NAME OF THE ORGANISM: Gibberella fujikuroi (Fusarium fujikuroi) (GIBBFU)

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, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Spain, UK (CABI, 2014). Experts confirmed that the pest is present worldwide on maize. It is the main fusarium species in south of Europe and in tropical areas, in areas where rice is grown. Fumunisines mycotoxines produced by F. fujikuroi can be used to determine where the fungus is present.

HOST PLANT N°1: Oryza sativa (ORYSA) 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:

G. fujikuroi has several host plants from different families (polyphagous). Rice is one of the main host plants but maize and sorghum are very common hosts. G. fujikuroi is a seed-borne pathogen causing seedling rot. Transmission of G. fujikuroi by rice seeds was demonstrated. In fields free from surviving spores from the previous crop and infected debris, infected seeds would be considered to be the main source of infection (CABI, 2014). If fields are infected from the previous crop (e.g. if maize was the previous crop cultivated), pest treatment and stress management (and sometimes crop rotation with non-host crop) are available to reduce the risk of infection from this source. Indeed the fungus is relatively short-lived in soil (APS Crop Compendium of Rice Diseases, 1992). Aerial infection by ascospores later in the season cannot be prevented; however seed tests are available to screen out any infected stocks to below the directive tolerances. The SEWG concluded that rotation with rice and maize increases the level of spores. In case of a rotation with wheat (in Camargue, France) or alfalfa, rice seeds can be considered as a significant pathway compared to other pathways. In absence of rotation, or in case of rotation with highly sensitive crops, main source of infection will come from the soil. Rice seeds are considered to be a significant pathway compared to other pathways. **5 - Economic impact:**
Are there documented reports of any economic impact on the host?

Yes
Justification:

There have been a number of estimates of losses due this fungus in the world. Reports of losses outside EU ranged from 1% to 95% (e.g. 20-50% yield losses in Japan, 3% to 95% in India, 40% in Nepal, 6.7-58% in Pakistan, 70% to almost complete loss in Australia, up to 75% in Iran, 10%-15% yield losses in Turkey) (APS Crop Compendium of Rice Diseases, 1992; CABI, 2014; Gupta et. al, 2015; Singh and Sunder, 2012). Impacts in the EU are also reported: 5% to 23% in Spain (Singh and Sunder, 2012). F. fujikuroi re-emerged recently as a significantly important disease in Asia and other rice growing countries of the world, especially on aromatic cultivars (the 95% of yiels losses in India was observed on Basmati varieties). The SEWG commented that economic impact is mainly linked to the presence of Fumonisine.
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 pest was regulated in the EU in 2012 on the basis of its unacceptable economic impact and the absence of available plant protection products. **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:

 **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. Seed can be the main pathway if rotation has been used to reduce the importance of carryover of inoculum. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Basic material:
Not more than 2 symptomatic plants per 200m2 seen during field inspections at appropriate times of a representative sample of the plants in each crop
Certified material of the first generation (C1):
Not more than 4 symptomatic plants per 200m2 seen during field inspections at appropriate times of a representative sample of the plants in each crop
Certified material of the second generation (C2):
Not more than 8 symptomatic plants per 200m2 seen during field inspections at appropriate times of a representative sample of the plants in each crop **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:**

* APS Crop Compendium of Rice Diseases (1992) The American Phytopathological Society;
* CABI (Centre for Agricultural Bioscience International), online, 2014. Datasheets Gibberella fujikuroi (bakanae disease of rice). Invasive species compendium. CABI, Wallingford, UK. Available from <http://www.cabi.org/isc/datasheet/25158>;
* Gupta AK, Solanki IS, Bashyal BM Singh Y and Srivastava K (2015) Bakanae of rice - an emerging disease in Asia. The Journal of Animal & Plant Sciences, 25(6). Page: 1499-1514. ISSN: 1018-7081;
* Singh R and Sunder S (2012) Foot rot and bakanae of rice: an overview. Indian Society of Mycology and Plant Pathology. Rev. Plant Pathol. Vol. 5;