

Physico-chemical changes in sugarcane (*Saccharum officinarum* var yellow cane) and the extracted juice at different portions of the stem during development and maturation

ABSTRACT

A study was conducted to determine the physicochemical differences between portions (top, middle, and bottom) of sugarcane at different maturation stages (between 3 and 10 months from planting). The variety used was *Saccharum officinarum* var. Yellow cane. The parameters analysed were weight, diameter, yield, total soluble solids (TSS), pH, titratable acidity, sugar content (sucrose, glucose, fructose). The weight, diameter, total soluble solids (TSS) and sucrose content increased significantly ($P < 0.01$) in all portions (top, middle and bottom) up to the end of maturity. On the other hand, titratable acidity (TA), pH, juice yield, glucose and fructose contents decreased significantly ($P < 0.01$) during maturation. However, significant differences were also detected in weight, diameter, TSS, sugar content, pH, TA and juice yield between the different portions during maturation. Sucrose content, juice yield and TSS were found to be the most suitable indicators of maturity, while TA, glucose and fructose contents were found to be poor maturity indicators. A suitable harvesting stage was found to be between 7 and 8 months after planting. Copyright © 2001 Elsevier Science Ltd.