Effect of Heat Treatment on Green Mold Infection in Tangerine Fruit cv. Sai Num Pung

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ABSTRACT

The effect of heat treatment on Penicillium digitatum infection which caused green mold rot in tangerine fruit cv. Sai Num Pung was studied. Fungus was dipped in hot water at 45±2, 50±2 and 55±2°C for 0.5, 1, 2 and 3 minutes/ each treatment. The results showed that hot water dip at 55±2°C for 3 minutes was the best in delaying P. digitatum spore germination when incubated fungus at 25±2°C in darkness for 48 hours. Dipping tangerine fruit in hot water at the temperature and time mentioned above before and after inoculation compared with the control fruits that were inoculated by fungus and without hot water dip and uninoculated fruit reduced disease severity (lesion diameter) from 9.68 cm. to 0.32 cm. Dipping tangerine fruit in hot water at 50±2°C for 3 minutes and 55±2°C for 2 and 3 minutes after inoculation was able to delay disease incidence and severity and reduced sporulation index of P. digitatum when stored at 24±2°C and 90±5% relative humidity for 5 days.

Key words: Tangerine fruit, Citrus fruit, Green mold rot, Hot water treatment.

INTRODUCTION

Tangerine fruit is the most economically important citrus crop in Chiang Mai (Thailand). The most widely grown cultivar is Sai Num Pung. Owing to the fact that tangerines are smaller than other citrus fruits and the peel structure is thinner, so they can be easily damaged (SARDI Citrus Information, 2007). Damage in terms of injuries which occurs during harvest and subsequent handling allows the entry of wound pathogens, including *Penicillium digitatum* Sacc., the causal agent of green mold rot. This pathogen is prevalent in almost all regions of the world where citrus is grown, and causes serious postharvest losses annually (Palou et al., 2001; Obagwu and Korsten, 2003). Postharvest chemical treatments are very effective in controlling decay and are widely used on citrus. Recently,