Abstract

Postharvest tomato fruits were treated with the hormic UV dose (3.7 kJ/m^2) and changes in ultrastructure examined by Transmission Electron Microscopy. It was observed that UV induced plasmolysis of the epicarp and of a few mesocarp cell layers leading to the formation of the cell wall stacking zone (CWSZ). In treated fruits inoculated with *B. cinerea* fungal development was restricted to the outer fruit tissues. Ingress of the fungus was hindered by the CWSZ. In the control fruits rapid tissue breakdown was observed. Cytochemical labeling for cellulose and pectin revealed that the CWSZ was less prone to degradation by the cell-wall degrading enzymes secreted by the fungus. In control fruits, wound inoculation resulted in extensive growth of the fungus and breakdown of the host tissue. In UV-treated fruits, hypersensitive death of the host cell at the site of inoculation was evident and the fungus displayed extensive damages. It was concluded that UV induced resistance of tomato to *B. cinerea* was related to the activation of both physical and biochemical defense mechanisms.