion on the assessment of the risk of solanaceous pospiviroids for the EU territory and the identification and evaluation of risk management options. EFSA Journal 2011;9(8):2330 [132 pp.]. doi:10.2903/j.efsa.2011. 2330; www.efsa.europa.eu/efsajournal;
* MAF (2012) Import Risk Analysis: Tomato and Capsicum seed for sowing from all countries. Ministry of Agriculture and Forestry of New-Zealand, Information Bureau. Available at: <http://www.mpi.govt.nz/document-vault/2887>;

HOST PLANT N°3: Capsicum annuum (CPSAN) for the Ornamental sector.

Origin of the listing:
 
EFSA PRA (EFSA PLH, 2011)  
Plants for planting:
 
Plants intended for planting **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:
 
A number of Capsicum annuum varieties are bred and grown for ornamental use and in the absence of other information, are assumed to react similarly as vegetable pepper types. Although PSTVd in Capsicum annum seed has not been reported, a high probability rating of this is suggested by analogy, but this rating is associated with a high uncertainty (EFSA-PLH, 2011). However, if present, any infection arising from seed will likely spread rapidly to neighbouring pepper plants or other susceptible plant species by mechanical means in the nursery (EFSA-PLH, 2011). This would have an indirect economic impact.  
Therefore young plants as plants for planting (arising from infected seed, or by mechanical means from other hosts), can be considered a main pathway for this pest/host/intended use combination. **5 - Economic impact:**  
Are there documented reports of any economic impact on the host?
 
Yes  
Justification:
 
PSTVd has been recorded in three pepper crops in New Zealand, though none were ornamental varieties. The infected pepper plants displayed only very mild symptoms (i.e. a certain “waviness” or distortion of the leaf margins near the top of the plants). However, after artificial (mechanical) inoculation of PSTVd to pepper cv. Yolo Wonder, fruit size was significantly reduced. It was concluded (in the absence of other pospiviroids) that PSTVd has the potential to cause minor damage in pepper (EFSA-PLH, 2011). Peppers may be grown on premises growing other susceptible crops such as tomato, so could act as a source of transmission during the growing season. Remark: other ornamental solanaceous hosts such as S. jasminoides or Brugmansia sp. could also act in a similar way.  
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:
 
Direct economic impact of PSTVd is acceptable on ornamentals. Navarro et al. (2009) demonstrated that the same isolate of PSTVd identified on symptomless S. jasminoides plants was found in a symptomatic plant of tomato grown close of the ornamentals. Experts concluded that ornamentals could represent a source of inoculum for susceptible crops produced at the same place of production. **6 - Are there feasible and effective measures available to prevent the presence of the pest on the plants for planting at an incidence above a certain threshold (including zero) to avoid an unacceptable economic impact as regards the relevant host plants?**
 
Yes
 
Conclusion:
 
candidate  
Justification:
 
 **7- Is the quality of the data sufficient to recommend the pest to be listed as a RNQP?**
 
Yes
 
Conclusion:
 
Candidate  
Justification:
 
 **CONCLUSION ON THE STATUS:**
 
Recommended for listing as an RNQP, based on data and potential indirect economic impact. This pest would qualify for RNQP status if it were to be deregulated as a quarantine pest, but the SEWG makes no recommendation on the removal of the quarantine pest status. In the case of a RNQP listing, all of the potentially infected Solanaceae should be covered, and not only ornamental Capsicum. Moreover an alternative to the listing under the RNQP Status could be to recommend, in the risk management measures for tomato, isolation from other potential sources of infection, including other infected host plants. **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
No  
Proposed Tolerance levels:
 
 **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
No  
Proposed Risk management measure:
 
 **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2011) Scientific Opinion on the assessment of the risk of solanaceous pospiviroids for the EU territory and the identification and evaluation of risk management options. EFSA Journal 2011;9(8):2330 [132 pp.]. doi:10.2903/j.efsa.2011. 2330; www.efsa.europa.eu/efsajournal;

HOST PLANT N°4: Solanum lycopersicum (LYPES) for the Vegetable seed sector.

Origin of the listing:
 
EFSA PRA (EFSA PLH, 2011)  
Plants for planting:
 
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:
 
Potato spindle tuber viroid (PSTVd) is a plant pathogen that causes disease in tomatoes. From interception records in the Europhyt database, there is evidence for the presence of PSTVd in tomato seeds imported into Europe from production areas outside the EU. Transmission of PSTVd through seed has been reported in tomato (EFSA-PLH, 2011). The percentage of infected seedlings, grown from seeds from plants infected with PSTVd ranged from 2 to 31% in tomato (NZ PRA, 2012). Seed disinfection techniques are not effective in this host. There is experimental and circumstantial evidence that PSTVd can be spread between crops by mechanical transmission in tomato and thus any infection arising from seed will likely spread rapidly to neighbouring susceptible plant species in the nursery (EFSA-PLH, 2011). Therefore seeds as plants for planting are considered a main pathway for this pest/host/intended use combination. **5 - Economic impact:**  
Are there documented reports of any economic impact on the host?
 
