NAME OF THE ORGANISM: Candidatus Liberibacter solanacearum (Liberibacter solanacearum) (LIBEPS)

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: Seed potato sector

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

Yes
Conclusion:

* Candidate: Seed potato sector

Justification (if necessary):

Haplotypes A and B are not present in the EPPO region. If haplotypes A and B are regulated as quarantine pests, a listing of haplotypes C, D and E could be justified based on geographical distribution. **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):

Finland (2017); Germany (2015); Spain (2017); Spain/Islas Canárias (2017); Sweden (2016)
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/>). Only haplotypes C, D and E are present in the EPPO region (European haplotypes).

HOST PLANT N°1: Solanum tuberosum (SOLTU) for the Seed potato sector.

Origin of the listing:

EPPO Panel on phytosanitary measures for potato
Plants for planting:

Plants intended for planting, other than [true] 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:

’Ca. L. solanacearum' is associated with the zebra chip disease of potato (usually haplotypes A and B). The recent discovery of volunteer potato plants in Finland infected with haplotype C and in Spain infected with haplotype E would suggest that all haplotypes can infect potato. Lso is transmitted by psyllids, however no efficient vector other than Bactericera cockerelli is currently known for transmission of Lso between solanaceous plants. This psyllid species does not occur in the EPPO Region. Psyllids in the PRA area could act as inefficient vectors from carrot to potato but it appears not within or between solanaceous crops. Seed potato tubers are considered as an important source of inoculum (EPPO, 2012) particularly in New Zealand where tubers mostly sprout and infected plants may be asymptomatic. Importance of the plants for planting pathway compared to natural dispersal will vary according to the pest and vector prevalence in the area. In area where the pest is present, and in the absence of efficient vectors, plants for planting are considered to be the main pathway for the pest/host/intended use combination. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

’Ca. L. solanacearum’ causes severe damage in potato in its current area of distribution. Yield and quality are affected: It caused millions of dollars in losses in the USA and New-Zealand. Yields were impacted by more than 20% (USA) to approximately 60% (New-Zealand). Yield impacts have been as high as 100% in some fields in Central America. Quality is affected in relation to internal discoloration, modification of the sugar and mineral content, reduction of the dry matter, and appearing of phenolic compounds. In the Americas potato tubers affected by zebra chip usually do not sprout or produce week sprouts and cannot be used as seed (EPPO, 2012), however in New Zealand tubers mostly sprout and infected plants may be asymptomatic. This data is for haplotypes A and/ or B. The five haplotypes A, B, C, D and E are not yet known to elicit biological differences, although recently haplotype B was said to be more pathogenic than haplotype A. Haplotypes C and E have been detected recently in the EPPO region in volunteer potato or potato crops, and may have the same economic impact if an efficient vector for transmission was introduced.
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:

Inclusion of ‘Ca L. solanacearum’ in the certification scheme would prevent the presence of the pest on the plants for planting. Measures taken now will help to reduce the economic impact if an efficient vector establishes in the future. **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. If haplotypes A and B are regulated as quarantine pests in a country, the RNQP Status should then be restricted to European haplotypes C, D and E. This regulation will help in preventing introduction of Lso into the potato production system, and help in suppressing Lso in potato production systems where it is present. Reducing reservoirs of inoculum would help in reducing then economic impact of haplotypes C, D and E if an efficient vector might establish or arise. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Zero tolerance, based on symptoms, or inspection and testing (see Risk management measures). **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

(a) Plants produced in areas known to be free from Liberibacter solanacearum. The pest free area status should take into account the carrot pathway and whether vectors are present;
or
(b) No symptoms of 'Candidatus Liberibacter solanacearum' have been seen during official crop or tuber inspections of seed potatoes at the place of production since the start of the last complete cycle of vegetation;
or
(c) Inspection of each lot (cut a representative sample of tubers) and testing of symptomatic tubers to confirm the absence of 'Candidatus Liberibacter solanacearum'.

Reports of the new incidences of 'Candidatus Liberibacter solanacearum' should continue to be reported to EPPO so that the effect can be monitored. **REFERENCES:**

* EPPO (2012) Final pest risk analysis for Candidatus Liberibacter solanacearum in Solanaceae. EPPO, Paris.