

**Title** Postharvest management of gray mold and brown rot on surfaces of peaches and grapes using electrolyzed oxidizing water

**Author** Jane L. Guentzel, Kang Liang Lam, Michael A. Callan, Stuart A. Emmons and Valgene L. Dunham

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### Abstract

This study evaluated the potential use of near-neutral (pH = 6.3–6.5) electrolyzed oxidizing water (EO water) to inactivate pure cultures of *Botrytis cinerea* and *Monilinia fructicola* and to mitigate fungal infection of these organisms on fruit surfaces. Treatment of these organisms, in pure culture, with EO water at concentrations of 25, 50, 75, and 100 ppm total residual chlorine (TRC) and 10 min of contact time resulted in a 6 log<sub>10</sub> spores/mL reduction of both organisms. A dip treatment or a dip and daily spray treatment of EO water were used to evaluate its ability to prevent or delay the onset of surface infection on fruit during postharvest packaging and in retail shelf environments. A 10 minute dip treatment of surface inoculated peaches (*M. fructicola*) in EO water prevented infection for 3 days and resulted in a 12.5% incidence of infection and a disease severity rating of 6% after 5 days of storage at 25 °C. Dipping of green table grapes inoculated with *B. cinerea* into EO water prevented infection for 7 days and resulted in a 1% incidence of infection and a disease severity rating of 2% after 10 days of storage at 25 °C. A dip and daily spray of peaches with EO water prevented infection for 12 days and resulted in a 10% incidence of infection and a 6% disease severity after 14 days of storage at 25 °C. A dip and daily spray of grapes with EO water prevented infection for 24 days and resulted in a 2% incidence of infection and a disease severity rating of 2% after 26 days of storage at 25 °C. The results from this study suggest that these solutions may prove to be effective for postharvest sanitation of fruit surfaces prior to packaging and may increase the shelf life of the fruit in commercial settings.