

Establishing of the entomopathogenic fungus *Isaria fumosorosea* as an endophyte in *Triticum aestivum* and molecular detection of strain JKI-BI-1496

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Entomopathogenic fungi gain more and more influence in biocontrol and protection of plants. Many species of entomopathogenic fungi in various genera are known and some of them show promising effects as biocontrol agents (BCA).

The entomopathogenic fungus *Isaria fumosorosea*, formerly known as *Paecilomyces fumosoroseus*, has got a relatively wide host range. Within the scope of the EU project BIOCOTES investigations were done to validate the use of *I. fumosorosea* as a BCA against several pest insects. Under laboratory conditions it could be shown that *I. fumosorosea* seems to be a suitable BCA against *Bemisia tabaci* (silverleaf whitefly) and *Spodoptera exigua* (beet armyworm).

Based on the previous investigations we tried to establish three different strains of *I. fumosorosea* (JKI-BI-1496, JKI-BI-1497 and JKI-BI-1508) as endophytes in *Triticum aestivum* cv. 'Apogee' to protect plants from pest

insects and phytopathogenic fungi like *Fusarium proliferatum*, *Verticillium dahliae* and *Fusarium solani*. Moreover, the potential as an antagonist against the mentioned phytopathogenic fungi as well as positive or negative influences on plant biomass production were analyzed. Therefore, different parts of the plant were surface sterilized and incubated with the objective to re-isolate the three strains.

Furthermore, DNA was extracted from these *I. fumosorosea* strains to amplify partial sequences of different genes like beta-tubulin and the ITS-region of the ribosomal RNA operon. In addition, after sequencing, phylograms were created.

To determine, if the re-isolated probes from dead insects and plant tissue are the given strains, molecular investigations were done. To begin with and set as a priority the aim is to design a specific primer for *I. fumosorosea* strain JKI-BI-1496 to determine its presence when used in experiments.