NAME OF THE ORGANISM: Ditylenchus dipsaci (DITYDI)

GENERAL INFORMATION ON THE PEST

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

Pest category:

Nematoda **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, Ornamental sector, Fruits (including hops) sector, Vegetable seed sector, Fodder plant seed 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, Ornamental sector, Fruits (including hops) sector, Vegetable seed sector, Fodder plant seed sector

Justification (if necessary):

Remark for ornamentals:
- Allium: There is a large number of Allium species (and within the species, varieties) that are used as ornamentals.
Therefore it is suggested to include all Allium for ornamental use in the present evaluation.
- Ismene (host plant for D. dipsaci as mentioned in Directive 2000/29/EC) is nowadays named Hymenocallis for cultivated ornamental species and varieties. **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 (1993); Belgium (2007); Bulgaria (1993); Croatia (1996); Cyprus (1993); Czech Republic (1994); Denmark (1993); Estonia (1994); Finland (1993); France (2010); Germany (2014); Greece (1996); Hungary (2001); Ireland (1998); Italy (1992); Italy/Sicilia (2002); Latvia (2013); Lithuania (1998); Malta (1995); Netherlands (2015); Poland (2012); Portugal (1992); Portugal/Azores (1994); Romania (2011); Slovakia (2007); Slovenia (2003); Spain (2007); Sweden (1993); United Kingdom (1993); United Kingdom/England (1994); United Kingdom/Scotland (1994)
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: Allium (1ALLG) for the Ornamental sector.

Origin of the listing:

Ornamental SEWG
Plants for planting:

Plants for planting (including seeds and bulbs) **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 literature and Google search for species of Allium being used as an ornamental plant, as opposed to a vegetable plant, did not locate any specific references. For Allium species used as vegetable crop, more information is available on the pathway. E.g. transmission of D. dipsaci from infested seed to young seedlings for transplanting is well established and planting nematode-free transplants and onion sets is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
There is a large number of Allium species (and within the species, varieties) that are used as ornamental (e.g. search for 'Allium' on the following database: <http://www.internationalplantnames.com/HTML/English/index_zoek.htm>). The Dutch Flowerbulb Inspection Service BKD has included all ornamental Alliums in their inspection with the same standards as the other ornamental flower bulbs on which D. dipsaci is currently regulated. It is suggested to consider that all Allium species, with ornamental varieties, are host plants and are a significant pathway compare to other pathways when suitable control measures are carried out for the alternative inoculum sources. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

No
Justification:

Documentation is only available on Allium species used as vegetable propagating material. Allium belongs tot the family of Amaryllidaceae.
Symptoms of infestation in Amaryllidaceae are similar to those in Narcissus spp.; for example, Galanthus spp. show swellings on their leaves and concentric, brown rings in bulbs (IPPC, 2016).
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:

Experts considered that the evaluation could be extrapolated from vegetable Allium species and experiences of the Dutch Flowerbulb Inspection Service. They commented that there is probably some variation in susceptibility depending on the species. **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 from vegetable Allium, even though there may be some variation in terms of susceptibility depending on the species. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°2: Allium cepa (ALLCE) for the Ornamental sector.

Origin of the listing:

IIA2AWG
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):**

No
Conclusion:

Not candidate

Justification:

A literature and Google search for this species (Allium cepa - onion), being used as an ornamental plant, as opposed to a vegetable plant, did not locate any references. The analysis of the RNQP status continues on the whole Allium genus for ornamental purpose (see corresponding summary sheet). **CONCLUSION ON THE STATUS:**

Disqualified: evaluation of the RNQP status continues for the whole Allium genus (see corresponding summary sheet). **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting (Covered by the listing of the whole Allium genus). **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting (Covered by the listing of the whole Allium genus). **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;

HOST PLANT N°3: Allium cepa (ALLCE) for the Vegetable seed sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Seeds and bulbs 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 survey of commercial seeds samples in the UK showed its occurrence in >3% of seed stocks of onions. Seed transmission of D. dipsaci to the planted crop is well established and planting certified nematode-free seeds is recognized as an important control practice for this disease. In Germany, a tolerance level of five nematodes/300 seeds is used to establish the risk of transmission of the pathogen to seedlings. Seed infestation can be controlled by chemical or hot-water seed treatments and by seed health tests to remove infested stocks.
Other sources of infection are nematode-infested soil, infested debris and D. dipsaci-infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion seed is a pathway, and with suitable control measures carried out for the alternative inoculum sources, seed can be considered a significant pathway compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

D. dipsaci is one of the most devastating plant-parasitic nematodes, especially in temperate regions. Without control, it can cause complete failure of host crops such as onions and garlic. In Italy up to 60% of onion seedlings died before reaching the transplantation stage. Penetration of onion leaves by D. dipsaci causes leaf deformation and leaf swellings or blister-like areas on the surface. The leaves grow in a disorderly fashion, often hang as if wilted and become chlorotic. Young plants can be killed by high infestations. The inner scales of the bulb are usually more severely attacked than the outer scales. As the season advances the bulbs become soft and when cut open show browning of the scales in concentric circles (CABI 2015).
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:

 **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 (regardless of whether seed or vegetatively propagated). **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Zero tolerance approach, based on visual examination, treatment and/or testing. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Seeds:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The harvested seeds have then been found to be free of Ditylenchus dipsaci after laboratory tests on a representative sample;
or
(c) The planting material has been subjected to an appropriate chemical or physical treatment against Ditylenchus dipsaci and the seeds have then been found to be free of this pest after laboratory tests on a representative sample. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

