

STALK YIELD OF SUGARCANE VARIETIES AS AFFECTED BY N FERTILIZATION AND INOCULATION OF DIAZOTROPHIC BACTERIA

Montezano, Z.F.1; Cantarella, H.2; Vitti, A.C.3; Vargas, V.P.4; Rossetto, R.3; Urquiaga, S.5
1-Pos-doc, Soils and Environ. Res. Center, IAC, Brazil, zaqueu@iac.sp.gov.br; 2-Researcher Soils and Environ. Res. Center, IAC, Brazil, cantarella@iac.sp.gov.br; 3-Researcher, APTA, Piracicaba, Brazil, acvitti@apta.sp.gov.br; 4-PhD Student, Soils and Environ. Res. Center, IAC, Brazil, vitorpvargas@hotmail.com; 5-Researcher, Embrapa Agrobiology, Brazil, urquiaga@cnpab.embrapa.br.

The objective of this experiment was to assess the millable stalk yield (SY) and technological attributes of varieties of sugarcane in response to N rates and inoculated diazotrophs. Two trials in non-irrigated areas were set up in Sales Oliveira, Brazil, on March 23 and May 12, 2009, during the plant cane cycle. The experiment was a split plot with four replications. Three varieties of sugarcane were placed in the main plots and the fertilizer treatments in the subplots: control (no N) and the rates 30, 60, and 90 kg N ha⁻¹ applied as urea in the furrow. In addition, a mixture of five species of diazotrophic bacteria were inoculated in plants that received no N and 60 kg N ha⁻¹. The subplot consisted of five rows 10 m long, spaced at 1.5 m. The harvesting of unburned stalks was done on August 18, 2010, 17 and 15 months after planting. SY was measured with the aid of a tractor equipped with hydraulic grab and load cell. The technological attributes of stalks sampled were performed in 10 cane stalks randomly collected per plot. Varieties IACSP 95-5000 and SP 81-3250 showed the highest stalk yields in Experiment 1 (126 and 110 t ha⁻¹, respectively). In the 2nd experiment the varieties RB 86-7515 and IACSP 93-3046 stood out: 105 and 103 t ha⁻¹. No effect of inoculation on stalk yields was observed in both experiments. Yields increased by 240 kg ha⁻¹ of cane per kg N (SY = 105 + 0.24N, R² = 0.93) in Experiment 1. The highest stalk yield (105 t ha⁻¹) was obtained with 50 kg N ha⁻¹ in Experiment 2 (SY = 95 + 0.402N - 0.004N², R² = 0.99). A marked response do N application was observed and sugarcane varieties responded differently to fertilization but not to inoculation in the cane cycle. Observations will continue in the ratoon crop.

Keywords: Cane Sugar, Variety, Nitrogen, BNF

Supported by FAPESP

This document was created with Win2PDF available at <http://www.win2pdf.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.
This page will not be added after purchasing Win2PDF.