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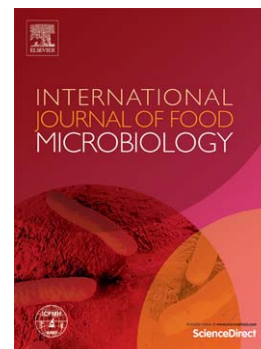
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To disinfect or not to disinfect in postharvest research on the fungal decay of apple?

Matthias Naets^a, Mattias Van Dael^a, Els Vanstreels^b, Dirk Daelemans^b, Pieter Verboven^a,
Bart Nicolai^{a,c}, Wannas Keulemans^d, Annemie Geeraerd^{a,*}

^aKU Leuven, Department of Biosystems (BIOSYST), Division of MeBioS, Willem de Croylaan 42, B-3001 Leuven, Belgium

^bKU Leuven, Rega Institute for Medical Research, Department of Immunology and Microbiology, Laboratory of Virology and Chemotherapy, B-3000 Leuven, Belgium

^cVCBT, Flanders Centre of Postharvest Technology, Willem de Croylaan 42, B-3001 Leuven, Belgium

^dKU Leuven, Department of Biosystems (BIOSYST), Division of Crop Biotechnics, Laboratory for Fruit Breeding and Biotechnology, Willem de Croylaan 42, B-3001 Leuven, Belgium

Abstract

Postharvest losses of fruit and vegetables can reach up to 30 %, the main cause being microbial decay. For apple fruit, mostly fungal pathogens, such as *Penicillium expansum*, *Colletotrichum* spp., *Neofabraea* spp. and *Botrytis cinerea*, are important. As such losses are unsustainable in many ways, it is necessary that research is conducted to prevent them. Generally, for plants and fruit grown under non-sterile field conditions, disinfection is carried out prior to the start of a phytopathological experiment. The motivation for this practice is the removal of background contamination so that it will not affect the experimental outcome and its interpretation. In literature, a plethora of disinfection methods exists, differing in disinfectant, strength and duration. The following two disinfectants are commonly used: sodium hypochlorite (NaOCl) and ethanol. This article presents a targeted investigation into the effects of these two disinfectants on apple fruit surface and physiology. The results clearly demonstrate that both were affected by both disinfectants. NaOCl caused oxidative damage to the apples wax layer, causing it to crack. Ethanol affected a redistribution of the wax on the fruit surface and altered the wax composition and/or metabolism. Both NaOCl and ethanol treatment resulted in an increased respiration

*Corresponding author

Email address: annemie.geeraerd@kuleuven.be; tel:0032/16.37.05.91 (Annemie Geeraerd)

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