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

Origin of the listing:

IIA2AWG and 2 - Vegetable seedling sector: Commission Directive 93/61/EC
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:

Transmission of D. dipsaci from infested seed to young seedlings for transplanting is well established and planting nematode-free transplants and onion sets is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or sets are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and onion sets can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

D. dipsaci is one of the most devastating plant-parasitic nematodes, especially in temperate regions. Without control, it can cause complete failure of host crops such as onions and garlic. In Italy up to 60% of onion seedlings died before reaching the transplantation stage. Penetration of onion leaves by D. dipsaci causes leaf deformation and leaf swellings or blister-like areas on the surface. The leaves grow in a disorderly fashion, often hang as if wilted and become chlorotic. Young plants can be killed by high infestations. The inner scales of the bulb are usually more severely attacked than the outer scales. As the season advances the bulbs become soft and when cut open show browning of the scales in concentric circles (CABI 2015).
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:

 **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 (regardless of whether seed or vegetatively propagated). **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Zero tolerance approach, based on visual examination, treatment and/or testing. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Plants for further propagation:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and not more than 2% of plants have shown symptoms of Ditylenchus dipsaci infestation, those plants have been rogued out immediately, and the planting material has then been found to be free of this pest after laboratory tests on a representative sample;
or
(c) The planting material has been subjected to an appropriate chemical or physical treatment against Ditylenchus dipsaci and the planting material has been found to be free of this pest after laboratory tests on a representative sample.

Plants for production of a commercial crop:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and plants showing symptoms of Ditylenchus dipsaci have been rogued out immediately, and the planting material has then been found to be free of this pest after laboratory tests on a representative sample;
or
(c) The planting material has been subject to an appropriate physical or chemical treatment and the planting material has been found to be free of Ditylenchus dipsaci after laboratory tests on a representative sample. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°5: Allium cepa Aggregatum types (Allium ascalonicum) (ALLAS) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

IIA2AWG and 2 - Vegetable seedling sector: Commission Directive 93/61/EC
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:

Transmission of D. dipsaci from infested seed to young seedlings, or on shallot bulbs (sets) for transplanting is well established and planting nematode-free transplants and shallot bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015). In conclusion young plants for transplanting or shallot bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and shallot bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

?
Justification:

No specific references to economic impacts on shallot crops could be found. Experts considered that impact is minor.
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?

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:

 **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 (regardless of whether seed or vegetatively propagated). **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Zero tolerance approach, based on visual examination, treatment and/or testing. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Plants for further propagation:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and not more than 2% of plants have shown symptoms of Ditylenchus dipsaci infestation, those plants have been rogued out immediately, and the planting material has then been found to be free of this pest after laboratory tests on a representative sample;
or
(c) The planting material has been subjected to an appropriate chemical or physical treatment against Ditylenchus dipsaci and the planting material has been found to be free of this pest after laboratory tests on a representative sample.

Plants for production of a commercial crop:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and plants showing symptoms of Ditylenchus dipsaci have been rogued out immediately, and the planting material has then been found to be free of this pest after laboratory tests on a representative sample;
or
(c) The planting material has been subject to an appropriate physical or chemical treatment and the planting material has been found to be free of Ditylenchus dipsaci after laboratory tests on a representative sample; **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°6: Allium cepa Aggregatum types (Allium ascalonicum) (ALLAS) for the Ornamental sector.

Origin of the listing:

IIA2AWG
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):**

No
Conclusion:

Not candidate

Justification:

A literature and Google search for this species (Allium cepa Aggregatum types - shallot) also being used as an ornamental plant, as opposed to a vegetable plant, did not locate any references. The analysis of the RNQP status continues on the whole Allium genus for ornamental purpose (see corresponding summary sheet). **CONCLUSION ON THE STATUS:**

Disqualified: evaluation of the RNQP status continues for the whole Allium genus (see corresponding summary sheet). **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting (Covered by the listing of the whole Allium genus). **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting (Covered by the listing of the whole Allium genus). **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°7: Allium cepa Aggregatum types (Allium ascalonicum) (ALLAS) for the Vegetable seed sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Seeds and bulbs 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 survey of commercial seeds samples in the UK showed its occurrence in 14-17% of seed stocks of shallots. Seed transmission of D. dipsaci to the planted crop is well established and planting certified nematode-free seeds is recognized as an important control practice for this disease. In Germany, a tolerance level of five nematodes/300 seeds is used to establish the risk of transmission of the pathogen to seedlings. Seed infestation can be controlled by chemical or hot-water seed treatments and by seed health tests to remove infested stocks.
Other sources of infection are nematode-infested soil, infested debris and D. dipsaci-infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion seed is a pathway, and with suitable control measures carried out for the alternative inoculum sources, seed can be considered a significant pathway compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

?
Justification:

No specific references to economic impacts on shallot crops could be found. Experts considered that impact is minor.
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?

