

Abstract

The influences of controlled atmosphere (CA) and storage time on ultrastructural degradation of chelate-soluble pectin (CSP) in yellow peaches (*Prunus persica* L. Batsch.) were investigated. Freshly harvested peaches were stored at 2 °C under CA (CA1, 2% O₂ + 10% CO₂; CA2, 5% O₂ + 5% CO₂) or regular atmosphere conditions. Qualitative and quantitative aspects of CSP polymers were studied by atomic force microscopy (AFM) on the initial, the 15th and the 45th days. The frequency of small width CSP observations increased with time in both groups, but was greater in the regular atmosphere group, indicating CA conditions inhibited the degradation of CSP molecules. Widths of CSP chains were composed of four basic units with widths of 17.578, 19.531, 23.438 and 29.297 nm from the AFM determination. These results indicate that parallel linkages or intertwists between the basic units are fundamental structural conformations for CSP molecules.