

P_C5**Biological control of postharvest green mould (*Penicillium digitatum*) of oranges by yeasts and bacteria****Bettiol, W.^{1*}; Mattos, L.P.V.²**¹Embrapa Environment, CP 69, 13820-000 Jaguariúna, SP, Brazil, e-mail: bettiol@cnpmma.embrapa.br.

*CNPq Scholarship

²UNESP/FCA-Botucatu, CP. 18.610-307, Botucatu, SP, Brazil

Pichia guilliermondii (L29), *Sporobolomyces roseus* (L41), *Rhodotorula mucilagenosa* (L17), *Sporodiobolus pararoseus*, *Pichia* spp. (L4-1), *Debaryomyces hansenii* (L62), and *Pichia membranifaciens* (L21), previously selected for the control of postharvest disease on apple, and the commercial product *Bacillus subtilis* (Serenade[®]), and *Bacillus subtilis* + *Bacillus licheniformis* were evaluated for its activity in reducing postharvest green mould decay of 'Pera' oranges fruit caused by *Penicillium digitatum* *in vivo* and *in vitro*. Oranges were wounded with a sterile puncher in two opposite points in the equatorial region, reaching the albedo. Wounds were then inoculated with 20 µL of a spore suspension (10^5 spores mL⁻¹) of the pathogen *P. digitatum*. Fruits were then submerged in aqueous suspension of each biocontrol agent at 10^8 CFU mL⁻¹. The fruit treatments were made 24 h prior inoculation, immediately after inoculation or 24 h after inoculation with the pathogen. Sterile water and Tecto[®] were used as control and standard treatment, respectively. Then, all fruits were incubated at 25 ± 2 °C and 85-90 % relative humidity and the disease progress was evaluated by measuring the lesions diameter after six days incubation. The effect of biocontrol agents, at 10^5 to 10^8 CFU mL⁻¹ concentrations, on spore germination of pathogen was evaluated by microscopy. The biocontrol agents controlled green mould in similar levels as compared to the fungicide treatment. Efficacy of biocontrol agents was maintained when applied prior or simultaneously to the pathogen inoculation; however, the efficacy was reduced for several bioagents when applied after inoculation. Biocontrol agents at 10^5 to 10^8 CFU mL⁻¹ concentrations reduced the spore germination, and *S. roseus* (L41), *R. mucilagenosa* (L17), *S. pararoseus*, *D. hansenii* (L62), and *P. membranifaciens* (L21) were able to inhibit 100 % of spore germination. The biocontrol agents did not change the fruit flavours. This study demonstrates that cell suspensions of biocontrol agents can significantly reduced green mould, caused by *P. digitatum*, on orange.