

Title The effectiveness of pyrimethanil to inhibit germination of *Penicillium digitatum* and to control citrus green mold after harvest

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Abstract

Pyrimethanil (PYR) has recently been approved for postharvest use on citrus fruit to control green mold, caused by *Penicillium digitatum*. The EC₅₀ of PYR to inhibit germination of *P. digitatum* spores was 0.2–0.4 mg/L and was similar from pH 4 to 7. Green mold on citrus fruit was reduced more than 90% by PYR at 500 mg/L or higher applied by immersing for 30 s or drenching the fruit, while its application in wax over rotating brushes at 1000 or 2000 mg/L reduced green mold about 65%. Control of sporulation by PYR in aqueous solutions was better than the same concentration applied in wax, but it was inferior to imazalil. An imazalil-resistant *P. digitatum* isolate was controlled by PYR. The addition of sodium bicarbonate improved PYR performance.

PYR was not compatible with chlorine. An increase in the temperature of the PYR solution slightly but significantly improved its effectiveness to control green mold, although its residues on fruit were greatly increased by heat; they approximately doubled for each 5 °C increase in solution temperature above 30 °C. PYR was very effective when applied up to 24 h after inoculation, but much less effective when it was applied before inoculation. PYR effectively controls green mold and can be useful to control isolates of *P. digitatum* resistant to other fungicides.