TITLE: SPORE DENSITY OF MYCORRHIZAL IN THREE VARIETIES OF SUGARCANE UNDER CONVENTIONAL AND ORGANIC CULTIVATION SYSTEMS.

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ABSTRACT: Worldwide interest in reducing dependence on fossil fuels and diversifying the energy matrix to mitigate global warming has aroused attention to biofuels, in particular, sugarcane ethanol, which has promoted the expansion of the Canavieiro cultivation areas and the increase in the number of plants, notably in Cerrado lands, especially in the state of Goiás. The purpose of this work was to evaluate the density of AMF (arbuscular mycorrhizal fungi) spores in three varieties of sugarcane under conventional and organic cultivation. The samples were taken from the commercial crop of the Jalles Machado Powerplant SA, in the municipality of Goianésia, Goiás. The experimental design was entirely randomized design, in the scheme of subplots, with five replications. The parcels were composed by two production systems: conventional and organic. The subplots were the varieties of third year sugar cane cultivation: CTC 4, IACSP 91-1099 and IACSP 95-5000. Fungal spores mycorrhizal fungi (MAFs) were extracted from the soil using 50 cm ^{3} of each compound sample, by the damp sieving technique followed by water centrifugation and sucrose solution 50%. The spores have been separated according to their phenotypic characteristics as color, size and shape, composing the different morphotypes, under stereoscopic binocular magnifier. There was no significant difference in the density of AMFs spores in the sugar cane varieties and the organic and conventional production systems for all the varieties studied. There were significant differences regarding the treatments investigated. In relation to the mycorrhizal colonization rate, all varieties were higher in the organic production system, when compared to the conventional system. More conservational cultivation systems such as organic provide a more favourable environment to exudate root substances.

KEYWORDS: Fungi; MAF; Saccharum.