

### Abstract

In vitro, spores of *Penicillium digitatum* germinated without inhibition between pH 4 and 7, but were inhibited at higher pH. Estimated concentrations of imazalil (IMZ) in potato-dextrose broth-Tris that caused 50% reduction in the germination of spores (ED(50)) of an IMZ-sensitive isolate M6R at pH 4, 5, 6, and 7 were 0.16, 0.11, 0.015, and 0.006 µg/ml, respectively. ED(50) IMZ concentrations of an IMZ-resistant isolate D201 at pH 4, 5, 6, and 7 were 5.9, 1.4, 0.26, and 0.07 µg/ml, respectively. The natural pH within 2-mm-deep wounds on lemon was 5.6 to 5.1 and decreased with fruit age. IMZ effectiveness to control green mold and its residues increased with pH. The pH in wounds on lemon fruit 24 h after immersion in 1, 2, or 3% NaHCO<sub>3</sub> increased from pH 5.3 to 6.0, 6.3, and 6.7, respectively. NaHCO<sub>3</sub> dramatically improved IMZ performance. Green mold incidence among lemon fruit inoculated with M6R and treated 24 h later with IMZ at 10 µg/ml, 1% NaHCO<sub>3</sub>, or their combination was 92, 55, and 22%, respectively. Green mold among lemon fruit inoculated with D201 and treated 24 h later with water, IMZ at 500 µg/ml, 3% NaHCO<sub>3</sub>, or their combination was 96.3, 63.0, 44.4, and 6.5%, respectively. NaHCO<sub>3</sub> did not influence IMZ fruit residue levels.