Yes  
Justification:
 
All pospiviroids cause similar symptoms in tomato, independent of the viroid species. With PSTVd, severity may vary with the tomato cultivar. Symptoms are most conspicuous when plants become infected at early stages of development and when grown at high temperatures and light intensity. The first symptoms are growth reduction and chlorosis in the upper leaves, subsequently, this may develop into permanent stunting and bunchy growth. Occasionally, plants may either die or partially recover. Usually, symptoms are observed along rows in the fields and greenhouses, indicating that the viroid spreads mechanically during crop handling. Fruit production generally stops on infected plants, yield loss is strongly dependent on the age at which plants become infected. Early infection, before fruit setting, will result in close to 100% loss, while losses associated with later infections are more variable. Delay in fruit ripening, storage life and management costs are also likely (EFSA, 2011). Yield loss in tomatoes has been reported as significant, due to reduced fruit size and flowers can abort resulting in no fruit, and the plant can be totally malformed in severe cases (MAF, 2012).  
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)
 
Major  
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:
 
Overall there is ample evidence that significant yield losses may result from pospiviroid infections in tomato and the impact is therefore expected to be major, with low uncertainty (EFSA-PLH, 2011). The economic impact is evaluated as unacceptable on Tomato. According to New Zealand, Import risk analysis (MAF, 2012), yield loss in tomatoes has been reported as significant, due to reduced fruit size and flowers can abort resulting in no fruit, and the plant can be totally malformed in severe cases. **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:
 
There is no management option that can prevent infestation other than exclusion and avoiding the use of infected plants (EFSA-PLH, 2011). Since tomato pospiviroid infections result in variable symptoms, requirements for using plant propagation material (including seeds) that is certified as free from pospiviroids, based on surveillance and targeted tests, should be an effective measures. This position is reinforced by the situation observed on PSTVd: the official measures significantly reduced the overall level of PSTVd circulating within the EU territory, and the incidence of this pathogen. However it is not possible to conclude whether the reduction in PSTVd prevalence in ornamentals has led to a reduction of outbreaks in potato, tomato and pepper productions. **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. This pest would qualify for RNQP status if it were to be deregulated as a quarantine pest, but the SEWG makes no recommendation on the removal of the quarantine pest status. Moreover an alternative to the listing under the RNQP Status could be to recommend, in the risk management measures for tomato, isolation from other potential sources of infection, including other infected host plants. **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
No  
Proposed Tolerance levels:
 
 **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
No  
Proposed Risk management measure:
 
 **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2011) Scientific Opinion on the assessment of the risk of solanaceous pospiviroids for the EU territory and the identification and evaluation of risk management options. EFSA Journal 2011;9(8):2330 [132 pp.]. doi:10.2903/j.efsa.2011. 2330; www.efsa.europa.eu/efsajournal;
* MAF (2012) Import Risk Analysis: Tomato and Capsicum seed for sowing from all countries. Ministry of Agriculture and Forestry of New-Zealand, Information Bureau. Available at: <http://www.mpi.govt.nz/document-vault/2887>;

HOST PLANT N°5: Solanum lycopersicum (LYPES) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:
 
EFSA PRA (EFSA PLH, 2011)  
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:
 
Potato spindle tuber viroid (PSTVd) is a plant pathogen that causes disease in tomatoes. From interception records in the Europhyt database, there is evidence for the presence of PSTVd in tomato seeds imported into Europe from production areas outside the EU. Transmission of PSTVd through seed has been reported in tomato (EFSA-PLH, 2011). The percentage of infected seedlings, grown from seeds from plants infected with PSTVd ranged from 2 to 31% in tomato (MAF, 2012). Seed disinfection techniques are not effective in this host. There is experimental and circumstantial evidence that PSTVd can be spread between crops by mechanical transmission in tomato and thus any infection arising from seed will likely spread rapidly to neighbouring susceptible plant species in the nursery (EFSA-PLH, 2011). Therefore plants for planting (arising from infected seed, or mechanical means from other hosts) are considered a main pathway for this pest/host/intended use combination. **5 - Economic impact:**  
Are there documented reports of any economic impact on the host?
 
