

Mycopathogens Associated with Pests of Chilli and their Pathogenicity Against Thrips (*Scirtothrips dorsalis*) and Mites (*Polyphagotarsonemus latus*)

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Abstract

Mycopathogens are often found to have close associations with pests of crops. An attempt was made to understand the association of mycopathogens with the major pests of chilli in chilli growing fields of Karnataka State of India. Soil samples were collected from the chilli fields representing ten agro-ecological zones of the state. Larvae of *Tribolium castaneum* and pupae of *Scirtothrips dorsalis* were used as soil baits to isolate fungal pathogens present in soil. Foliage sampling was also done to isolate diseased cadavers of pests. Fungi associated with the diseased cadavers of insects and mites were isolated on to different culture media. Nineteen fungal species were found associated with the pests of chilli. Thirteen fungal species were isolated from soil using larvae of *T. castaneum* and *G. melonella*, respectively as soil baits. Foliage sampling recovered six fungi namely, *Fusarium semitectum*, *Fusarium* sp. isolate GM 15, *Neozygites floridana* from *S. dorsalis* and *Polyphagotarsonemus latus*, *Nomuraea rileyi* from larvae of *S. litura*. Among the fungal cultures *Fusarium* spp. was recovered predominantly from the soil as well as disease cadavers obtained from foliage. Hence, its pathogenicity was studied against *S. dorsalis* and *P. latus* in the laboratory. On larvae of *S. dorsalis* the LC₅₀ of *F. semitectum* and *Fusarium* spp. isolate GM15 were 2.7×10^7 spores/ml and 7.6×10^7 spores/ml, respectively. On active stages of *P. latus* LC₅₀ of *F. semitectum* and *Fusarium* spp. isolate GM15 were 7×10^6 spores/ml and 5.3×10^7 spores/ml, respectively. Hence, the fungus, *Fusarium* spp. can be used as a potential biocontrol agent to control thrips and mite pests in an integrated chilli pest management program.