NAME OF THE ORGANISM: Acanthoscelides obtectus (ACANOB)

GENERAL INFORMATION ON THE PEST

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

Pest category:

Insecta **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: Vegetable seed sector

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

Not relevant
Conclusion:

* Candidate: Vegetable seed 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):

Austria (2001); Belgium (2001); Bulgaria (2001); Czech Republic (2011); Finland (2011); France (2001); Germany (2001); Greece (2001); Hungary (2001); Italy (2001); Netherlands (2001); Poland (2001); Portugal (2008); Portugal/Madeira (2008); Romania (2001); Slovakia (2001); Spain (2001); Spain/Islas Canárias (2001); Spain/Islas Baleares (2001)
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/>). Acanthoscelides obtectus (Say), a serious pest of kidney beans, Phaseolus vulgaris L., originated in the neotropics and has been reported from Australia, Europe, United States and a few Asian countries (Thakur et al., 2010).

HOST PLANT N°1: Phaseolus vulgaris (PHSVX) for the Vegetable seed sector.

Origin of the listing:

1 - Vegetable seed sector: Council Directive 2002/55/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:

This bean weevil naturally lives in the field environment where the adults lay eggs on the developing host plant seed pod. The larvae hatch and feed and pupate inside the seed, and after harvest can complete further generations in store if conditions are suitable. Germination of infested seeds is reduced due to internal damage or destruction of the seed, but can be prevented by storage in certain types of bags or containers. The pest can develop in Phaseolus vulgaris (Mutungi et al., 2015). In conclusion P. vulgaris seeds should be considered as a significant pathway. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Planting bruchid-damaged seeds significantly inhibits seed germination and plant development, and shows negative effects on yield components (number of days to flowering, pod length, plant height, and number of days to physiological maturity), increases powdery mildew severity, and reduces seed quality (Misangu et al., 2007). Infested seedlings are more subject to attack by fungal diseases than uninfested ones (Glauninger & Satonek, 1986).
What is the likely economic impact of the pest irrespective of its infestation source in the absence of phytosanitary measures? (= official measures)

Medium
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:

The bean weevil, Acanthoscelides obtectus Say, causes severe post-harvest losses in the common bean, Phaseolus vulgaris L. **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:

The control of this insect relies heavily on the use of conventional insecticides, which increase the associated risk of pest resistance, hazards to human health and environmental infestation. Protecting grains with alternative chemical control options that alleviate the concerns outlined above are urgently needed. Essential oils of plants have been presented as a suitable alternative (Jumbo et al., 2014) . **7- Is the quality of the data sufficient to recommend the pest to be listed as a RNQP?**

Yes

Conclusion:

Candidate
Justification:

Sufficient amount of data, based on scientific literature. **CONCLUSION ON THE STATUS:**

Recommended for listing as an RNQP, based on data. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Zero tolerance approach, based on visual examination. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

A representative sample of the seed has been subject to inspection (which may follow an appropriate treatment) and has been found free from Acanthoscelides obtectus. **REFERENCES:**

* Mutungi C, Affognon HD, Njoroge AW, Manono J, Baributsa D & Murdock LL (2015) Triple-layer plastic bags protect dry common beans (Phaseolus vulgaris) against damage by Acanthoscelides obtectus (Coleoptera: Chrysomelidae) during storage. Journal of Economic Entomology 108, 2479-2488;
* Misangu RN, Chipungahelo MS, Reuben SOWM & Mulungu LS (2007) The Effect of sowing bruchid damage bean (Phaseolus vulgaris L.) seeds on germination, plant development and yield. Journal of Entomology 4, 337-341;
* Glauninger J & Swatonek F (1986) The reaction to infestation of bean seeds (Phaseolus vulgaris L. and P. coccineus L.) by the common bean beetle (Acanthoscelides obtectus Say). Bodenkultur 37, 63-73;
* Jumbo LOV, Faroni LRA, Oliveira EE, Pimentel MA, Silva GN (2014) Potential use of clove and cinnamon essential oils to control the bean weevil, Say, in small storage units, Industrial Crops and Products 56, 27-34;
* Thakur DR (2010) Invasion and threats of Acanthoscelides obtectus (Say) (Coleloptera: Bruchidae) to kidney beans in India - a first record. Julius Kühn-Institut, Bundesforschungsinstitut für Kulturpflanzen, Quedlinburg;