

CITRUS ALTERNATIVE MANAGEMENT: INFLUENCE ON FUNGI POPULATION IN SOIL

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Abstract:

Brazil leads the ranking of the world citrus production representing 85% share of the global trade in orange juice. A considerable part of this production from the intensive management with the use of chemical inputs and mechanization, which can lead to changes in biological soil communities. The present study evaluated fungal population in orange (variety Westin) plantation in two areas of management in Mogi Guaçu-town, SP. The work consisted of two treatments, conventional soil management (chemical inputs) and alternative management (replacement and gradual reduction of chemical inputs, bioaugmentation and biostimulation of soil microbes). Sampling occurred in the dry and rainy seasons, when five soil samples were collected per period and treatment, in a total of 20 soil samples. These were processed in the laboratory and subjected to analyses and cultivation forming unit count of fungi (CFU) in specific culture media and evaluation of chemical soil fertility parameters. For cultivation of fungi, serial dilution was performed starting from 10 g of soil, followed by plating on different culture media: potato agar, oatmeal agar, and Sabouraud agar at dilution of 10⁻³. The plates were incubated at 26 ° C for 7 days, when the count took place. Data were subjected to analysis of variance and means compared by T test at 5% significance level. CFU counts did not differ between treatments and evaluated seasons. For soil chemical parameters, there was significant differences in the two periods evaluated. In the dry season, the alternative management showed higher Mn and Zn content, while in the conventional management there was a higher Fe content. In the rainy season the K content was statistically higher in alternative treatment and B content in the conventional treatment. Although there was no significant difference in fungi count between treatments, several authors reported the participation of these microorganisms in the solubilization of macro and soil micronutrients such as P, K, Fe, Mn and Zn. Therefore, larger K, Mn and Zn content found in alternative management can be attributed to soil management adopted. A survey of fungal species present in the samples is in progress to clarify the influence of managements used in diversity of fungi these soils.

Keywords: soil fungi, citrus, alternative management

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