NAME OF THE ORGANISM: Pseudomonas savastanoi pv. glycinea (Pseudomonas syringae pv. glycinea) (PSDMGL)

GENERAL INFORMATION ON THE PEST

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

Pest category:

Bacteria **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?

Yes
Conclusion:

* Candidate: Oil and fibre plants sector

Justification (if necessary):

Regarding its host specificity, a listing at the pathovar level is justified. **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 (1999); Bulgaria (1999); France (1999); Germany (1999); Hungary (1999); Italy (1999); Poland (1999); Romania (1999)
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: 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):**

Yes
Conclusion:

Candidate

Justification:

Soybean is the only known natural host of P. savastanoi pv. glycinea. The bacterium is a seed-borne pathogen. It survives in infected soybean plant debris on (or under) the soil surface from one season to the next which subsequently infects soybean plants the following spring. The pathogen survives better under dry, cold conditions than under wet and warm ones. Spread during the season is due to splashing during rain. Aerosols of inoculum can develop in the field and produce epiphytic populations on leaves (CABI, 2015). In fields free from surviving bacteria from the previous crops and contaminated debris, infected seeds would be considered to be the main source of infection. Rotation would allow reducing the risk of infestation from this source. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

This disease is commonly found in cool, temperate soyabean-growing regions worldwide. Incidences of soyabean infection with P. savastanoi pv. glycinea of >90% have been recorded. Oil and protein content of seeds can be affected (CABI, 2015). Losses range from 5% to 18% in Korea and from 4% to 40% in the USA (APS Compendium of Soybean Disease, 1999). The disease has not caused significant economic losses in most areas of the world due to resistance or plant tolerance. Kennedy and Alcorn (1980) gave details about losses of US $54.5 million for each of the years 1975, 1976, and 1977 in Iowa, USA. However, the accuracy of this figure has been questioned (CABI, 2015). The economic impact of bacterial blight of soyabeans caused by P. savastanoi pv. glycinea was investigated in Italy, France and Spain: In Italy and France an infestation level of 0.5-20% did not cause significant yield losses. Experiments highlighted the low impact of soyabean bacterial blight in Europe (Stefani et al., 1998). However, the production of quality seed may be usefull to prevent the accumulation of effective inoculum on the seed.
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 economic impact of the bacterial blight of soybean caused by Pseudomonas syringae pv. glycinea has been investigated in three countries belonging to the European Union: Italy, France and Spain. Weather and growing conditions have been monitored over three years of field experiments (1992-1994) and the data analysed in order to evaluate possible yield losses. In Italy and France, no significant yield losses were observed when using different cultivars and seeds infested at 0.5-20% . In Italy the initial seed infection level was positively correlated with the infection of the harvested seed by the pathogen; both in Italy and in France on some cultivars, it was possible to correlate seed infection level with the epiphytic population of the pathogen and the intensity of symptoms affecting plants in the field. No epiphytic infection by the pathogen was observed in Spain, even at the highest seed infection rate (20%), and there was no disease in the field and no yield reduction. The pathogen seemed not to become systemic since no infection was observed on seed aseptically taken in the field just before harvest. The experiments highlighted the low impact of soybean bacterial blight under European climatic conditions, but suggested the choice of dry and warm regions for the production of quality seed to prevent the accumulation of effective inoculum on the seed year by year (Stefani et al., 1998). **CONCLUSION ON THE STATUS:**

Disqualified: economic impact is acceptable. **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:**

* APS Crop Compendium of Soybean Diseases (1999) Fourth edition. The American Phytopathological Society;
* CABI (Centre for Agricultural Bioscience International) (2015) Online. Datasheets Pseudomonas savastanoi pv. glycinea (bacterial blight of soybean). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/44963>;
* Kennedy BW & Alcorn SM (1980) Estimates of U.S. crop losses to procaryote plant pathogens. Plant Disease 64:674-676;
* Stefani E, Caffier D & Fiore N (1998) The economic impact of the bacterial blight of soybean under European agromatic conditions. Journal of Plant Pathology, 80(3), 211-218.