

### **Abstract**

Changes in cell wall polysaccharides associated with fruit softening under storage conditions at 20°C were compared between 'Wasada-uri', a "five-carpel type" melon, accession and 'Prince', a "three-carpel type" melon cultivar.

The storage life of 'Prince' was 10 days while that of 'Wasada-uri' was more than 20 days. Ethylene production of 'Prince' showed a peak on day 2 and rapidly decreased thereafter but that of 'Wasada-uri' remained low until day 15 and increased slightly thereafter.

Carbon dioxide production in both varieties was the highest at fruit harvest and decreased rapidly during storage. Fruit and flesh firmnesses of both varieties decreased continuously during storage but a distinct difference was observed only in the flesh, resulting in the firmness of 'Prince' flesh decreasing to only 44-16% of that of 'Wasada-uri'. In the water-soluble pectin fraction, uronic acid concentration of 'Prince' increased linearly until day 5 but that of 'Wasada-uri' remained low. In the Na<sub>2</sub>CO<sub>3</sub>-soluble fraction, however, the uronic concentrations of 'Wasada-uri' increased from day 3 to 5 but those of 'Prince' decreased successively from day 2 to 10.

Neutral sugar concentrations in Na<sub>2</sub>CO<sub>3</sub>-soluble fractions decreased successively during storage but there was no apparent difference between the varieties. In the Na<sub>2</sub>CO<sub>3</sub>-soluble fraction, however, 'Wasada-uri' showed higher galactose but lower arabinose concentrations as compared to those of 'Prince'. Cellulose concentrations of 'Wasada-uri' were 15-43% higher than those of 'Prince' but the values changed slightly during storage.