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:

 **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 (regardless of whether seed or vegetatively propagated). **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Zero tolerance approach, based on visual examination, treatment and/or testing. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Seeds:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The harvested seeds have then been found to be free of Ditylenchus dipsaci after laboratory tests on a representative sample;
or
(c) The planting material has been subjected to an appropriate chemical or physical treatment against Ditylenchus dipsaci and the seeds have then been found to be free of this pest after laboratory tests on a representative sample. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°8: Allium fistulosum (ALLFI) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

2 - Vegetable seedling sector: Commission Directive 93/61/EC
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:

Transmission of D. dipsaci from infested seed to young seedlings for transplanting is well established and planting nematode-free transplants and sets/split plants of A fistulosum is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015). In conclusion young plants for transplanting or sets/split plants are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and sets/split plants can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

D. dipsaci is one of the most devastating plant-parasitic nematodes, especially in temperate regions. Without control, it can cause complete failure of host crops such as onions and garlic, however A fistulosum is more resistant. Penetration of leaves by D. dipsaci causes leaf deformation and leaf swellings or blister-like areas on the surface. The leaves grow in a disorderly fashion, often hang as if wilted and become chlorotic. Young plants can be killed by high infestations. The inner scales of the bulb are usually more severely attacked than the outer scales. As the season advances the bulbs become soft and when cut open show browning of the scales in concentric circles (CABI 2015).
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?

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:

 **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:**

Not recommended for listing as an RNQP: This pest/host/intended use combination meets all the criteria for RNQP status but the requirement for absence of visual symptoms on the traded material (current general 'Substantially free from' requirement in the EU) is considered to be sufficient. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Delisting. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°9: Allium porrum (ALLPO) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

IIA2AWG and 2 - Vegetable seedling sector: Commission Directive 93/61/EC
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:

Transmission of D. dipsaci from infested seed to young seedlings for transplanting is well established and planting nematode-free transplants of leek is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants of leek for transplanting is a pathway, and with suitable control measures carried out for the alternative inoculum sources, plants can be considered as significant pathway compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

D. dipsaci is one of the most devastating plant-parasitic nematodes, especially in temperate regions. Without control, it can cause complete failure of host crops such as onions and leek. Penetration of leaves by D. dipsaci causes leaf deformation and leaf swellings or blister-like areas on the surface. The leaves grow in a disorderly fashion, often hang as if wilted and become chlorotic. Young plants can be killed by high infestations. The inner scales of the bulb are usually more severely attacked than the outer scales. As the season advances the stems become soft and when cut open show browning of the scales in concentric circles (CABI 2015).
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:

 **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:**

Not recommended for listing as an RNQP: This pest/host/intended use combination meets all the criteria for RNQP status but the requirement for absence of visual symptoms on the traded material (current general 'Substantially free from' requirement in the EU) is considered to be sufficient. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°10: Allium porrum (ALLPO) for the Vegetable seed sector.

Origin of the listing:

IIA2AWG
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:

A survey of commercial seeds samples in the UK showed its occurrence in >3% of seed stocks of leeks. Seed transmission of D. dipsaci to the planted crop is well established and planting certified nematode-free seeds is recognized as an important control practice for this disease. In Germany, a tolerance level of five nematodes/300 seeds is used to establish the risk of transmission of the pathogen to seedlings. Seed infestation can be controlled by chemical or hot-water seed treatments and by seed health tests to remove infested stocks.
Other sources of infection are nematode-infested soil, infested debris and D. dipsaci-infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion seed is a pathway, and with suitable control measures carried out for the alternative inoculum sources, seed can be considered a significant pathway compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

D. dipsaci is one of the most devastating plant-parasitic nematodes, especially in temperate regions. Without control, it can cause complete failure of host crops such as onions and garlic. Penetration of onion leaves by D. dipsaci causes leaf deformation and leaf swellings or blister-like areas on the surface. The leaves grow in a disorderly fashion, often hang as if wilted and become chlorotic. Young plants can be killed by high infestations. The inner scales of the bulb are usually more severely attacked than the outer scales. As the season advances the bulbs become soft and when cut open show browning of the scales in concentric circles (CABI 2015).
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:

 **7- Is the quality of the data sufficient to recommend the pest to be listed as a RNQP?**

Conclusion:

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 approach, based on visual examination, treatment and/or testing. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Seeds:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The harvested seeds have then been found to be free of Ditylenchus dipsaci after laboratory tests on a representative sample;
or
(c) The planting material has been subjected to an appropriate chemical or physical treatment against Ditylenchus dipsaci and the seeds have then been found to be free of this pest after laboratory tests on a representative sample. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°11: Allium porrum (ALLPO) for the Ornamental sector.

Origin of the listing:

IIA2AWG
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):**

No
Conclusion:

Not candidate

Justification:

A literature and Google search for this species (Allium porrum - leek), being used as an ornamental plant, as opposed to a vegetable plant, did not locate any references. The analysis of the RNQP status continues on the whole Allium genus for ornamental purpose (see corresponding summary sheet). **CONCLUSION ON THE STATUS:**

Disqualified: evaluation of the RNQP status continues for the whole Allium genus (see corresponding summary sheet). **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting (Covered by the listing of the whole Allium genus). **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting (Covered by the listing of the whole Allium genus). **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°12: Allium sativum (ALLSA) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

2 - Vegetable seedling sector: Commission Directive 93/61/EC
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:

Transmission of D. dipsaci from infested seed to young seedlings, or on garlic cloves for transplanting is well established and planting nematode-free transplants and cloves is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015). In conclusion young plants for transplanting or garlic cloves are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and garlic cloves can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

D. dipsaci is one of the most devastating plant-parasitic nematodes, especially in temperate regions. Without control, it can cause complete failure of host crops such as onions and garlic. Penetration of leaves by D. dipsaci causes leaf deformation and leaf swellings or blister-like areas on the surface. The leaves grow in a disorderly fashion, often hang as if wilted and become chlorotic. Young plants can be killed by high infestations. The inner scales of the bulb are usually more severely attacked than the outer scales. As the season advances the bulbs become soft and when cut open show browning of the scales in concentric circles (CABI 2015). Compared to healthy garlic bulbs, infected garlic bulbs are smaller, present a damaged skin and cloves and do not keep well (EU COM, 2016).
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:

 **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. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Zero tolerance approach, based on visual examination, treatment and/or testing. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Plants for further propagation:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and not more than 2% of plants have shown symptoms of Ditylenchus dipsaci infestation, those plants have been rogued out immediately, and the planting material has then been found to be free of this pest after laboratory tests on a representative sample;
or
(c) The planting material has been subjected to an appropriate chemical or physical treatment against Ditylenchus dipsaci and the planting material has been found to be free of this pest after laboratory tests on a representative sample.

