

# Determination of the potential of the entomopathogenic fungi *Isaria fumosorosea* as a BCA against pest insects

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Entomopathogenic fungi like *Isaria* sp., *Metarhizium* sp. and *Beauveria* sp. are important biological control agents due to their lethal effects against several insect pests. The aim of the EU-funded project BIOCOTES is therefore the use of the natural ubiquitous entomopathogenic fungus *Isaria fumosorosea* (Ascomycota: Hypocreales: Cordycipitaceae) in an integrated pest management strategy to control pest insects in greenhouses.

The selection of highly virulent and effective strains is one of the necessary prerequisites. Therefore, several strains of *Isaria* sp., obtained from different geographical origins and hosts, were compared for their efficacy and virulence against various pest insect species from the orders Lepidoptera and Hemiptera. By means of various pathogenicity assays, the efficacy and median lethal concentration (LC<sub>50</sub>) of different *Isaria* strains against *Spodoptera exigua* (beet armyworm) and *Bemisia tabaci* (whitefly) were investigated. Depending on the *Isaria* strain, the mortality rates differed from 30 % to 76 %.

The feeding of whiteflies on plants may cause direct damage to the leaves as well as virus transmission by their sucking behaviour. In addition to the mortality effects, insects showed changes within their behaviour when they were infected with *I. fumosorosea*. In order to evaluate whether adults of *B. tabaci*, which had been infected and non-infected with *Isaria*, showed differences in their feeding (sucking) behaviour, the electrical penetration graph method (EPG) was used to observe behavioural changes, e.g. penetration frequencies. First results of the comparisons concerning the changes within the waveform and durations will be shown.

Presently, different molecular methods like RFLP are used for the characterization of virulence factors and differences between the strains of *I. fumosorosea* from different geographical origins and hosts and its influence on different activity patterns as mentioned above.