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: Fodder plant seed sector

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

Not relevant
Conclusion:

* Candidate: 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:

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: 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;