NAME OF THE ORGANISM: Bruchus pisorum (BRCHPI)

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
Conclusion:

candidate
Justification (if necessary):

The pest is present worldwide (Canadian Grain Commission, 2013), and in all EU Member States (Fauna Europaea, 2017).

HOST PLANT N°1: Phaseolus coccineus (PHSCO) 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):**

No
Conclusion:

Not candidate

Justification:

No references to evidence of infestation of seeds of Phaseolus coccineus by Bruchus pisorum could be found. Bruchus pisorum (L.) reproduces only on pea, though there is evidence they feed on flowers of faba bean (Vicia faba) and beans (Phaseolus vulgaris) (Annis & O'Keeffe, 1984). **CONCLUSION ON THE STATUS:**

Disqualified: Bruchus pisorum (L.) reproduces only on pea. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Annis B & O'Keeffe LE (1984) Effect of pollen source on oogenesis in the pea weevil, Bruchus pisorum L. (Coleoptera: Bruchidae). Protection Ecology 6, 257-266;
* Fauna Europaea (2017) Bruchus pisorum. All European animal species online. Museum für naturkunde, Berlin. Available online at <http://www.fauna-eu.org/cdm_dataportal/taxon/5036cbcf-d15c-4565-b03b-780580236fe8>;

HOST PLANT N°2: 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):**

No
Conclusion:

Not candidate

Justification:

No references to evidence of infestation of seeds of Phaseolus vulgaris by Bruchus pisorum could be found. Bruchus pisorum (L.) reproduces only on pea, though there is evidence they feed on flowers of faba bean (Vicia faba) and beans (Phaseolus vulgaris) (Annis & O'Keeffe, 1984). **CONCLUSION ON THE STATUS:**

Disqualified: Bruchus pisorum (L.) reproduces only on pea. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Annis B & O'Keeffe LE (1984) Effect of pollen source on oogenesis in the pea weevil, Bruchus pisorum L. (Coleoptera: Bruchidae). Protection Ecology 6, 257-266;
* Fauna Europaea (2017) Bruchus pisorum. All European animal species online. Museum für naturkunde, Berlin. Available online at <http://www.fauna-eu.org/cdm_dataportal/taxon/5036cbcf-d15c-4565-b03b-780580236fe8>;

HOST PLANT N°3: Pisum sativum (PIBSX) 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:

Bruchus pisorum L (Coleoptera: Chrysomelidae) is a species of seed beetle that affect adversly pea crops by damaging seeds with entrance or exit holes, and developing larvae and adults feed on the inside of the seeds during development or in store after harvest. In the field, the main sources of pea weevil are broken peas, volunteer peas and sown infested seed. Eggs are laid on the outside of the developing pods and larvae develop inside, before the adult chews an exit hole through the seed coat. Recontamination of the stored material is possible. The resulting damage causes significant decrease in germination, growth of radicle and vigour if used as seed, and large populations damage stored crops (Nikolova & Georgieva, 2015, Canadian Grain Commission, 2013). Seed is therefore a pathway and other sources can be managed, therefore seed can be considered a significant pathway compared to others for the pest/host/intended use combination. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Damage of the seeds causes significant decrease in germination, growth of radicle and vigour if used as seed, and large populations damage stored crops, although they do not mutiply in store (Nikolova & Georgieva, 2015; Nikolova, 2016). Samples of peas at harvest were infested at the rate of 6.3% by B. pisorum in Turkey (Özar & Genç, 1987). Insecticide sprays may be used against the adults as soon as infestation is found in the field, but before filling of the earliest pods (EPPO 1998). However this management has a cost and correct timing is required for vining peas.
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:

 **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:

Protection is based on foliar applications of insecticide treatments (Seidenglanz, 2009). **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. **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 Bruchus pisorum.
Justification (if necessary):

For these beetles infesting seed, inspections on seed are likely to detect symptoms without necessarily confirming species. Risk from focusing the listing on the main species in each case is therefore very limited. **REFERENCES:**

* Canadian Grain Commission (2013) Advisory leaflet, available at <https://www.grainscanada.gc.ca/storage-entrepose/pip-irp/pw-bp-eng.htm>;
* Fauna Europaea (2017) Bruchus pisorum. All European animal species online. Museum für naturkunde, Berlin. Available online at <http://www.fauna-eu.org/cdm_dataportal/taxon/5036cbcf-d15c-4565-b03b-780580236fe8>;
* Nikolova IM & Georgieva NA (2015) Evaluation of damage caused by Bruchus pisorum L (Coleoptera: Chrysomelidae) on some parameters related to seed quality of pea forage cultivars (Pisum sativum L.). Journal of Central European Agriculture 16, 330-343;
* Özar Aİ & Genç H (1987) Study on the rates of infestation and damage by species of Bruchidae (Coleoptera) damaging stored food legumes in the Aegean Region. Conference paper : Türikye I. Entomoloji Kongresi Bildirileri, Ekim 13-16, Ege Üniversitesi, Bornova, Izmir. 341-350;
* Nikolova IM (2016) Response of Pea Varieties to Damage Degree of Pea Weevil, Bruchus pisorum L.. Scientifica 8053860, 7p.; Seidenglanz M, Rotrekl J & Kolařík P (2009) Methodology protection pea (Pisum sativum L.) against the pea weevil (Bruchus pisorum L.). Agritec Plant Research

HOST PLANT N°4: Vicia faba (VICFX) 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):**

No
Conclusion:

Not candidate

Justification:

No references to evidence of infestation of seeds of Vicia faba by Bruchus pisorum could be found. Bruchus pisorum (L.) reproduces only on pea, though there is evidence they feed on flowers of faba bean (Vicia faba) and beans (Phaseolus vulgaris) (Annis & O'Keeffe, 1984). **CONCLUSION ON THE STATUS:**

Disqualified: Bruchus pisorum (L.) reproduces only on pea. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Annis B & O'Keeffe LE (1984) Effect of pollen source on oogenesis in the pea weevil, Bruchus pisorum L. (Coleoptera: Bruchidae). Protection Ecology 6, 257-266;
* Fauna Europaea (2017) Bruchus pisorum. All European animal species online. Museum für naturkunde, Berlin. Available online at <http://www.fauna-eu.org/cdm_dataportal/taxon/5036cbcf-d15c-4565-b03b-780580236fe8>;