

Effect of microwave on sugarcane juice preservation

Neha Pradhan, Dilip Kumar, P.S. Pisalkar and Priyanka Singh

Sugarcane juice gets spoiled quickly due to physical, microbial and enzymatic degradation. In present investigation an attempt has been made to preserve sugarcane juice with the help of microwave processing. Sugarcane variety CoLk 94184 were harvested from the farms of Indian Council of Agriculture Research-Indian Institute of Sugarcane Research, Lucknow (Uttar Pradesh). Peeled sugarcane sticks was subjected to heat treatment at 10 psi for 5 minutes and then sticks was immediately cooled in a deep freezer and juice was extracted through sugarcane juice extraction machine followed by the addition of lemon juice to maintain the pH 4.2-4.3. After this the juice was subjected to microwave treatments for time period of 1-4 minutes. Fresh sugarcane juice was taken as control. All the treated juices were bottled and pasteurized in hot water at 80°C for 25 minutes. All the lots were stored under refrigerated condition. The prepared juices were observed for physico-chemical and microbiological aspects like pH, total soluble solids, colour (L^* , a^* , b^* values), total plate count, yeast and mould count along with sensory evaluation (overall acceptability). Changes in the above characteristics were observed and analyzed. From the results obtained it was clear that the overall performance of the above characteristics was found best when the juice was preserved by using microwave treatment for time period of 3 minutes (T_3) which enhanced the shelf-life of sugarcane juice for upto 56 days.

Key Words : Sugarcane juice, Heat treatment, Storage, Microwave, Preservation

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MEMBERS OF RESEARCH FORUM

Author for correspondence :

Neha Pradhan, Department of Agricultural Processing and Food Engineering, Indira Gandhi Krishi Vishwavidyalaya, **Raipur (C.G.) India**

(Email : pradhan.neha.2709@gmail.com)

Associate Authors' :

Dilip Kumar, Department of Agricultural Engineering, ICAR- Indian Institute of Sugarcane Research, **Lucknow (U.P.) India**

P.S. Pisalkar, Department of Agricultural Processing and Food Engineering, Indira Gandhi Krishi Vishwavidyalaya, **Raipur (C.G.) India**

Priyanka Singh, Department of Applied Plant Science, Babasaheb Bhimrao Ambedkar University, **Lucknow (U.P.) India**
(Email : priyankasinghbau@gmail.com)
