NAME OF THE ORGANISM: Shallot latent virus (SLV000)

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: Vegetable propagating and planting material (other than seeds) sector

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

Not relevant
Conclusion:

* Candidate: Vegetable propagating and planting material (other than seeds) 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):

This pest was dentified in the Netherlands and Denmark, but similar viruses were recorded from England and France. It probably occurs world-wide (Bos, 1982). The pest has also been seen in Belgium, Czech Republic, Greece and Italy during reference searches.

HOST PLANT N°1: Allium cepa (ALLCE) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

RNQP Questionnaire
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:

SLV has been isolated from onion (Bos, 1982) but no further details or references are available, so it does not appear to be a major host. This virus is transmissible in a non-persistent manner by Myzus ascalonicus and perhaps by Aphis fabae, but not by M. persicae (Bos, 1982; Brunt et al., 1996) from other infected Allium crops or overwintered discarded plants. Material can be cleaned of infection by combining in vitro thermotherapy and meristem culture.
In conclusion, onions are usually grown from seed or sets and therefore infected sets are a pathway if not produced under secure-aphid free conditions. If cultivation, removal of discarded overwintering bulbs, debris and aphid control precautions have been effectively carried out in the surrounding area, sets could be considered a significant pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

SLV has been recorded once in onion (Bos, 1982). No references to an economic impact of SLV in Allium cepa could be found. A potential economic impact is only foreseen in combination with other viruses (Loebenstein & Lecoq, 2012).
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

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

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?

Conclusion:

Not candidate
Justification:

Experts concluded that Economic impact is considered acceptable. **CONCLUSION ON THE STATUS:**

Disqualified: economic impact is considered acceptable. The pest will be covered by the general 'substantially free from' requirement. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Not recommended for the RNQP status. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Not recommended for the RNQP status. **REFERENCES:**

* Bos L (1982) Descriptions of plant Viruses Shallot latent virus. Research Institute for Plant Protection, Wageningen, The Netherlands. Available at: <http://www.dpvweb.net/dpv/showdpv.php?dpvno=250>;
* Brunt A A, Crabtree K, Dallwitz M J, Gibbs A J, Watson L. & Zurcher E J (1996 onwards) Plant Viruses Online: Descriptions and Lists from the VIDE Database. Version: 16th January 1997. Available at <http://sdb.im.ac.cn/vide/descr716.htm>;
* Loebenstein G & Lecoq H (2012) Advances in virus research, volume 84. Viruses and Virus Diseases of Vegetables in the Mediterranean Basin. Academic Press. Elsevier. First edition;

HOST PLANT N°2: Allium cepa Aggregatum types (Allium ascalonicum) (ALLAS) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

RNQP Questionnaire
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:

SLV may occur in combination with other viruses. The virus is transmissible in a non-persistent manner by Myzus ascalonicus and perhaps by Aphis fabae, but not by M. persicae (Bos 1982, Brunt et al., 1996) from other infected Allium crops or overwintered discarded plants. Material can be cleaned of infection by combining in vitro thermotherapy and meristem culture.
In conclusion, shallots are usually grown from bulbs and therefore infected bulbs are a pathway if not produced under secure-aphid free conditions. If cultivation, removal of discarded overwintering bulbs, debris and aphid control precautions have been effectively carried out in the surrounding area, plants for planting could be considered a significant pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

The virus occurs, apparently symptomlessly, in shallot (Allium cepa Aggregatum types), but virus-free plants were not available for comparison of infected with healthy plants (Bos, 1982). In Slovenia it was found in shallot plants with virus symptoms, together with OYDV but it was not clear if symptoms in different plants were caused by SLV alone or in combination with OYDV (Mavrič et al, 1999). In a publication it was found that SLV does not appear to exert any influence on the yield (Messiaen et al., 1993). In conclusion, SLV is not considered to have an economic impact in shallot in the absence of other Allium viruses.
It should be noted there are also some other viruses of shallot (Shallot mite-borne latent virus and Shallot virus X) which are not listed specifically by the directive.
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Minimal
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?

