

Abstract

The mode of actions and effectiveness of hot water treatment with iodine were evaluated and integrated with systemic acquired resistance for an alternative to fungicide control of postharvest melon rots. Hot water at 15°C significantly reduced storage rot of melons caused by *Fusarium acuminatum* inoculated 24 hours after dipping. Reduction of rot was in part due to resistance induced from postharvest heat shock on melon, as indicated by the increased activity of peroxidase. However, the germicidal effects of hot water, iodine at room temperature or hot iodine reflects that the most of the reduction of rots occurred, when these treatments were applied as postharvest dips. Dipping melons in hot iodine at 55°C was as effective as the commercial fungicide guazatine at 500 ppm to control the storage rots. Treatment of melons with hot iodine at 30 ppm increased storage life and maintained fruit firmness to a similar level as that resulting due to fungicide treatment. Field plants treated with 2,6-dichloroisonicotinic acid (INA) or benzothiadiazole (BTH) two weeks before harvest reduced storage rots of rockmelons due to the induction of systemic acquired resistance (SAR). Integration of iodine in hot water as postharvest dip treatment for the SAR induced fruits treated in the field gave good control of postharvest rots. Indeed, the total reduction of rots by the induction with INA or BTH in the field and then a postharvest dip with hot iodine was much greater than control due to dipped non-induced in a commercial fungicide (guazatine).