

Purification, characterization and antioxidant activity of polysaccharides extracted from the fibrous pulp of *Mangifera pajang* fruits.

ABSTRACT

Polysaccharides were isolated from the fibrous pulp of bambangan (*Mangifera pajang* Kort.). Neutral and acidic polysaccharides were separated using DEAE-Cellulose. Size exclusion chromatography analyses showed that the average molecular weight (MW) of the neutral *M. pajang* polysaccharides (F1) was approximately 7 kDa, and those of three acidic polysaccharides (F2, F3 and F4) were approximately 13, 24 and 9 kDa, respectively. The monosaccharide compositions of these polysaccharides were determined using high performance liquid chromatography. F1 contained erythrose, rhamnose, arabinose, mannose, fructose and glucose (5, 7, 21, 42, 4 and 21 mg/100 mg fraction respectively), F2 consisted of rhamnose, xylose and arabinose (33, 7 and 51 mg/100 mg fraction respectively), F3 consisted of fructose (14 mg/100 mg fraction) and glucose (72 mg/100 mg fraction), and F4 comprised arabinose, mannose, fructose and glucose (32, 36, 2 and 10 mg/100 mg fraction respectively). Results of Fourier transform infrared spectroscopy and the monosaccharide compositions suggested that the fibrous pulp of *M. pajang* fruit consisted of heteropolysaccharide and belonged to α and β -type of the pyran group. Additionally, crude polysaccharide and its fractions showed strong antioxidant activities. The acidic polysaccharides had the highest antioxidant activity and should be considered as a prospective antioxidant.

Keyword: *Mangifera pajang* Kort.; Polysaccharides; Purification; Characterization; Antioxidant activity.