NAME OF THE ORGANISM: Sclerotinia sclerotiorum (SCLESC)

GENERAL INFORMATION ON THE PEST

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

Pest category:

Fungi **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: Oil and fibre plants sector

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

Not relevant
Conclusion:

* Candidate: Oil and fibre plants sector

**2 – Status in the EU:**

Is this pest already a quarantine pest for the whole EU?

No
Presence in the EU:

Yes
Conclusion:

candidate
Justification (if necessary):

The pest is present in Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Portugai, Romania, Slovakia, Spain, Sweden, Switzerland and UK (CABI, 2005).

HOST PLANT N°1: Helianthus annuus (HELAN) for the Oil and fibre plants sector.

Origin of the listing:

3 - Oil and fibre plants sector: Council Directive 2002/57/EC
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:

Sclerotinia head rot or stem rot, caused by Sclerotinia sclerotiorum, is a significant disease of sunflower (Helianthus annuus L.) production in most of the world. Resistance is available in some varieties but no line or hybrid is immune to it. It attacks a wide range of field crops, including soybeans, field beans, oilseed rape and lupin as well as various vegetable crops. The pathogen can survive or overwinter as sclerotia in the soil or in field debris etc. and may survive for up to four years in the soil. In summer, when sunflower roots come in contact with the sclerotia, the sclerotia germinates and infects the roots and then grows into the taproot and forms a canker at the stem base. This infection prevents the plant from taking up water and nutrients. Adjacent plants may be infected by root-to-root contact with infected plants. If the overwintering sclerotia come to the surface via cultivation etc, or survival on other hosts nearby, then these can produce wind borne ascospores so infecting wider areas and casing a head rot. Management is by long rotation, deep burial, control of alternate hosts or use of resistant varieties (Flett B ARC-Grain crops Institute SA, 2012).
Sowing of seed contaminated with sclerotia will therefore also be a risk and there are tolerances for this in 2002/57/EC. In addition, seed can also be infected and transmitted to seedlings, so causing damping-off (Venturoso et al., 2015).
The SEWG concluded that the relative significance of seed as a pathway depends on the level of inoculum already present in the soil, which is likely to vary across the EU depending on cropping history, practice of rotation etc. For some areas it is likely that seed could be a significant pathway of introduction to fields and places of production which are otherwise substantially free from the pathogen. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Sclerotinia Head Rot (SHR) is one of the most damaging diseases of sunflower in Europe, Argentina, and USA, causing average yield reductions of 10 to 20%, but leading to total production loss under favorable environmental conditions for the pathogen (Fusari et al 2012). In Egypt, Sclerotinia wilt and head rot were found distributed through the entire surveyed sunflower production areas and average incidence of wilt was 6.7% and 9.9%, while head rot incidence was 1.3 and 1.9% in 1996 and 1997, respectively (El-Deeb et al., 2000). The inoculum density ranged from 0.04 to 0.15 sclerotia per kg soil, while wilt incidence ranged from 8.7 to 15.0% respectively, so showing a positive correlation between wilt incidence and inoculum density. Both diseases, Sclerotinia wilt and head rot, caused significant reduction in weight of 1000 seeds, seed yield per head and oil content, and head rot caused higher yield loss than wilt. In Croatia Sclerotinia sclerotiorum was the most dominant pathogen on sunflower stems in 2001 with percentage of infection of non-treated and fungicide-treated plants between 0 and 32.5%, and 0 and 17.5%, respectively (Ćosić et al., 2005).
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:

Economic impact is considered major, subject to variation between the years. **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. The relative significance of seed as a pathway depends on the level of inoculum already present in the soil, which is likely to vary across the EU depending on cropping history, practice of rotation etc. For some areas it is likely that seed could be a significant pathway of introduction to fields and places of production which are otherwise free from the pathogen. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Basic and certified material:
Not more than 10 sclerotia or fragments of sclerotia found in a laboratory examination of a representative sample of each seed lot, of a size specified in column 4 of annex II of the Directive. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Justification (if necessary):

The SEWG noted that some member states currently have additional requirements for thresholds for this pathogen in field inspection. **REFERENCES:**

* CABI (2005) Distribution Maps of Plant Diseases, 2005, October (Edition 1), pp Map 971 <http://www.cabi.org/isc/abstract/20066500971>;
* Ćosić J, Jurković D, Vrandečić K & Duvnjak T (2005) Occurrence of diseases on sunflower stems in eastern Croatia. Agriculture Scientific and Professional Review 11 No.1, 11-16;
* El-Deeb AA, Abdallah SM, Mosa AA, Ibrahim MM (2000) Sclerotinia diseases of sunflower in Egypt. Arab Universities Journal of Agricultural Sciences 8 No.3, 779-798;
* Flett B ARC-Grain Crops Institute SA (2012), <http://www.grainsa.co.za/sclerotinia-head-rot-of-sunflower-in-the-spotlight-2>
* Fusari CM, Rienzo JA di, Troglia C, Nishinakamasu V, Moreno MV, Maringolo C, Quiroz F, Alvarez D, Escande A, Hopp E, Heinz RA, Lia VV & Paniego NB (2012) BMC Plant Biology 12 No.93 pp;
* Venturoso L dos R, Bacchi LMA, Gavassoni WL, Venturoso LAC, Pontim BCA & Reis GF dos (2015) Ciência Rural 45 No.5 788-793. <https://www.cabdirect.org/cabdirect/abstract/20153195553>;