

Influence of paraben concentration on the development of green and blue molds on 'Valencia' orange fruit

Pedro A. Moscoso-Ramírez, Clara Montesinos-Herrero, Lluís Palou

Acta Horticulturae 1065: 1633-1637. 2015.

Abstract

Three paraben sodium salts (*p*-hydroxy-benzoate) were evaluated as postharvest treatments to control citrus green (GM) and blue (BM) mold, caused by *Penicillium digitatum* and *Penicillium italicum*, respectively. The curative activity of sodium methyl (SMP; at 0.1, 1, 10, 40, 70, 100, 150, 200 and 250 mM), ethyl (SEP; at 0.1, 1, 10, 20, 30, 40, 70, and 100 mM) and propyl (SPP; at 0.1, 1, 4, 7, 10, and 100 mM) paraben were evaluated on 'Valencia' oranges by inoculating the pathogens in rind wounds and, about 24 h later, placing a drop of the solutions in the same rind wound. Disease development was assessed on fruit incubated at 20°C for 6 days. All three paraben salts reduced mold development. Concentrations of 150, 200 and 250 mM of SMP were the most effective and completely controlled both diseases. Concentrations of 20, 30, 40, 70 and 100 mM of SEP reduced the incidence of GM and BM by 100, 94, 100, 100 and 73% and 87, 62, 93, 100 and 80%, respectively. Concentrations of 7, 10 and 100 mM of SPP reduced the incidence of GM and BM by 94, 89 and 94% and 70, 88 and 100%, respectively. Most of these concentrations of SMP, SEP and SPP also significantly reduced the severity of GM and BM. SMP at 200 mM, SEP at 70 mM and SPP at 100 mM were, among the range of concentrations tested, selected as the best to be used in further research.