The composition of sugarcane juice and production of granulated sugar

Phisamai SRICHAYET, Nipat LIMSANGOUAN and Kassamaporn PUNAPURUT
Institute of Food Research and Product Development, Kasetsart University, Thailand

Abstract

The aim of study was the chemical composition of sugarcane juice and production of granulated sugar. Process development is to apply for the intelligence of locality to develop product standard. Effect of chemical composition such as pH, total soluble solid, sucrose and the process parameter is final heating temperature on the crystallization, moisture content, sucrose, reducing sugar, and color value (ICUMSA) of granulated sugar was studied. The pH optimum adjusts 5.8-6.2, the total soluble solid 20-24 brix, sucrose is a range of 85.0 to 90% by weight of total sugar, and heated to reach final temperature is 130°C. To reduce moisture of granulated sugar is drying at 70°C for 1 hour the moisture content it is not more than 2.0% by weight.

Introduction

Consumers have been concerned about sugar intake and tend to prefer soft brown sugar that has flavor nutrients and minerals. Mizutani et al., (1999) D-Psicose is a C-3 of D-fructose, which is found in essential. Chen and Chou, (1993) and insoluble impurities (i.e non sucrose species). It’s was also slightly acid with the pH between 4.8 to 5.2, TSS 15.0-24.0 and sucrose 10.14 – 18.45 % w/w. The aliciation can occur in OTOP or organization by applying the intelligence of local people.

Materials and Methods

Materials

Mature stems of sugarcane about 9-12 months were checked sucrose and reducing sugar. Soft brown sugar was analyzed moisture content, sucrose, reducing sugar, and color value (ICUMSA)

Crystallization experiments

An open pan was used as an evaporator and transferred to a heated vial gas cooker. Preparing sugarcane juice before heating step is measure and adjusted degree Brix of 15-25 and pH 5.0-7.0. To bring the sugarcane juice concentration to syrup at final temperature 120-140°C. The crystallization of sugar syrup was carried out with a strong shearing force and drying by hot air oven or exposed to the sun. It then will become granulated sugar.

Conclusions

Sucrose content and pH is base on the ability of sucrose to crystallize and control of the syrup temperature in a heating. This technique was transferred to farmers who produce soft brown sugar.

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