

### Abstract:

Ascorbic acid (AsA) oxidizes rapidly in an aqueous solution and/or in the presence of copper ions. UV absorbance of an aqueous solution of AsA decreased remarkably with time and had nearly disappeared after 12h. When the fraction extracted with water from alcohol-insoluble residue of fruit flesh was added to an AsA solution, the decrease in UV absorption slowed compared with the control. Among 18 cultivars of fruits the fraction from the flesh of melon, loquat, and strawberry demonstrated remarkable effect in maintaining UV absorbance (higher antioxidant activity), while that of grape, mango and kiwifruit showed lower activity. Among the fractions extracted with water, hot water and HCl successively, water and hot water soluble fractions showed antioxidant activity, while less activity was found in the HCl soluble fraction. In apple and pear fruit, the activity varied with cultivar, and increased with maturity, and by storage in apple. Using fractionation by gel permeation chromatography, water and hot water soluble fractions from apple flesh were separated into four subfractions, and antioxidant activity of each subfraction was evaluated. The highest activity was found in the sub-fraction in which included lower molecular-weight substances. In an AsA solution with added CuSO<sub>4</sub>, UV absorbance decreased quickly and had nearly disappeared within 15 min. In a mixture of hot water fraction, CuSO<sub>4</sub> and AsA, UV absorbance decreased slightly at a slower rate compared with the solution without the hot water fraction. In an AsA solution with pectin from apples and lemons, the decrease in UV absorbance was noticeably inhibited. Pectins with a low rate of esterification displayed a relatively higher level of activity than those with a high rate of esterification. These results suggest that comparatively low molecular and low esterified pectic compounds could possess antioxidative ability.