Plants for production of a commercial crop:
(a) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and no symptoms of Ditylenchus dipsaci have been observed;
or
(b) The crop has been inspected at least once at an appropriate time since the beginning of the last complete cycle of vegetation and plants showing symptoms of Ditylenchus dipsaci have been rogued out immediately, and the planting material has then been found to be free of this pest after laboratory tests on a representative sample;
or
(c) The planting material has been subject to an appropriate physical or chemical treatment and the planting material has been found to be free of Ditylenchus dipsaci after laboratory tests on a representative sample; **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;

HOST PLANT N°13: Allium schoenoprasum (ALLSC) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

IIA2AWG
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:

Only one record was found for D. dipsaci being a pest of chives (Monnet & Thibault, 2003). Transmission of D. dipsaci from infested seed to young seedlings for transplanting is well established and planting nematode-free transplants and split plants of A. schoenoprasum is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015). In conclusion young plants for transplanting split plants are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and split plants can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

?
Justification:

In one record, D. dipsaci is described as a pest of chives in France (Monnet & Thibault, 2003). It is indicated that the pest can cause leaf deformation and dwarfism of the plant.
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?

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:

 **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:**

Not recommended for listing as an RNQP: This pest/host/intended use combination meets all the criteria for RNQP status but the requirement for absence of visual symptoms on the traded material (current general 'Substantially free from' requirement in the EU) is considered to be sufficient. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;
* Green CD & Sime S (1979) The dispersal of Ditylenchus dipsaci with vegetable seeds. Annals of Applied Biology 92 No.2, 263-270;
* Monnet Y & Thibault O (2003) Diseases and pests of chives. PHM Revue Horticole 2003 No.444,, 32-33;

HOST PLANT N°14: Allium schoenoprasum (ALLSC) for the Vegetable seed sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Seeds and bulbs 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):**

No
Conclusion:

Not candidate

Justification:

A survey of commercial seeds samples in the UK showed no findings in seed stocks of chive, though the pest was found in other Allium spp. (Green & Sime, 1979). Only one record was found for D. dipsaci being a pest of chives (Monnet & Thibault, 2003). Other sources of infection are nematode-infested soil, infested debris and D. dipsaci-infested weeds. Due to the absence of seed-borne infestation in this host and the availability of other inoculum sources in the environment, it is concluded seed is not a pathway. Also, apart from one record, the host does not appear to be affected by the pest. **CONCLUSION ON THE STATUS:**

Disqualified: a 'Substantially free from' requirement would be sufficient. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;
* Green CD & Sime S (1979) The dispersal of Ditylenchus dipsaci with vegetable seeds. Annals of Applied Biology 92, 263-270;
* Monnet Y & Thibault O (2003) Diseases and pests of chives. PHM Revue Horticole 444, 32-33;

HOST PLANT N°15: Allium schoenoprasum (ALLSC) for the Ornamental sector.

Origin of the listing:

IIA2AWG
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):**

No
Conclusion:

Not candidate

Justification:

A literature and Google search for this species (Allium schoenoprasum), being used as an ornamental plant, as opposed to a vegetable plant, did not locate any references. The analysis of the RNQP status continues on the whole Allium genus for ornamental purpose (see corresponding summary sheet). **CONCLUSION ON THE STATUS:**

Disqualified: evaluation of the RNQP status continues for the whole Allium genus (see corresponding summary sheet) **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting (Covered by the listing of the whole Allium genus). **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting (Covered by the listing of the whole Allium genus). **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;
* Green CD & Sime S (1979) The dispersal of Ditylenchus dipsaci with vegetable seeds. Annals of Applied Biology 92 No.2, 263-270;
* Monnet Y & Thibault O (2003) Diseases and pests of chives. PHM Revue Horticole 2003 No.444,, 32-33;

HOST PLANT N°16: Camassia (1CDSG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

As a member of the Asparagaceae, [presumably] bulb symptoms are the same as in Narcissus spp., but distinct swellings are not usually seen on the plant leaves. The foliage may show pale yellow streaks, distortion and often slight swelling (IPPC, 2016). No references found in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°17: Chionodoxa (1CIXG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

As a member of the Asparagaceae, [presumably] bulb symptoms are the same as in Narcissus spp., but distinct swellings are not usually seen on the plant leaves. The foliage may show pale yellow streaks, distortion and often slight swelling (IPPC, 2016). No references found in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°18: Crocus flavus Weston ‘Golden Yellow’ (Crocus flavus) (CVOFL) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms intended for planting **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

Yes
Conclusion:

Qualified

Justification (if necessary):

D. dipsaci is listed in EPPO PM 4/14(2) Classification scheme for crocus (EPPO, 2002). **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* EPPO (2002) PM 4/14 (2) Classification scheme for crocus. Bulletin OEPP/EPPO Bulletin 32, 123-128;

HOST PLANT N°19: Fragaria (1FRAG) for the Fruits (including hops) sector.

