# Identification of Sugarcane Varieties for Commercial Cultivation in Agro-ecological Zone IL1c in Proposed Bibile Sugar Project Area

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## Abstract

This study was carried out to identify suitable sugarcane varieties for commercial cultivation in agro-ecological zone IL1c (with 1300 mm 75% expectancy value of annual rainfall and the terrain of rolling, undulating or flat) in proposed Bibile sugar project area during November 2007 – December 2008. Sixteen sugarcane varieties including commercial, near commercial and a few varieties with proven results in previous adaptability experiments were tested using an unbalanced randomized block design. Relevant agronomic and bio-chemical data that determine cane and sugar yields were recorded at harvest of the plant crop. The varieties SL 89-1429, SL 89-2227, SL 88-116 and M 43859 produced significantly higher cane and sugar yields than the commercial standard Co 775. The varieties SL 7130 and SL 97-1442 produced significantly higher cane yields compared to Co 775. The two highest cane yielding varieties; SL 89-1429 and SL 89-2227 have proven their yielding abilities of more than 140 metric tons per hectare confirming the results of previous adaptability studies. Based on these results, the varieties SL 89-1429, SL 89-2227, SL 88-116, M 43859, SL 7130 and SL 97-1442 are considered to be potential commercial varieties in the areas coming under agro-ecological zone IL1c. Analysis of the ratoon 1 crop yield and the combine yield (with plant crop and ratoon crop yields) of these varieties, considering the possible effects of genotype x environment interactions is necessary to make final recommendations. The results of this experiment suggest that development of a cropping calendar to cultivate sugarcane in the diverse agro-ecological area is of paramount importance to obtain maximum output from the varieties by deciding the periods for planting and harvesting.

**Key words:** agro-ecological zone, sugarcane varieties