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**Characteristics of pectic polysaccharides of cell walls of Cucurbita mostacha cultivar (Wattakka)**

Pectin is a major cell wall polysaccharide of parenchymatous tissues of edible plant material. Fruits and vegetables contain approximately 35% cellulose, 15% hemicellulose, 40% pectins, 5% protein and 5% phenols. This study investigates the characteristics of pectic polysaccharides of cell wall polymers of Wattakka, *Cucurbita mostacha*.

The cell wall material of frozen edible tissues of Wattakka was isolated as Cold-Alcohol Insoluble Residue (CAIR), by homogenizing with ethanol (85% v/v, final concentration) at 20

°C, filtering and freeze drying. CAIR was sequentially extracted with cyclohexane – trans 1,2 diaminetetra-acetate (CDTA, Na salt, 0.05 M, pH 6.5) 6 h, 20 -22 °C, CDTA (Na salt, 0.05 M, pH 6.5) 2 h, 20°-22°C, Na<sub>2</sub>CO<sub>3</sub> (0.05 M) 24 h, 8° C and Na<sub>2</sub>CO<sub>3</sub> (0.05 M) 2 h, 20 -22 °C. The extracts were purified using anion exchange chromatography (DEAE Trisacryl M, Phosphate form) and eluted using Phosphate buffer (50 mM, pH 6.5, containing 0.125 M to 1M NaCl). Sugar compositions of the fractions were determined as alditol acetates by GC techniques, after acid hydrolysis (12 M H<sub>2</sub>S04). Uronic acid content was determined by a colorimetric method.

Results showed that 29.6% was isolated as CAIR from the original sample. The recoveries of CDTA-1 and CDTA-2 fractions were 23.4% and 1.3% respectively, with the largest soluble fraction containing bulk of the pectic polysaccharides (90%) obtained from the middle amella. The branching points (rhamnose: galacturonic acid) were at a ratio of 1: 38 and 1: 30 respectively. In contrast, Na<sub>2</sub>CO<sub>3</sub> –1 and Na<sub>2</sub>CO<sub>3</sub> –2 fractions had low yields (2.5% and 1.2%), with more branching points at 1:22 and 1:25 (rhamnose : galacturonic acid) which is a characteristic of primary cell walls. The major fraction obtained by anion exchange chromatography (CiA) contained 87% uronic acid, with a rhamnose: uronic acid ratio of 1: 44. The major neutral sugar in all fractions was found to be galactose. The pectic polysaccharides accounted for approximately 80 % of the of cell walls of wattakka, which contained galactan as the major neutral side chains of the rhamnogalactouronan backbone.