

Title **Effect of Coconut's Age, Pasteurization and Concentrations of Coconut Milk on Nata de Coco Production from Coconut Milk by Two Strains of *Acetobacter xylinum***

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Academic year **1996**

Abstract

The purpose of this study was to use coconut milk for the production of bacterial cellulose (nana de coco). The coconut milk used in the study was prepared from half-mature and mature coconut and was diluted with water to 1:30 or 1:50 (v/v) concentration. Two strains of cellulose-producing *Acetobacter xylinum*, Agr.60 and T₂, were used as the starter. The coconut milk used for the fermentation was added with 0.5% (w/v) ammonium sulphate, 5% (w/v) sucrose and 1.2% (v/v) acetic acid. During the fermentation, the white or cream cellulose layer was formed on the top of the medium. With 1:30 diluted coconut milk, the maximum productivity (in terms of weight and thickness of the product) using strain Agr.60 was obtained from the coconut milk prepared from boiled half-mature coconut, while this was obtained using strain T₂ from the unboiled, mature coconut milk. However, the productivity using strain T₂ was less than that using strain Agr.60. For 1:50 diluted coconut milk, the maximum productivity was obtained using Agr.60 when the unboiled coconut milk prepared from the half-mature coconut was used. Similarly, strain T₂ produced less cellulose at this dilution than that of strain Agr.60. Thus, the maximum productivity using this strain was obtained from the boiled coconut milk prepared from the mature coconut. In addition, test for acceptance of the food products prepared from the cellulose produced from both types of coconut milk (1:30 dilution) using Hedonic scale method revealed a significant less acceptance, in terms of taste and texture, to the conventional cellulose obtained from coconut water fermentation.