NAME OF THE ORGANISM: Phytophthora sojae (Phytophthora megasperma f. sp. glycinea) (PHYTMS)

GENERAL INFORMATION ON THE PEST

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

Pest category:

Chromista **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
List of countries (EPPO Global Database):

Croatia (2014); France (1992); Italy (1992)
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/>). Experts considered that this pest is present worldwide, wherever soybean is grown, with the exception (?) of Hungary, Slovenia and Swizerland where it was present in the past.

HOST PLANT N°1: Glycine max (GLXMA) 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):**

?
Conclusion:

Candidate

Justification:

This pathogen causes a root rot in soyabean. Phytophthora megasperma f. sp. glycinea is asociated with soil residues (Zecchinelli & Gaudenzi 2002). Directive 92/9/EEC (now 2002/57) requires that inert material should not exceed 0.3% of the total weight of a seed sample. All parts of the soybean plant are susceptible to infection by P. sojae, from germinating seedlings to mature plants. In the field, P. sojae causes damping off of soybean seedlings and a root and stem rot of established plants. Leaves can be infected in the field as a result of rain splash etc. Several species of lupins have also been reported as hosts (Tyler, 2007).
In conclusion there are many references to the efficacy of seed treatments, natural infestation of soil and treatment of soils and soil conditions but no references of the pathogen definitely being naturally seed-borne, could be found, except one. This paper describes P. sojae as transmitted by seeds following artificial inoculation of soyabean seeds in the laboratory (ZhaoHui & Jin, 1997). Experts agreed that there are uncertainties concerning the significance of the seed transmission, and decided to continue the evaluation of the RNQP status. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

In Australia, in a trial, one variety with high field resistance, did not suffer losses in 2 years, whereas the yield depression of less resistant genotypes ranged up to 72%, depending on the genotype and year. Yields varied by year, depending on when mortality occurred in the season. Genotypes with immunity have been widely grown in the United States because they offer complete protection against some races, although new pathogenic races have developed quickly, and previously immune genotypes have then suffered severe yield losses (Ryley et al., 1989). It is the third most important cause of yield loss in soyabean by disease in USA (Wrather et al., 2001), and has an annual cost worldwide of $1-2 billion (Tyler 2007).
However the SEWG concluded that the pest should not qualify for RNQP status as no evidence of significant economic impact in Europe are available (less damage in Europe because less intensive cultivation of this crop?). This pest will be covered in the future by the general ‘lowest possible level’ requirement.
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:

The pest has been a major problem in the USA. Less damage has been observed in the EU probably because of the less intensive cultivation of this crop. The economic impact is considered acceptable in the EU. **CONCLUSION ON THE STATUS:**

Disqualified: There are no evidence of significant economic impact in the EU. This pest/host combination will be covered by the 'lowest possible level' general requirement. **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:**

* Ryley MJ, Mosetter HF & Rose JL (1989) Yield losses of soybeans due to Phytophthora megasperma f.sp. glycinea Australian Journal of Agricultural Research 40(6) · DOI: 10.1071/AR9891161;
* Tyler BM (2007) Phytophthora sojae: root rot pathogen of soybean and model oomycete. Molecular Plant Pathology 8 No.1, 1-8;
* Wrather J, Anderson T, Arsyad D, Gai J, Ploper L, Porta-Puglia A, Ram H & Yorinori J (1997) Soybean disease loss estimates for the top 10 soybean producing countries in 1994. Plant Dis. 81:107-110;
* Zecchinelli R & Gaudenzi S (2002) Plant health requirements envisaged by the quality norms for seeds of soyabeans. Sementi Elette 48 No.3, 31-33;
* Zhou ZhaoHui; Yan Jin (1997) A seed testing method for soyabeans. Entry & Exit Animal & Plant Quarantine of China No.2, 30-31;