**CONCLUSION ON THE STATUS:**

Not evaluated: from the fruit Marketing Directive (see Terms of reference)

HOST PLANT N°20: Fragaria (1FRAG) for the Fruits (including hops) sector.

**CONCLUSION ON THE STATUS:**

Not evaluated: from the fruit Marketing Directive (see Terms of reference)

HOST PLANT N°21: Fragaria (1FRAG) for the Fruits (including hops) sector.

**CONCLUSION ON THE STATUS:**

Not evaluated: from the fruit Marketing Directive (see Terms of reference)

HOST PLANT N°22: Galanthus (1GAXG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Symptoms of infestation in Amarylliaceae are similar to those in Narcissus spp.; for example, Galanthus spp. show swellings on their leaves and concentric, brown rings in bulbs (IPPC 2016). No references found on any subject in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°23: Galtonia candicans (GAOCA) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

As a member of the Asparagaceae, [presumably] bulb symptoms are the same as in Narcissus spp., but distinct swellings are not usually seen on the plant leaves. The foliage may show pale yellow streaks, distortion and often slight swelling (IPPC, 2016). No references found in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°24: Gladiolus (1GLAG) for the Ornamental sector.

Origin of the listing:

Commission Directive 93/49/EEC
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):**

No
Conclusion:

Not candidate

Justification:

Gladiolus spp. are not given as a host of D. dipsaci in CABI 2015, ISPM 27 (IPPC 2016) or the EPPO Global Database, though a literature search found there are 3 records: of occurrence in greenhouses in Serbia (Grujičić, 2015), in Iraq (Stephan, 1989) and interceptions by India on flower bulbs from Europe (Arjun Lal & Rajan, 2005). In view of possible confusion with D destructor and that these are the only records, it is concluded Gladiolus is not host of this pest. **CONCLUSION ON THE STATUS:**

Disqualified: Gladiolus spp. are not considered to be a significant host and therefore Gladiolus plants are not considered to be a significant pathway. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Arjun Lal & Rajan (2005) Nematodes intercepted in introduced germplasm of horticultural crops. Indian Journal of Plant Protection 33, 282-285;
* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor ISPM 27 ANNEX 8. Available at:
* <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;
* Grujičić G (2015) A contribution to the study of the stem nematode (Ditylenchus dipsaci Kühn) with a view of host plants in Serbia. Zaštita Bilja 66, 53-65;
* Stephan ZA (1989) New hosts for Ditylenchus dipsaci in Iraq. International Nematology Network Newsletter 6, 30;

HOST PLANT N°25: Hyacinthus (1HYAG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms intended for planting **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* ANSES (2013) Avis de l’Agence nationale de sécurité sanitaire de l’alimentation, de l’environnement et du travail relatif à « Demande de complément à l’analyse de risque phytosanitaire sur les nématodes des tiges et bulbes (Ditylenchus dipsaci) sur la luzerne (saisine n°2012-SA-0086). Élargissement aux
* autres végétaux réglementés. Full analysis available at <https://www.anses.fr/fr/system/files/SVEG2012sa0086Ra.pdf>; Resume available at:
* <https://www.anses.fr/fr/system/files/SVEG2013sa0155Ra.pdf>; English translations available;
* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* EPPO (2002) Classification scheme for hyacinth. Bulletin OEPP/EPPO Bulletin 32, 185-190;

HOST PLANT N°26: Hymenocallis (1HMJG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Symptoms of infestation in Amarylliaceae are similar to those in Narcissus spp.; for example, Galanthus spp. show swellings on their leaves and concentric, brown rings in bulbs (IPPC 2016). No references found on any subject in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°27: Medicago sativa (MEDSA) for the Fodder plant seed sector.

Origin of the listing:

IIA2AWG
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:

A high level of variability has been observed in the range of hosts for D. dipsaci populations though for alfalfa it is quite narrow. The parasite can survive for long periods in the soil (for up to two years) and so cropping practices (rotations, chemical treatment of soil), and the usage of resistant varieties (only for alfalfa) can limit its spread and establishment. It is spread mainly via seed, plant debris associated with seed and infected bulbs but spread by natural means (movement through soil, run-off of water, wind) or via human assistance (agricultural machinery, farm scale) is also likely, but would occur at a limited rate (EU COM 2016). During 1972 to 1975 un-cleaned seed samples of lucerne from different areas of France were examined for Ditylenchus dipsaci and at least 13% of lucerne seed samples were infested with a degree of infestation varying depending on the region and the cultivar (Caubel G & Pedron J P, 1999). Movement of nematodes associated with seeds is considered to be the a high-risk pathway for the spread of this pest by Mouttet R et al., 2014 who suggested the 2010 official withdrawal of methyl bromide in Europe. The absence of any alternative chemical (fumigation of contaminated seed batches is no longer possible) makes the production of nematode-free alfalfa seeds difficult and will lead to unmarketable seed batches (Mouttet R et al., 2014). Accurate seed certification is recommended as a way to stop the spread of D. dipsaci on lucerne (Tacconi R et al., 2006). **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

The impact of D. dipsaci observed on alfalfa fodder crops concerns yield losses (limited to significant depending on soil, climate areas and varieties). The impact of D. dipsaci depends on the regions, with southern Europe, in particular, being less affected. The presence of the nematode on seed also causes significant commercial damage due to the risks to the next crop (EU COM, 2016). Persistance of stands is reduced when grown over a few years on infested soils (Griffin 1991). In alfalfa seed crops, the impact observed is related to the rejection of contaminated seed lots that cannot be marketed (EU COM, 2016).
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:

