

***FAMILY x ENVIRONMENT INTERACTION IN SUGARCANE IN
GUADELOUPE.***

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An experiment on 21 families was performed in two contrasted environments in Guadeloupe (one in a vertisol area with small rainfall level and the second one in a feralitic soil with much higher rainfall level) in order (i) to assess family x environment interaction, and (ii) to estimate to which extent the varietal development program needs to be located in several environments.

Both trails consisted of alpha-plan design comprising 28 seedlings per family, 3 replicates and 3 blocks/rep. and seven families per block. Stalk diameter (SD), stalk length (SL), brix (BX), stalk number (SN) and cane weight (CW) were recorded.

An ANOVA has been performed within each site and considering both sites together. A good control of environmental error was observed as standard variation ranged from 3 to 15%, depending on trait. All characters showed a highly significant family effect across both sites ($P < 0,001$). A highly significant family x environment interaction effect was observed ($P < 0,001$) for SN but not for other traits. These results are discussed regarding the family sample size, the number of families and the number of environments surveyed.