



Sugarcane Initial Growth with Vinasse Application in Latosol under Gradual Aluminum Stress

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One of the strategies for overcoming the high acidity of soils and the consequent toxicity of aluminum (Al) is based on the use of varieties adapted to these conditions. In Brazil, the application of vinasse is routine practice in the cultivation of sugarcane due to its fertilizing effect, mainly because of high potassium content. However, the vinasse may also attenuate the toxic effects of Al in the soil by forming complexes with low molecular weight organic acids providing greater depth of the root of sugarcane. The aim of this work was to evaluate the effect of vinasse on the initial growth of three cultivars of sugarcane (RB855453, RB966928 and RB867515), as well as its influence on root depth in a Dystrophic Red-Yellow Latosol (Typic Hapludox) with gradient of saturation by Al. The experiment was conducted in a greenhouse, in totally randomized design with factorial arrangement and three replications. Seedlings of sugarcane were transplanted to PVC columns 0.8 m high, built by stacking four rings (0.2 m high), filled with soil samples, which offered an increasing gradient of saturation by Al (m%) at depth (0-0.2 m (m% = 0,7); 0.2-0.4 m (m% = 7,9); 0.4-0.6 m (m % = 40,8); 0.6-0.8 m (m% = 62,6)). The collection of the experiment was conducted 120 days after planting, with the determination of the stalk diameter (DC), plant height (ALT), leaf nutrient content, dry matter of the aerial part (MSPA) and dry matter of the root system (MSSR). Cultivars of sugarcane and the application of vinasse had effect on DC and the MSSR. Cultivar RB867515 showed higher DC than in other cultivars, with 20.8 mm. The increase of MSSR by sugarcane cultivars varied due to depth. There were no effects of sugarcane cultivars and vinasse application in MSPA. The vinasse application resulted in plants with higher ALT. With the exception of the foliar content of Fe, the N, Ca, Mg, S and Mn content were below those considered appropriate for sugarcane. Unlike other cultivars, the application of vinasse provided adequate foliar content of P for RB867515.