

Title Control of green mold (*Penicillium digitatum*) on tangerine fruit by hot water and imazalil treatment, and with antagonistic yeasts

Author Somsiri Sangchote

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Abstract

Hot water at 50, 52, 54 and 56°C was applied to tangerine fruit cv. 'Sai Namphaung to control green mold by dipping fruits for 2 min. Hot water at 52, 54 and 56°C reduced decay significantly on treated fruits to 75, 66.7, 43.3 and 20% respectively. Combination of hot water at 56°C and imazalil at 500 ppm for 2-min dipping completely controlled the disease. Four selected yeasts including *Candida utilis*, *Candida tropicalis*, *Debaromyces hansenii*, and *Pichia* sp. were evaluated for their antagonistic properties in controlling green mold on citrus fruit. *Candida* was promising yeast. Application of *C. utilis* suspensions 12 or 24 hr before pathogen inoculation showed the lowest diseases incidence (0%) as compared with application of yeasts and pathogen at the same time (20.5, 46.2%) or application of yeasts 12 or 24 hr after pathogen inoculation (41.0, 61.5%). *Candida utilis* had an effect on spore germination and germ tube elongation of *P. digitatum* on citrus fruits. Application of *C. utilis* in combination with 2% sodium bicarbonate on citrus fruits before inoculation of *Penicillium digitatum* gave complete control as compared with 2% sodium bicarbonate and antagonistic yeast alone.