Abstract

During the last stage of fig (*Ficus carica* L.) fruit development, profound cell wall modification processes occur as indicated by increase in fruit size and tissue softening. In this study, we characterized the changes in cell wall polysaccharides taking place within the distinct and separate tissues of the receptacle and the pulpy drupelets during sequential ripening in fig fruit. The pectic extracts had high uronic acid contents in addition to high amounts of Ara, Gal and Rha. The gel filtration profile of the water-soluble polymers at the ripening onset in drupelets were different when compared to those of the receptacle, even though in both tissues, these polymers underwent increased solubilization and depolymerization during ripening. The molecular downshift of the CDTA-soluble polymers and the decrease in the amounts of both the uronic acid and total sugars were more pronounced in the drupelets than in the receptacle. Major difference in the neutral sugar composition between the two tissues was only observed in the Na_2CO_3-soluble fraction. The xyloglucan polymers in 4% KOH fraction exhibited a molecular size downshift accompanied by a decline in Xyl and increase in Glc. In the 24% KOH fractions of both tissues, the total sugar and xyloglucan components decreased in amount and also exhibited a molecular size downshift during ripening. These data suggest that even though quantitative and qualitative changes in cell wall polysaccharides occurred during ripening in both tissues, qualitative variations between tissues occurred only in the pectic polymers but not in the hemicellulosic polymers.