Yes  
Justification:
 
All pospiviroids cause similar symptoms in tomato, independent of the viroid species. With PSTVd, severity may vary with the tomato cultivar. Symptoms are most conspicuous when plants become infected at early stages of development and when grown at high temperatures and light intensity. The first symptoms are growth reduction and chlorosis in the upper leaves, subsequently, this may develop into permanent stunting and bunchy growth. Occasionally, plants may either die or partially recover. Usually, symptoms are observed along rows in the fields and greenhouses, indicating that the viroid spreads mechanically during crop handling. Fruit production generally stops on infected plants, yield loss is strongly dependent on the age at which plants become infected. Early infection, before fruit setting, will result in close to 100% loss, while losses associated with later infections are more variable. Delay in fruit ripening, storage life and management costs are also likely (EFSA, 2011). Yield loss in tomatoes has been reported as significant, due to reduced fruit size and flowers can abort resulting in no fruit, and the plant can be totally malformed in severe cases (MAF, 2012).  
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)
 
Major  
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:
 
Overall there is ample evidence that significant yield losses may result from pospiviroid infections in tomato and the impact is therefore expected to be major, with low uncertainty (EFSA-PLH, 2011). The economic impact is evaluated as unacceptable on Tomato. According to New Zealand, Import risk analysis (MAF, 2012), yield loss in tomatoes has been reported as significant, due to reduced fruit size and flowers can abort resulting in no fruit, and the plant can be totally malformed in severe cases. **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:
 
There is no management option that can prevent infestation other than exclusion and avoiding the use of infected plants (EFSA-PLH, 2011). Since tomato pospiviroid infections result in variable symptoms, requirements for using plant propagation material (including seeds) that is certified as free from pospiviroids, based on surveillance and targeted tests, should be an effective measures. This position is reinforced by the situation observed on PSTVd: the official measures significantly reduced the overall level of PSTVd circulating within the EU territory, and the incidence of this pathogen. However it is not possible to conclude whether the reduction in PSTVd prevalence in ornamentals has led to a reduction of outbreaks in potato, tomato and pepper productions. **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. This pest would qualify for RNQP status if it were to be deregulated as a quarantine pest, but the SEWG makes no recommendation on the removal of the quarantine pest status. Moreover an alternative to the listing under the RNQP Status could be to recommend, in the risk management measures for tomato, isolation from other potential sources of infection, including other infected host plants. **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
No  
Proposed Tolerance levels:
 
 **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
No  
Proposed Risk management measure:
 
 **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2011) Scientific Opinion on the assessment of the risk of solanaceous pospiviroids for the EU territory and the identification and evaluation of risk management options. EFSA Journal 2011;9(8):2330 [132 pp.]. doi:10.2903/j.efsa.2011. 2330; www.efsa.europa.eu/efsajournal;
* MAF (2012) Import Risk Analysis: Tomato and Capsicum seed for sowing from all countries. Ministry of Agriculture and Forestry of New-Zealand, Information Bureau. Available at: <http://www.mpi.govt.nz/document-vault/2887>;

HOST PLANT N°6: Solanum tuberosum (SOLTU) for the Seed potato sector.

Origin of the listing:
 
PM 4/28 (1)  
Plants for planting:
 
Plants intended for planting, other than [true] seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**
 
Yes 
Conclusion:
 
Qualified  
 
Justification (if necessary):
 
Remark: This pest is considered to be already a quarantine pest for the whole EU (annex IA1 of the directive 2000/29/EC). However, in view of its presence in the EU (see data of the presence of this pest on the EU territory available in EPPO Global Database: <https://gd.eppo.int/>), classification within the directive should be revised. This pest was not submitted for evaluation by the European Commission in the context of the EU RNQP Project but was submitted by the Working Party on Phytosanitary Regulation (WPPR, 2016). **CONCLUSION ON THE STATUS:**
 
Recommended for listing as an RNQP, based on EPPO PM 4 Standard, if the Quarantine Pest Status is changed. Evaluation is performed for the EPPO region. The SEWG is not competent to advise on whether the quarantine status of this organism should be changed, and is not recommending any such change. If the quarantine status of the organism were to change based on its distribution within relevant parts of the EPPO region then it would clearly qualify for RNQP status. **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
No  
Proposed Tolerance levels:
 
Zero tolerance for all categories (Nuclear stock, Pre-Basic, Basic and Certified). **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
No  
Proposed Risk management measure:
 
Nuclear stock (zero tolerance by testing):  
This material should be tested or derived from mother plants which have been tested (it is particularly important to check that starting material is free);  
  
Prebasic and basic material:  
No symptoms should have been seen at the place of production since the last complete cycle of vegetation or, for each lot, post-harvest testing of tubers should be performed. Lots testing positive should not be marketed as seed potatoes.  
  
Certified material:  
Zero tolerance by visual inspection (testing in case any symptoms are seen);  
  
The SEWG also recommended that occurrence should continue to be reported to EPPO so that the effect of any change of status can be monitored.  
Justification (if necessary):
 
Symptoms may be seen in the growing crop or in tubers, but in some varieties the pathogen may be latent for several generations. **REFERENCES:**

* EFSA Panel on Plant Health (PLH) (2011) Scientific Opinion on the assessment of the risk of solanaceous pospiviroids for the EU territory and the identification and evaluation of risk management options. EFSA Journal 2011;9(8):2330 [132 pp.]. doi:10.2903/j.efsa.2011. 2330; www.efsa.europa.eu/efsajournal;