Effects of Stripping and Storage on Sugarcane Sirup Production

Dempsey M. Broadhead

Stripping or removal of the leaves from sugarcane (Saccharum officinarum L.) stalks makes up a large percent of the cost of producing sugarcane sirup. A machine that will satisfactorily separate the leaves from the stalks has not been developed; consequently, the leaves are removed from the plants by hand.

Labor supplies, weather conditions, and limited processing equipment often demand that a sirup producer harvest sugarcane several days or weeks before milling and processing. Stokes found that the varieties 'C. P. 29-116' and 'Co. 290' could be stored after harvest outdoors in Mississippi for as long as 28 days without a loss in yield or quality of the sirup.

Sugarcane stripping and storage tests with the variety 'C. P. 36-111' were conducted during 1959-62 in Mississippi. These tests were initiated to study the effects of stripping and storage of sugarcane on the production and quality of sirup.

EXPERIMENTAL PROCEDURE

The plants used in this study were grown at Poplarville, Mississippi, on Ruston sandy loam and received uniform cultural and fertility treatments.

The experiment comprised 12 treatments replicated 4 times in a factorial design. Twelve 10-stalk samples were selected at random from each replication. Each sample was topped at the last mature internode and weighed. The leaves were stripped from half of the samples. The stripped and unstripped samples of cane were placed in unprotected, outdoor storage at Poplarville for 0 (check), 3, 7, 14, 21, and 28 days before they were milled and the juice processed into sirup. At the end of each storage period, 4 samples each of stripped and unstripped cane were carried to Meridian, Mississippi, and milled in a 3-roller mill for juice analysis. The juice from the four samples for each treatment was then composited and used for conducting sirup tests on a small sirup pan. Brix was determined with a Brix hydrometer. Sucrose readings were made with a polariscope. Purity is sucrose/Brix in percent.

RESULTS AND DISCUSSION

Results from this study indicate that stripped and unstripped C. P. 36-111 sugarcane produced the same quality and yield of sirup. No difference was indicated between stripped and unstripped cane in extraction, crystallization, sedimentation, color of sirup, or sirup per ton of cane. The unstripped cane had a significantly higher Brix than the stripped (Figure 1). Purity of the stripped cane was significantly higher than that of the unstripped (Figure 2). Brix of the juice increased, whereas extraction (Figure 3) declined with time in storage. This loss of

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1 Cooperative investigations of the Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, and Mississippi Agricultural Experiment Station. Received Aug. 2, 1963.

2 Research Agronomist, Crops Research Division, ARS, USDA. The author acknowledges the valuable advice and assistance of T. E. Ashley, Superintendent, South Mississippi Branch Experiment Station, Poplarville, Miss., and Otto H. Coleman, Research Agronomist, and Jack L. Dean, Plant Pathologist, Crops Research Division, ARS, USDA.
