

Title Control of green mold and sour rot of stored lemon by biofumigation with *Muscodor albus*  
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### Abstract

Control of postharvest lemon diseases by biofumigation with the volatile-producing fungus *Muscodor albus* was investigated. In vitro exposure to *M. albus* volatile compounds for 3 days killed *Penicillium digitatum* and *Geotrichum citri-aurantii*, causes of green mold and sour rot of lemons, respectively. Lemons were wound-inoculated with *P. digitatum* and placed in closed 11-L plastic boxes with rye grain cultures of *M. albus* at ambient temperature. There was no contact between the fungus and the fruit. Biofumigation for 24–72 h controlled green mold significantly, even when treatment began 24 h after inoculation. Effectiveness was related to the amount of *M. albus* present. In tests conducted inside a 11.7-m<sup>3</sup> degreening room with 5 ppm ethylene at 20 °C, green mold incidence on lemons was reduced on average from 89.8 to 26.2% after exposure to *M. albus* for 48 h. Ethylene accelerates color development in harvested citrus fruit. *M. albus* had no effect on color development. Biofumigation in small boxes immediately after inoculation controlled sour rot, but was ineffective if applied 24 h later. *G. citri-aurantii* may be less sensitive to the volatile compounds than *P. digitatum* or escapes exposure within the fruit rind. Biofumigation with *M. albus* could control decay effectively in storage rooms or shipping packages.