

### Abstract

A new yeast antagonist, *Pichia membranefaciens*, isolated from wounds of peach fruit, was evaluated for its biocontrol capability against *Rhizopus stolonifer* on nectarine fruits at different temperatures and with other treatments. *P. membranefaciens* at  $5 \times 10^8$  CFU/ml of washed-cell suspension completely inhibited Rhizopus rot in nectarine wounds artificially inoculated with  $5 \times 10^4$  spores per ml at 25, 15, and 3°C. A culture filtrate of the yeast antagonist failed to provide any protection against Rhizopus rot in nectarine fruits. The yeast mixed with iprodione at 100 µg a.i./ml gave better control of *R. stolonifer* than either yeast or iprodione alone. A solution of 20 g CaCl<sub>2</sub> per liter enhanced the efficacy of *P. membranefaciens* ( $10^7$  to  $10^8$  CFU/ml) as an aqueous suspension. Rapid colonization of the yeast in wounds was observed during the first 48 h at 25 and 15°C. *P. membranefaciens* at  $5 \times 10^8$  CFU/ml was effective when applied 0 to 72 h before the pathogen, while at  $1 \times 10^8$  CFU/ml, its efficacy was best when applied 24 to 48 h prior to inoculation with *R. stolonifer*. However, its efficacy was significantly reduced when the yeast was applied simultaneously with the pathogen, with disease incidence of 60% and lesion diameter of 37 mm.