Bundesamt für
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Position statement of the ZKBS on risk assessment of *Fusarium proliferatum* according to § 5 Paragraph 1 of the Genetic Engineering Safety Regulations (GenTSV)

Fusarium proliferatum

Fusarium proliferatum is an anamorphic form of the *Gibberella fujikuroi* complex from the family Nectriaceae [10]. These fungi are ubiquitous in soil and on plants and are isolated in Germany e.g. from asparagus, where they cause crown and root rot. Moreover, *F. proliferatum* is also a pathogen for many other plants such as maize, wheat, rice, bananas or sugar cane. Depending on environmental conditions, this species produces mycotoxins of the fumonisin group, which can contaminate animal fodder and food products and lead to poisoning [6].

Besides several infections of immunosuppressed individuals, *F. proliferatum* along with four other fungi from the *Fusarium solani* complex is responsible for 4 - 14% cases of onychomycoses [1-4, 9, 11, 12]. Treatment of *F. proliferatum* infections involves administration of amphotericin B in combination with other antifungal drugs like itraconazole or posaconazole.

F. proliferatum can be distinguished from other species of the *G. fujikuroi* complex by analysis of molecular markers, e.g. by sequence analysis of the gene coding for the translation elongation factor 1 alpha [5].

In the USA, *Fusarium proliferatum* isolated from plants was allocated to risk group 1. Under the *F. proliferatum* isolates listed by the ATCC only one was allocated to risk group 2. This was isolated from the blood of an immunosuppressed child. The Swiss directive for classifying organisms distinguishes between *Fusarium proliferatum* phytopathogens in risk group 1 and human pathogens in risk group 2 [8].

Evaluation

According to § 5 Para. 1 of the Genetic Engineering Safety Regulations (GenTSV) in conjunction with the criteria in Appendix 1 of the GenTSV, *Fusarium proliferatum*, as donor and recipient organism for genetic engineering operations, is allocated to **risk group 2**.

Rationale

This mainly phytopathogenic fungus is wide-spread in Germany. In humans it can cause onychomycoses and other localized inflammatory diseases.

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