Screening of different biofungicides to control grey mould in tomato

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Abstract

Botrytis cinerea, a fungus with a wide host range, is the causal agent of grey mould in tomato. The infection is often initiated on wounds where leaves and side shoots are removed. When the disease spreads to the healthy stem it results in stem rot, wilting and sometimes even in plant death. Currently the control of *B. cinerea* in tomato greenhouses in Belgium relies mainly on preventive and curative chemical fungicide spraying.In this study the efficacy of different biofungicides (plant extracts and antagonists) was evaluated *in vitro*, in a detached leaf assay and in pot trials. Based on the results of the lab screening 5 biofungicides were selected and evaluated in a greenhouse experiment. During the lab screening promising results were obtained with 5 biofungicides, (3 products containing plant extracts and 2 products containing antagonists). A product containing soybean lecithin (Agr5) resulted in a very good control of *B. cinerea* on detached leaves. However, no direct effect on mycelium growth or conidial germination was observed, suggesting an indirect mechanism. Products based on citrus oil + cinnamon (Agr3) and red thyme oil (Agr4) significantly reduced the symptoms on detached leaves and showed *in vitro* a strong inhibitory effect on mycelium growth and conidial germination, but no effect was observed when applied as preventive wound treatment. In addition, two products containing *Gliocladium* sp. (BCP and Prestop) had a moderate but consistent control effect on *B. cinerea* on detached leaves and showed 80-100% control when applied preventively on stem wounds. The greenhouse trial confirmed the efficacy of BCP and Prestop as preventive wound treatment and suggested a possible curative nature of Agr3.