

Effect of exogenous auxin treatment on cell wall polymers of strawberry fruit

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Abstract

The role of auxin in the fruit-ripening process during the early developmental stages of commercial strawberry fruits (*Fragaria x ananassa*) has been previously described, with auxin production occurring in achenes and moving to the receptacle. Additionally, fruit softening is a consequence of the depolymerization and solubilization of cell wall components produced by the action of a group of proteins and enzymes. The aim of this study was to compare the effect of exogenous auxin treatment on the physiological properties of the cell wall-associated polysaccharide contents of strawberry fruits. We combined thermogravimetric (TG) analysis with analyses of the mRNA abundance, enzymatic activity, and physiological characteristics related to the cell wall. The samples did not show a change in fruit firmness at 48 h post-treatment; by contrast, we showed changes in the cell wall stability based on TG and differential thermogravimetric (DTG) analysis curves. Less degradation of the cell wall polymers was observed after auxin treatment at 48 h post-treatment. The results of our study indicate that auxin treatment delays the cell wall disassembly process in strawberries.

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Author keywords

Auxin inhibitor; Auxin treatment; Cell wall polymer; Strawberry fruit; Thermogravimetry analyses