

Title The fungus contamination in citrus storage rooms and the decay incidence: Are they strongly related?

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Abstract

The relationship between the fungus contamination level in the ambient during degreening citrus fruits and the final incidence of decay was evaluated in this preliminary study in commercial rooms of Tarragona (Catalonia). Fruit (clementines and oranges) were superficially disinfected using a chlorine solution of 400 ppm free chlorine for 2 minutes and subsequently tap water rinsed to assure superficial fungal inoculum was eliminated. After drying, fruits were wounded with a steel rod in order to facilitate the infection by ambient contamination, and placed in several citrus degreening rooms under commercial degreening conditions (19-21°C, 2-5 ppm of ethylene and less than 2.500 ppm of CO₂). After 3 days fruits were incubated in aseptic conditions at 20°C. Control treatment was directly incubated in these aseptic conditions after superficial disinfection and wounding. After 5 days incubating data were recorded as the percentage of decayed fruits. Simultaneously, fungal contamination level in the ambient of the room was determined at the beginning and after these 3 degreening days collecting fungal spores on opened plates placed near experiment for 5 minutes by gravity. Results indicated that fruits exposed for 3 days at a low contamination level (less than 5 colonies of *Penicillium digitatum* and *P. italicum* per plate) developing 3.7% rot decay on Navelina oranges and 7.5% on Fina clementines. On the other hand, fruits exposed at higher contamination level (more than 15 conidia per plate of *P. digitatum* and *P. italicum*) resulted in 7.5 and 6.2% rot decay on Navelina oranges and Fina clementines, respectively. In conclusion, ambient contamination of degreening rooms must be checked and reduced as much as possible because low contamination levels can even cause important losses during postharvest period.