Abstract

Eighty per cent of the total tomato postharvest losses in pre-packaged and loose tomato fruits in Mexico were caused by *Alternaria* rot and *Rhizopus* rot. A sensor was developed to detect *Rhizopus stolonifer* infected tomatoes using three relative humidity sensors. Green and red mature tomatoes were inoculated with *R. stolonifer* conidia on a wound and stored for 5 days. A small extractor sucked moist air from the tomato peduncle scar through a measuring cavity. The relative humidity of air exiting from the peduncle scar was differentiated from the ambient air relative humidity and amplified in order to obtain a value which could predict infected tomatoes. A compression surface applied a controlled pressure to green and red infected tomatoes which were detected with accuracies of 91 and 89%, respectively. Peduncle scar measurements are more useful as infected tomatoes can be monitored non-dependent on its maturity stage and within all the fruit.