Nikorn Sornprom 2007: Extraction and Purification of Anacardic Acid from Cashew Nut Shell. Master of Engineering (Chemical Engineering), Major Field: Chemical Engineering, Department of Chemical Engineering.
Thesis Advisor: Assistant Professor Attasak Jaree, Ph.D. 69 pages.

Cashew nut shell (CNS) is a natural resource for polyphenols. Among them is anacardic acid, which can be isolated from the rest by several means. This work aimed for solvent extraction of anacardic acid directly from crushed cashew nut shell. A series of physical and chemical treatments were applied including grinding, extraction, acid-base reaction, and thermal decomposition. The effects of extraction temperature, solvent-to-CNS ratio, and types of organic solvent on the yield of anacardic acid were investigated. Extraction experiments were carried out at 30°C and 50°C using n-hexane, methanol, and ethanol as solvent. The solvent-to-CNS ratio was varied from 40 ml: 10 g to 100 ml: 10 g. Results indicated that the ratio of 80 ml: 10 g was adequate for extracting all of anacardic acid from CNS. An increase in the extraction temperature marginally improves the extraction performance. The maximum yields of anacardic acid at 30°C by using n-hexane, methanol, and ethanol as solvent were 44.12%, 42.52%, and 43.50% respectively.

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28 / May / 2007