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Production of sugar from sago palm

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This presentation reviews previous research works and publications, and regales the accumulated knowledge on the conversion of sago starch and sago fibre into sugar. Sago starch (at 20% DS) can be enzymatically hydrolysed into sugar with full (100%) recovery and the sugar syrup can be purified by filtration on powdered activated charcoal to remove all impurities and colour. Scaling up the process (up to 10 kg) did not significantly reduce the sugar recovery during hydrolysis. Apart from sago starch, lab-scale hydrolysis of treated sago fibres filtered from the wastewater can generate up to 40 to 80% sugar, which not only will create extra income for the sago farmers and sago mill operators, but will concomitantly reduce environmental pollution frequently associated with the sago industries. Sago sugar contains mostly glucose (94%), with maltose and other impurities, both at 3% each. Drying of the purified sago syrup is best performed using an oven (minimum 60°C), producing high (100%) recovery albeit after several days. Analysis of sweetness revealed that the purified sago sugar is as sweet as 50% glucose. Sago starch therefore has a potential to be the alternative raw material to complement the frequent shortages of sugar obtained by processing imported sugar cane in this country.

Biography

Kopli Bujang obtained his Ph.D. from the University of London in 1992 in Management of Solid Wastes. He was the Director of the Centre for Technology Transfer and Consultation (CTTC), Dean of the Centre for Graduate Studies (CGS) and Director of the Centre of Excellence for Sago Research (CoESAR) in the Universiti Malaysia Sarawak (UNIMAS). He is now a Senior Professor at the Faculty of Resource Science and Technology, and is in the final stage of constructing a 1 ton/day pilot-plant for the production of bioethanol from sago.

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