

Title Biocontrol of postharvest gray mold of cherrytomatoes with the marine yeast *Rhodosporidium paludigenum*

Author Yifei Wang, Ting Yu, Jindan Xia, Dasheng Yu, Jun Wang and Xiaodong Zheng

Citation Biological Control, Volume 53, Issue 2, May 2010, Pages 178-182

Keywords *Botrytis cinerea*; *Rhodosporidium paludigenum*; Cherrytomato; Marine antagonist; Biological control

Abstract

The marine yeast *Rhodosporidium paludigenum* was tested for its biocontrol efficacy in reducing postharvest gray mold of cherrytomatoes caused by *Botrytis cinerea* *in vitro* and *in vivo* tests. A previously unreported gray mold antagonist, *R. paludigenum*, significantly reduced disease incidence on cherrytomatoes. The results showed that suspensions containing 1×10^8 CFU/ml washed cells of *R. paludigenum* provided the highest levels of inhibition of gray mold, while the unwashed cell suspension provided less protection against the disease after 5 days at 25 °C. Increasing concentrations of *R. paludigenum* influenced decay incidence in cherrytomatowounds: the disease incidence decreased as the concentration of *R. paludigenum* was increased. Moreover, in the small-scale experiment, the incidence of gray mold on cherrytomatoes treated with *R. paludigenum* was 14.7% and 46.3% of the control at 15 °C after 10 days, respectively. In cherrytomatowounds, the population of *R. paludigenum* reached peak levels 72 h after inoculation, and then began to decline slowly. In conclusion, our results showed that competition for nutrients may have an important role in biological control of gray mold of cherrytomatoes with *R. paludigenum*.