NAME OF THE ORGANISM: Claviceps purpurea (CLAVPU)

GENERAL INFORMATION ON THE PEST

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

Pest category:

Fungi **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: Cereals (including rice) sector

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

Not relevant
Conclusion:

* Candidate: Cereals (including rice) 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 in Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland, Portugal, Romania, Spain and Sweden (CABI, 2012).

HOST PLANT N°1: Secale cereale (SECCE) for the Cereals (including rice) sector.

Origin of the listing:

2 - Cereals sector: Council Directive 66/402/EEC
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:

Species is a host plant (CABI, 2012)(Australia, 2016). Sclerotia can be transported with seeds. Alternative hosts can serve as a source of infection. Wind and insects can transport ascospores, delevoped from sclerotia but are a less significant pathway than contaminated seeds (see possible control of weeds). **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

Ergot is more common in rye and triticales (Compendium of Wheat Diseases, 2010). Ergot significantly reduced the number of grain and grain weight per ear. Depending on the amount of ergot sclerotia the number of grains per ear declined by 10-80%, and grain weight by 25-93% (Mikaliunaite and Dabkevicius, 2009). It causes the production of alkaloids toxic for human and animal consumption. As a consequence ergot is regulated in cereal grains (maximum 1g of sclerotia/kg of grains for the animal consumption according to the EU Directive 32/2002 and regulation 574/2011 - except on maize and rice; maximum 0,5g sclerotia/kg of grain cereals for the human consumption according to the modified regulation 1881/2006). Over these thresholds, cereal grains are unsellable which causes direct impact for the producer and/or a risk for the final consumer.
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:

If seed is contaminated with large numbers of sclerotia the crop can be heavily infected during vegetation followed by yield and quality losses; Losses from Claviceps purpurea can occur through direct seed replacement, increased sterility of neighbouring spikelets and reduced kernel weight due to diversion of host nutrients at the expense of adjacent florets (CABI, 2012). **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:

Planting seed free from sclerotia and definition of tolerance levels for seeds. Seed cleaning reduces the primary inoculum source and the economic impact for the intended use. Control of grassy weeds in the crop and field margins. A crop rotation that allows for a 1-year absence of gramineous host will markedly reduce the number of sclerotia in the fields (Compendium of Wheat Diseases and Pests, 2010). **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:

Not more than 1 (pre-basic or basic) or 3 (certified) sclerotia or fragments [4 for hybrids of Secale Cereale] found in a representative sample of the seed lot of a size specified in column 4 of Annex III. Ways of achieving this threshold may be left to the producers. Information from field inspections may be provided to the applicant to inform their subsequent decisions on certification and seed cleaning. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Measures do not need to be specified (see defined thresholds). **REFERENCES:**

* Australia (2016), online, 2016. Database. Ergot fungi of Australia. Host index. Biosecurity Queensland, Department of Agriculture, Fisheries and Forestry. Available from <http://collections.daff.qld.gov.au/web/key/ergotfungi/Media/Html/host.html>;
* CABI (Centre for Agricultural Bioscience International), online, 2012. Datasheets Claviceps purpurea (ergot). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/13794>;
* Compendium of Wheat Diseases and Pests (2010) Third edition. The American Phytopathological Society;
* Mikaliunaite R and Dabkevicius Z (2009) The spread of ergot (Claviceps purpurea) on Poaceae plants and incidence on cereals in Lithuania. Zemdirbyste-Agriculture 96, 246–259;