

Title Control of citrus postharvest green and blue mold and sour rot by tea saponin combined with imazalil and prochloraz

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Abstract

Tea saponin (TS), generally regarded as a safe compound, was evaluated to control postharvest decay of citrus fruit. TS inhibited mycelial growth and spore germination of *Penicillium italicum*, *P. digitatum* and *Geotrichum candidum*. The influence of TS on the growth of hyphae and germination of spores of *P. italicum*, *P. digitatum* and *G. candidum* was determined individually and in combination with imazalil and prochloraz. The results indicated the best ratio of TS (8:2) with a low rate of prochloraz or imazalil to control *P. italicum*, *P. digitatum* and *G. candidum*. TS was compatible with these fungicides at this ratio and consistently improved their performance to control blue mold, green mold or sour rot on inoculated 'Shatang' mandarin fruit and the combination also could prolong the persistence of TS residues in the fruit. The level of disease control provided by the synergistic combinations tested was higher than that of the individual treatments of these fungicides. TS alone or in combination with a low rate of prochloraz or imazalil significantly reduced postharvest decay in 'Shatang' mandarin fruit without impairing any of the other fruit quality parameters.