 **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:

Planting disease free seed, field inspections, where crop infected produce not used for seed. Prevent build up of pest through adequate rotation. **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:

Yes
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:

(A) (a) No symptoms of Ditylenchus dipsaci have been observed at the site of production since the beginning of the last complete cycle of vegetation;
and
(b) No main host crops (including Vicia, Allium, Avena & Beta) have been grown in the two preceding years on the site of production;
and
(c) Appropriate hygiene measures have been taken to prevent infestation of the site of production;
OR
(B) (a) No symptoms of Ditylenchus dipsaci have been observed at the site of production since the beginning of the last complete cycle of vegetation;
and
(b) No Ditylenchus dipsaci has been found by laboratory tests on a representative sample;
OR
(C) The seeds have been subjected to an appropriate physical or chemical treatment against Ditylenchus dipsaci and have been found to be free of this pest after laboratory tests on a representative sample.
Justification (if necessary):

The pest is transmissible with machineries. Machineries are usually contracted with external suppliers. Appropriate hygiene measures are needed.
The production of Avena, Vicia faba, or Allium in the same place of production, or the rotation with these high risk crops may pose a risk.
Seeds could be brushed. This can be sufficient not to find the nematode anymore by testing. This would not prevent from any infection, but reduce the inoculum present in the seed lot. Measures should only apply to the site of production (instead of the whole ‘place of production’). ‘Fumigation’ should be replaced by ‘appropriate physical or chemical treatments’. Treatments are combined with a test because of uncertainties about the efficiency of these treatment methods. **REFERENCES:**

* Caubel G & Pedron J P (1976) Geographical distribution of the stem nematode Ditylenchus dipsaci in cultures of forage legumes. Sciences Agronomiques Rennes, 183-188;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;
* Griffin G D (1991) Relationship of Ditylenchus dipsaci and harvest practices to the persistence of alfalfa. Journal of Nematology 23, 306-315; Mouttet R, Escobar-Gutiérrez A, Esquibet M, Gentzbittel L, Mugniéry D, Reignault P, Sarniguet C & Castagnone-Sereno P (2014) Banning of methyl bromide for seed treatment: could Ditylenchus dipsaci again become a major threat to alfalfa production in Europe? Pest Management Science 70, 1017-1022;
* Tacconi R, Santi R & Vincentis F (1999) Control of the nematode Ditylenchus dipsaci on seed of a medical herb. Informatore Fitopatologico 49, 26-27;

HOST PLANT N°28: Muscari (1MUSG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

As a member of the Asparagaceae, [presumably] bulb symptoms are the same as in Narcissus spp., but distinct swellings are not usually seen on the plant leaves. The foliage may show pale yellow streaks, distortion and often slight swelling (IPPC, 2016). No references found in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°29: Narcissus (1NARG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms intended for planting **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

Yes
Conclusion:

Qualified

Justification (if necessary):

D. dipsaci is listed in EPPO PM 4/5(2) Classification scheme for Narcissus (EPPO, 2002). **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* ANSES (2013) Avis de l’Agence nationale de sécurité sanitaire de l’alimentation, de l’environnement et du travail relatif à « Demande de complément à l’analyse de risque phytosanitaire sur les nématodes des tiges et bulbes (Ditylenchus dipsaci) sur la luzerne (saisine n°2012-SA-0086). Élargissement aux
* autres végétaux réglementés. Full analysis available at <https://www.anses.fr/fr/system/files/SVEG2012sa0086Ra.pdf>; Resume available at:
* <https://www.anses.fr/fr/system/files/SVEG2013sa0155Ra.pdf>; English translations available;
* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* EPPO (2002) Certification scheme for Narcissus. Bulletin OEPP/EPPO Bulletin 32, 91–104;

HOST PLANT N°30: Ornithogalum (1OTGG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

As a member of the Asparagaceae, [presumably] bulb symptoms are the same as in Narcissus spp., but distinct swellings are not usually seen on the plant leaves. The foliage may show pale yellow streaks, distortion and often slight swelling (IPPC, 2016). No references found in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°31: Pisum sativum (PIBSX) for the Fodder plant seed sector.

Origin of the listing:

RNQP Questionnaire
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:

A survey of commercial seeds samples in the UK showed its occurrence in >3% of seed stocks of peas. Seed transmission of D. dipsaci to the planted crop is well established and planting certified nematode-free seeds is recognized as an important control practice for this disease. In Germany, a tolerance level of five nematodes/300 seeds is used to establish the risk of transmission of the pathogen to seedlings. Also infestation frequency in pea seeds was evidently low, commonly below the tolerance level, except in 1987, where higher nematode density was found in two samples. Seed infection can be controlled by chemical or hot-water seed treatments and by seed health tests to remove infested stocks.
Nematode-infested soil is also an important inoculum source of D. dipsaci. The pests can also survive in plant debris and in Germany, one third of the sampled faba-bean fields were found to be infested by D. dipsaci, in densities beyond the tolerance threshold of 2-3 nematodes/250 cm3 soil but high densities were rare in non-faba bean fields.
D. dipsaci-infested weeds are also recognized as a potentially important inoculum source of this nematode.
Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015). **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

The pest causes swelling and deformation of stem tissue or lesions, leaf and petiole necrosis and infected seeds are darker, distorted and smaller in size. Heavy infestations often kill the main shoots. D. dispaci induces local necrosis on pea. D. dipsaci sensu lato is one of the most devastating plant-parasitic nematodes, especially in temperate regions and without control, it can cause complete failure of host crops such as legumes (CABI, 2015). D. dipsaci causes severe decline of pea during wet seasons in the Meditteranean basin (Greco & Vito, 1994)
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?