No
Conclusion:

Not candidate
Justification:

Experts concluded that Economic impact is considered acceptable. **CONCLUSION ON THE STATUS:**

Disqualified: economic impact is considered acceptable. The pest will be covered by the general 'substantially free from' requirement. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Not recommended for the RNQP status. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Not recommended for the RNQP status. **REFERENCES:**

* Bos L (1982) Descriptions of plant Viruses. Shallot latent virus. Research Institute for Plant Protection, Wageningen, The Netherlands. Available at: <http://www.dpvweb.net/dpv/showdpv.php?dpvno=250>;
* Brunt AA, Crabtree K, Dallwitz M J, Gibbs A J, Watson L & Zurcher E J (1996 onwards) Plant Viruses Online: Descriptions and Lists from the VIDE Database. Version: 16th January 1997. Available at: <http://sdb.im.ac.cn/vide/descr716.htm>;
* Mavrič I, Mirkovič V & Ravnikar M (1999) Virus infections of Allium. Zbornik predavanj in referatov 4. Slovenskega Posvetovanja o Varstvu Rastlin v Portorožu od 3. do 4. pp.45-50;
* Messiaen JM, Leroux JP, Pichon M & Beyries A (1993) "les allium alimentaires reproduits par voie végétative" du labo au terrain. Edition INRA;

HOST PLANT N°3: Allium fistulosum (ALLFI) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

RNQP Questionnaire
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:

SLV has been recorded in A. fistulosum, Welsh Onion, but only in China (Deng et al., 2003). This virus is transmissible in a non-persistent manner by Myzus ascalonicus and perhaps by Aphis fabae, but not by M. persicae (Bos 1982, Brunt et al., 1996) from other infected Allium crops or overwintered discarded plants. Material can be cleaned of infection by combining in vitro thermotherapy and meristem culture.
In conclusion, A. fistulosum, Welsh Onion is usually propagated by young plants grown from seed for transplanting or sets/split plants so these are both pathways if not produced under secure-aphid free conditions. If cultivation, removal of discarded overwintering bulbs, debris and aphid control precautions have been effectively carried out in the surrounding area, infected transplants or bulbs could be considered the main pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

SLV has been recorded in A. fistulosum, Welsh Onion, but only in China and a yield trial showed that the growth of healthy plants were significantly better than SLV-infected plants in terms of plant height, plant weight, and stem diameter (Deng et al., 2003). An unacceptable economic impact is only foreseen in combination with other viruses (Loebenstein & Lecoq, 2012).
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Minimal
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?

No
Conclusion:

Not candidate
Justification:

Experts concluded that Economic impact is considered acceptable. **CONCLUSION ON THE STATUS:**

Disqualified: economic impact is considered acceptable. The pest will be covered by the general 'substantially free from' requirement. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Not recommended for the RNQP status. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Not recommended for the RNQP status. **REFERENCES:**

* Bos L (1982) Descriptions of plant Viruses Shallot latent virus. Research Institute for Plant Protection, Wageningen, The Netherlands. Available at: <http://www.dpvweb.net/dpv/showdpv.php?dpvno=250>;
* Brunt A A, Crabtree K, Dallwitz M J, Gibbs A J, Watson L. & Zurcher E J (1996 onwards) Plant Viruses Online: Descriptions and Lists from the VIDE Database. Version: 16th January 1997. Available at <http://sdb.im.ac.cn/vide/descr716.htm>;
* Deng TC, Liao JY & Yang HY (2003) The incidence of shallot latent virus and its effect on the growth of green onion in Yilan area. Plant Pathology Bulletin 12, 191-198;
* Loebenstein G & Lecoq H (2012) Advances in virus research, volume 84. Viruses and Virus Diseases of Vegetables in the Mediterranean Basin. Academic Press. Elsevier. First edition;

HOST PLANT N°4: Allium porrum (ALLPO) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

RNQP Questionnaire
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:

This virus is transmissible in a non-persistent manner by Myzus ascalonicus and perhaps by Aphis fabae, but not by M. persicae (Bos, 1982; Brunt et al., 1996) from other Allium crops or overwintered discarded plants. Plant material can be cleaned of infection by combining in vitro thermotherapy and meristem culture.
In conclusion, leeks are usually grown from seed, though whether it is seed transmissible it is not clear from the literature. However seedlings for transplanting could become infected via aphid transmission from infected hosts if not produced in contained secure environments, so seedlings could be considered a significant pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

This virus causes mild chlorotic streaking in leek (A. porrum) when occurring alone, and severe chlorotic or white streaking and even plant death in some cultivars of leek when in complex with leek yellow stripe virus (Bos, 1982). No further details of its impact alone in leek could be found, however it has an apparent economic impact in combination with other viruses (Loebenstein & Lecoq, 2012).
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Minimal
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?

