E-06

SOME (APPLIED) CHEMICAL STUDIES ON COCOA HUSK ENDOCARP

E. V. Packiyasothy, M. Mallawaratchie, E. R. Jansz
(Natural Products and Food Technology Sections, Ceylon Institute of Scientific and Industrial Research, Colombo 7)

and

A. Bamunuarachchi
(Department of Chemistry, Sri Jayawardenapura University, Nugegoda)

Cocoa husk is disposed of as waste in Sri Lanka's Cocoa Industry. The use of cocoa husk endocarp as a source of pectin for the food industry has been considered feasible. Two approaches have been considered. Firstly the use of cocoa endocarp directly in jams. This was hindered by the manifestation of a browning reaction which discoloured the jams. This reaction was inhibited by controlled blanching and dipping in sodium meta-bisulphite solution under optimum conditions of temperature, time and concentration. After grinding and sieving, the endocarp was incorporated into several jams made of tropical fruit and evaluated by a taste panel. The only deleterious property was its reduced transparency. Treated and dried cocoa endocarp yielded the following data on chemical analysis : (expressed as %), Sucrose (5.2), Reducing sugar (5.6), Starch (20), Pectin (10), Fibre and cellulose (22), Ash (4.4), Fat (0.9), Protein (3.7), K^+ (0.7), Na^+ (0.08), Ca^{2+} (0.35), Mg^{2+} (0.2).

The second approach was to prepare jam by isolating the endocarp pectin. This results in a better quality jelly. The process can be conducted using the standard pectin isolating methods of alcohol, calcium salt or aluminium salt precipitation with recoveries of 90-100%. The methoxyl and acetyl value of the pectin was 5.9 and 4.0% respectively. Although the setting time of the pectin was slower than commercial 150 jelly grade pectin, no other problems were encountered.

This work is part of the MSc thesis (Sri Jayawardenapura University) of E. V. Packiyasothy.