Title Selection and evaluation of phyllosphere yeasts as biocontrol agents against grey mould of tomato

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Abstract

Phyllosphere yeasts antagonistic to the infective activity of *Botrytis cinerea* were isolated from leaves of greenhouse-grown tomatoes and evaluated in a detached leaf assay for their ability to suppress grey mould. Nine of 30 recovered yeast isolates were found to reduce a disease index by >90% when compared to an untreated control. In greenhouse experiments, the yeast isolate *Rhodotorula glutinis* Y-44 was the most efficient in controlling grey mould of tomato plants. In further experiments in greenhouse-grown tomato plants the effectiveness of *R. glutinis* Y-44 was compared with two commercial fungicides. It was demonstrated that *R. glutinis* Y-44 was as effective as fungicides in controlling the pathogen. Moreover, the population of *R. glutinis* Y-44 was monitored for 8 weeks after application on tomato plants. The isolate successfully colonized the plant surface, although the population decreased by 10-fold 8 weeks after application. Since *B. cinerea* is also a major post-harvest pathogen for tomato fruits, the ability of *R. glutinis* Y-44, to protect artificially infected wounded tomato fruits was also tested. It was shown that *R. glutinis* Y-44 was able to reduce by 50% the percentage of infected wounds compared to the untreated controls.