

E2-01 Utilization of pumpkin *Cucurbitaceae* spp. pectin as a stabilizer in frozen desserts

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Pectin, a polysaccharide occurring in cell walls and intercellular layers of plant tissues has wide application in the food industry e.g. gelling agents, stabilizers, bulking agents. Pectin of citrus peel and apple pomace are used presently at commercial levels.

This study reports on the application of partially purified pectins from pumpkin as stabilizer in dietetic frozen desserts.

Pectin was extracted and isolated from two locally available *Cucurbita* spp. (*C. maxima* and *C. moschata*) using two methods. Method (1): Fresh pumpkin flesh was blended with water 1;10 w/v), extracted in conc. HCl (at pH 1.34, 65°C, 2h) filtered and precipitated with alcohol and dried at 30-40°C. Method (2): Juice extracted from fresh pumpkin was filtered and pressed through a muslin cloth. The residue was adjusted to a pH of 1.34 using 0.1 N HCl, filtered and continued as in Method 1.

The emulsion stabilizing properties of pectin in *C. maxima* were studied by formulating a dietetic frozen dessert using 1.15% and 0.5% pectin. A sensory evaluation was also carried out by a panel of trained judges.

Results showed that Method 2, had generated a less yield of pectin in *C. maxima* (2.41 - 17.11%) as compared to *C. moschata* (4.89 - 7.95%). Both species contained high methoxyl rapid set pectins, while the acetyl value was higher in *C. moschata* (2.47 - 2.58%). The purity of pectin expressed as galacturonic acid, ranged from 47.43 - 77.38% and 20.27 - 31.62% for *C. maxima* and *C. moschata*, respectively.

The emulsion stability rate of pumpkin pectin (53-90%) was higher than that of apple pectin (40%). Sensory studies on the frozen dessert showed that pumpkin pectin at 1.15% was better accepted as a stabilizer, compared to that of commercial apple pectin, determined statistically by ranking/Friedman Test ($p=0.05$).

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