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:

The impact is considered to be acceptable on this host plant. **CONCLUSION ON THE STATUS:**

Disqualified: impact is considered acceptable on this host plant. **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:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;
* Greco N & Vito M (1994) Nematodes of food legumes in the Mediterranean Basin. Bulletin OEPP/EPPO 24, 393-398;

HOST PLANT N°32: Puschkinia (1PUKG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

As a member of the Asparagaceae, [presumably] bulb symptoms are the same as in Narcissus spp., but distinct swellings are not usually seen on the plant leaves. The foliage may show pale yellow streaks, distortion and often slight swelling (IPPC, 2016). No references found in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°33: Ribes (1RIBG) for the Fruits (including hops) sector.

**CONCLUSION ON THE STATUS:**

Not evaluated: from the fruit Marketing Directive (see Terms of reference)

HOST PLANT N°34: Scilla (1SLLG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms 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:

Normally propagated by bulbs or tubers which can be infested by D. dipsaci and planting nematode-free bulbs is recognized as an important control practice for this pest. Other potential sources of infection are nematode-infested soil, infested debris and infested weeds. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion young plants for transplanting or bulbs are both pathways, and with suitable control measures carried out for the alternative inoculum sources, plants and bulbs can be considered as significant pathways compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

As a member of the Asparagaceae, [presumably] bulb symptoms are the same as in Narcissus spp., but distinct swellings are not usually seen on the plant leaves. The foliage may show pale yellow streaks, distortion and often slight swelling (IPPC, 2016). No references found in a literature search for this pest/host combination.
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:

Experts concluded that D. dipsaci is known to cause the same symptoms on Camassia, Chionodoxa, Crocus flavus, Galanthus, Galtonia candicans, Hyacinthus, Ismene, Muscari, Narcissus, Ornithogalum, Puschkinia and Scilla as in Tulipa or Allium (information from the Flower Bulb Inspection Service (BKD) and from the Netherlands Food and Consumer Product Safety Authority (NVWA, the Dutch NPPO)). **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. **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* IPPC (2016) ISPM 27. Diagnostic protocols for regulated pests DP 8: Ditylenchus dipsaci and Ditylenchus destructor. Available at <https://www.ippc.int/static/media/files/publication/en/2016/01/DP_08_2015_En__2015-12-22_Reformatted.pdf>;

HOST PLANT N°35: Sternbergia (1STBG) for the Ornamental sector.

Origin of the listing:

RNQP Questionnaire
Plants for planting:

Bulbs and corms 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:

Sternbergia lutea is a bulbous flowering plant in the family Amaryllidaceae, called winter daffodil, autumn daffodil or yellow autumn crocus. They are stated as being damaged by narcissus eelworm (D. dipsaci) (RHS, 2017). During the Project Sternbergia was stated to be a host plant of D. dipsaci (NL NPPO).
D. dipsaci is currently regulated for many of its host plants but not for Sternbergia. The organism was found in lots of bulbs of Sternbergia, imported from Turkey, in 2004 (Phytosanitary report available at <http://edepot.wur.nl/212728>). The organism does not only pose a threat to the cultivation of Sternbergia but also to other crops because the organism can survive for many years in soil. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

They are stated as being damaged by narcissus eelworm (D. dipsaci) (RHS, 2017). The organism is known to cause major impacts in other host crops, including complete failure of host crops (e.g. onions, garlic, cereals, legumes, strawberries, ornamental plants, especially flower bulbs).
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?

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:

 **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:

Yes
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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* RHS (Royal Horticultural Society) (2017) Sternbergia lutea winter daffodil. Website article. UK. Accessed 27/7/2017 at <https://www.rhs.org.uk/Plants/17789/i-Sternbergia-lutea-i/Details>;

HOST PLANT N°36: Tulipa (1TULG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Bulbs and corms intended for planting **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

Yes
Conclusion:

Qualified

Justification (if necessary):

D. dipsaci is listed in EPPO PM 4/13(2) Classification scheme for tulip (EPPO, 2002). **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:

(a) The plants have been inspected and no symptoms of Ditylenchus dipsaci have been observed on the lot since the beginning of the last complete cycle of vegetation;
or
(b) The bulbs are found substantially free from symptoms of Ditylenchus dipsaci and packed for sale to the final consumer. **REFERENCES:**

* ANSES (2013) Avis de l’Agence nationale de sécurité sanitaire de l’alimentation, de l’environnement et du travail relatif à « Demande de complément à l’analyse de risque phytosanitaire sur les nématodes des tiges et bulbes (Ditylenchus dipsaci) sur la luzerne (saisine n°2012-SA-0086). Élargissement aux
* autres végétaux réglementés. Full analysis available at <https://www.anses.fr/fr/system/files/SVEG2012sa0086Ra.pdf>; Resume available at:
* <https://www.anses.fr/fr/system/files/SVEG2013sa0155Ra.pdf>; English translations available;
* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* EPPO (2002) Classification scheme for Tulip. Bulletin OEPP/EPPO Bulletin 32, 115–121;

HOST PLANT N°37: Vicia faba (VICFX) for the Fodder plant seed sector.