No
Conclusion:

Not candidate
Justification:

Experts concluded that Economic impact is considered acceptable. **CONCLUSION ON THE STATUS:**

Disqualified: economic impact is considered acceptable. The pest will be covered by the general 'substantially free from' requirement. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Not recommended for the RNQP status. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Not recommended for the RNQP status. **REFERENCES:**

* Bos L (1982) Descriptions of plant Viruses Shallot latent virus. Research Institute for Plant Protection, Wageningen, The Netherlands. Available at: <http://www.dpvweb.net/dpv/showdpv.php?dpvno=250>;
* Brunt A A, Crabtree K, Dallwitz M J, Gibbs A J, Watson L. & Zurcher E J (1996 onwards) Plant Viruses Online: Descriptions and Lists from the VIDE Database. Version: 16th January 1997. Available at <http://sdb.im.ac.cn/vide/descr716.htm>;
* Loebenstein G & Lecoq H (2012) Advances in virus research, volume 84. Viruses and Virus Diseases of Vegetables in the Mediterranean Basin. Academic Press. Elsevier. First edition;

HOST PLANT N°5: Allium sativum (ALLSA) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

RNQP Questionnaire
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:

This virus is transmissible in a non-persistent manner by Myzus ascalonicus and perhaps by Aphis fabae, but not by M. persicae (Bos, 1982; Brunt et al., 1996) from other infected Allium crops or overwintered discarded plants. A number of recent references have found infection in garlic, A. sativum (e.g. Sun XinYan et al., 2016; Oleas & Arahana, 2016). SLV is often found in combination with other Allium viruses e.g. with LYSV and OYDV in garlic (Oleas & Arahana 2016). Material can be cleaned of infection by combining in vitro thermotherapy and meristem culture.
In conclusion, garlic is usually propagated by cloves or sometimes from seed for young plants for transplanting so these are both pathways if not produced under secure-aphid free conditions. If cultivation, removal of discarded overwintering bulbs, debris and aphid control precautions have been effectively carried out in the surrounding area, young plants for transplanting or garlic cloves could be considered a significant pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

SLV is another Carlavirus that predominates in Asia (Lot & Delécolle, 1996). No references to the impact of SLV infection alone in garlic could be found but symptomatic plants showing mild to severe chlorotic streaking and leaf curling were seen in mixed infections with Leek yellow stripe virus and Onion yellow dwarf virus (Oleas & Arahana, 2016). The production of garlic (Allium sativum) in Mexico has become reduced due the infections caused by viruses of which SLV was mentioned as being detected along with other viruses (Pérez-Moreno et al., 2010) and in Argentina garlic is affected by a viral mixture including mainly Potyvirus, Carlavirus and Allexivirus which causes a 78% bulb weight reduction (Conci et al., 2005). Its symptoms and impact on yields are usually negligible, but its variability is greater than the variability of GCLV, which makes its detection more uncertain (Lot & Delécolle, 1996). An unacceptable economic impact is only foreseen in combination with other viruses (Loebenstein & Lecoq, 2012).
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Minimal
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?

No
Conclusion:

Not candidate
Justification:

Experts concluded that Economic impact is considered acceptable. **CONCLUSION ON THE STATUS:**

Disqualified: economic impact is considered acceptable. The pest will be covered by the general 'substantially free from' requirement. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Not recommended for the RNQP status. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Not recommended for the RNQP status. **REFERENCES:**

* Bos L (1982) Descriptions of plant Viruses Shallot latent virus. Research Institute for Plant Protection, Wageningen, The Netherlands. Available at: <http://www.dpvweb.net/dpv/showdpv.php?dpvno=250>
* Brunt A A, Crabtree K, Dallwitz M J, Gibbs A J, Watson L & Zurcher E J (1996 onwards) Plant Viruses Online: Descriptions and Lists from the VIDE Database. Version: 16th January 1997. Available at: <http://sdb.im.ac.cn/vide/descr716.htm>;
* Conci VC, Perotto MC, Cafrune E & Lunello P (2005) Program for intensive production of virus-free garlic plants. Acta Horticulturae 688, 195-200;
* Loebenstein G & Lecoq H (2012) Advances in virus research, volume 84. Viruses and Virus Diseases of Vegetables in the Mediterranean Basin. Academic Press. Elsevier. First edition;
* Lot H & Delécolle B (1996) Les virus de l'Ail : état de la recherche et moyens de lutte. INRA, Pathologie végétale, domaine Saint-Maurice, 84143 Montfavet cedex;
* Oleas A & Arahana V (2016) First report of Leek yellow stripe virus, Shallot latent virus, and Onion yellow dwarf virus in garlic from Ecuador. Plant Disease 100, 232;
* Pérez-Moreno L, Navarro-León MJ, Ramírez-Malagón R & Mendoza-Celedón B (2010) Impact and identification of phytopathogenic viruses on yield and quality of garlic (Allium sativum L) in the state of Guanajuato, Mexico. Revista Mexicana de Fitopatología 28, 97-110;
* Sun XinYan, Shi YaJuan, Wang ZhenYue, Yan ZhaoLing, Sun Hu & Shi Yan (2016) Molecular detection of garlic virus disease in Henan Province. Journal of Henan Agricultural Sciences 45, 102-105;