NAME OF THE ORGANISM: Fusarium oxysporum f. sp. Lini (FUSALI)

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: Oil and fibre plants sector

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

* Candidate: Oil and fibre plants sector

Justification (if necessary):
 
F. oxysporum f. sp. Lini is the most damaging Fusarium pathotype on Linum. **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 France, Germany and UK (Fitt et al., 1991), Poland (Wielgusz et al., 2009). This list is not exhaustive.

HOST PLANT N°1: Linum usitatissimum (LIUUT) for the Oil and fibre plants sector.

Origin of the listing:
 
RNQP Questionnaire  
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:
 
At present Fusarium spp. are included in the EU Marketing Directive 2002/57/EC with a threashold of 5%.  
This fungus can also be soil borne and infects via the roots, entering through root tips, hairs, emerging rootlets and wounds. It then crosses the root cortex and enters the vascular system, within which it spreads up into the stems causing vascular wilt (Brayford, 1996). F. oxysporum is very rarely transmitted by seed with 1.5% of colonies isolated from seed samples (Placinta & Murariu, 2016). In India, growth and sporulation of F. oxysporum f.sp. lini was completely inhibited by seed treatments and this increased seed germination and lowered pre-emergence mortality (Sharma et al., 2002). Transmission is "in seed" (Brayton 1996).  
F. oxysporum f.sp. lini, which is present on the surface of seeds, in the endocarp region and at the level of the embryo, can cause organic and physiological disorders during germination and the first few days of seedling growth. During germination the fungus acts as an inhibitor. Later it has a stimulating effect characterized mainly by an abnormal elongation of the hypocotyl and, on some cvs. there are malformations and necrotic lesions on the rootlets, hypocotyl and cotyledons. After the period of stimulation the seedlings degenerate and die (Zad, 1978).  
In Belarus, seeds sown in a controlled climate chamber had a higher germination percentage (98-100%) than those in the field, mainly due to the lower incidence (or absence) of fungal diseases in the chamber. When seeds germinated in the chamber were planted in the field, infection was high at 27.4% (Baturo et al., 1987).  
Seeds from F. oxysporum f. sp. lini infected flax were lighter, yellowish to dark brown, rough and dull, and wt./1000 seeds varied from 2.3 to 3 g, depending on percentage of wilt in the field. Seeds from healthy flax fields were heavier, dark brown, smooth and shining, and 1000 seed wt. was 3.6 g. Seeds (from diseased fields) carrying the pathogen varied from 0.42 to 6% and the pathogen was detected within the seed (0.02-0.1%) and on its surface. Sowing seed from a moderately diseased field (26-50% wilt) resulted in 15.7% pre-emergence rot and 7.6% seedling wilt (Tu & Cheng, 1976).  
The fungus also persists in the soil, while the mycelia and spores survive for many years in debris of flax and other organic tissue. Wind-blown and run-off soil may also spread the fungus from one field to another (Brayton, 1996).  
The SEWG concluded that some of the seed-borne references appear contradictory, and other sources of infection may be present in the field. This particular pathotype is not considered to be primarily spread on seed. F. oxysporum f. sp. Lini is the most damaging Fusarium on Linum but would not qualify for the RNQP status. **CONCLUSION ON THE STATUS:**
 
Disqualified: Seeds are not considered to be a significant pathway compared to other pathways. The listing of this pest is covered by the listing of the Fusarium complex on Linum usitatissimum. **8 - Tolerance level:**  
Is there a need to change the Tolerance level:
 
No  
Proposed Tolerance levels:
 
Not recommended for the RNQP status. **9 - Risk management measures:**  
Is there a need to change the Risk management measure:
 
No  
Proposed Risk management measure:
 
Not recommended for the RNQP status. **REFERENCES:**

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