Origin of the listing:

RNQP Questionnaire
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:

A survey of commercial seeds samples in the UK showed its occurrence in 36-45% of seed stocks of broad been, red beet and carrots with up to 67% in a broad bean seed stock being infested. Seed transmission of D. dipsaci to the planted crop is well established and planting certified nematode-free seeds is recognized as an important control practice for this disease. In Germany, incidence varied between 3.3-13.8% per stock and a tolerance level of five nematodes/300 seeds is used to establish the risk of transmission of the pathogen to seedlings of Vicia faba. Seed infection can be controlled by chemical or hot-water seed treatments and by seed health tests to remove infested stocks.
Nematode-infested soil is also an important inoculum source of D. dipsaci. The pests can also survive in plant debris and in Germany, one third of the sampled faba-bean fields were found to be infested by D. dipsaci, in densities beyond the tolerance threshold of 2-3 nematodes/250 cm3 soil, but high densities were rare in non-faba bean fields.
D. dipsaci-infested weeds are also recognized as a potentially important inoculum source of this nematode.
Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015). **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

The pest causes swelling and deformation of stem tissue or lesions, leaf and petiole necrosis and infected seeds are darker, distorted and smaller in size. Heavy infestations often kill the main shoots. On faba bean (V. faba), D. dipsaci induces necrosis or swelling of the tissue and these more severe symptoms are usually induced by the 'giant race', specific to faba bean. According to Hooper (1984), D. gigas n. sp. was much more adapted to the faba bean, able to infect all of his trial plants, and was found in 63% of seeds produced on infected plots. In D. dipsaci sensu stricto infection 82% of plants had stem infection, but only 1.3% of seed infection was recorded. D. dipsaci sensu lato is one of the most devastating plant-parasitic nematodes, especially in temperate regions and without control, it can cause complete failure of host crops such as legumes (CABI, 2015). Incorporating nematicides into pelleted seeds increased yield by 6 to 12% in Belgium, damage caused by the passage of a sprayer was eliminated and it must be assumed that the reduction of D. dipsaci would be reflected in the following rotation crops (Schiffers et al.,1984).
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:

The impact is considered to be acceptable on this host plant. **CONCLUSION ON THE STATUS:**

Disqualified: impact is considered acceptable on this host plant. **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:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;
* Schiffers BC, Fraselle J, Hubrecht F & Jaumin L (1984) The control of Ditylenchus dipsaci (Kuhn) Fil. by nematicides incorporated in pelleted seeds of spring-sown field beans. Mededelingen van de Faculteit Landbouwwetenschappen Rijksuniversiteit, Gent 49, 635-641;

HOST PLANT N°38: Vicia faba (VICFX) for the Vegetable seed sector.

Origin of the listing:

RNQP Questionnaire
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:

A survey of commercial seeds samples in the UK showed its occurrence in 36-45% of seed stocks of broad been, red beet and carrots with up to 67% in a broad bean seed stock being infested. Seed transmission of D. dipsaci to the planted crop is well established and planting certified nematode-free seeds is recognized as an important control practice for this disease. In Germany, incidence varied between 3.3-13.8% per stock and a tolerance level of five nematodes/300 seeds is used to establish the risk of transmission of the pathogen to seedlings of Vicia faba. Seed infection can be controlled by chemical or hot-water seed treatments and by seed health tests to remove infested stocks.
Nematode-infested soil is also an important inoculum source of D. dipsaci. The pests can also survive in plant debris and in Germany, one third of the sampled faba-bean fields were found to be infested by D. dipsaci, in densities beyond the tolerance threshold of 2-3 nematodes/250 cm3 soil, but high densities were rare in non-faba bean fields.
D. dipsaci-infested weeds are also recognized as a potentially important inoculum source of this nematode. Field control can be by rotation, soil solarization or resistant cultivars, however chemical treatments of soil are not economic for large areas (CABI, 2015).
In conclusion seed is a pathway, and with suitable control measures carried out for the alternative inoculum sources, seed can be considered a significant pathway compared to others. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

The pest causes swelling and deformation of stem tissue or lesions, leaf and petiole necrosis and infected seeds are darker, distorted and smaller in size. Heavy infestations often kill the main shoots. On faba bean (V. faba), D. dipsaci induces necrosis or swelling of the tissue and these more severe symptoms are usually induced by the 'giant race', specific to faba bean. D. dipsaci is one of the most devastating plant-parasitic nematodes, especially in temperate regions and without control, it can cause complete failure of host crops such as legumes (CABI, 2015). Incorporating nematicides into pelleted seeds increased yield by 6 to 12% in Belgium, damage caused by the passage of a sprayer was eliminated and it must be assumed that the reduction of D. dipsaci would be reflected in the following rotation crops (Schiffers et al.,1984).
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?

No
Conclusion:

Not candidate
Justification:

 **CONCLUSION ON THE STATUS:**

Disqualified: impact is considered acceptable on this host plant. **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:**

* CABI (Centre for Agricultural Bioscience International) (2015). Online. Datasheets Ditylenchus dipsaci (stem and bulb nematode). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/19287>;
* 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 Ditylenchus dipsaci (Kuhn) Filipvejev;
* Schiffers BC, Fraselle J, Hubrecht F & Jaumin L (1984) The control of Ditylenchus dipsaci (Kuhn) Fil. by nematicides incorporated in pelleted seeds of spring-sown field beans. Mededelingen van de Faculteit Landbouwwetenschappen Rijksuniversiteit, Gent 49, 635-641;