

Use of *Streptomyces* spp. as biocontrol agents of wheat crown rot caused by fusaria

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Crown rot of wheat is caused mainly by *Fusarium* species and in specific climatic conditions can reduce production up to 50-90%. Biocontrol methods are an interesting approach to satisfy the increasing demand for alternatives to chemical fungicides. *Streptomyces* spp. act as growth promoters as well as biocontrol agents. Therefore, they are promising candidates for seed treatments, which combine their ability to produce a wide range of biologically active molecules with the potential to establish tight interactions with plants. Forty-seven *Streptomyces* spp. strains were selected among 1500, isolated from roots or rhizosphere of various crops. Their ability to reduce mycelial growth (up to 80%) of five *Fusarium graminearum* and *F. culmorum* strains ($N=5$), representing geographical, genotypic and toxigenic diversity, was determined *in vitro*. Streptomyces showing inhibition $>20\%$ were further tested *in vitro* on wheat seedlings (cv. Bandera) for their ability to reduce disease symptoms. The root-necrosis was reduced up to 50% after 4 dpi. Moreover, the strains reduced the severity of crown rot up to 80% after 6 dpi in comparison to the untreated control. The selected strains did not inhibit the growth of the seedlings at the tested conditions. Further *in vivo* studies are foreseen to assess their plant growth promoting ability. Until now, our results confirm that streptomycetes are a promising source for developing organic seed treatments.