

TITLE: INHIBITION POTENTIAL OF BIOLOGICAL FERTILIZER AGAINST PHYTOPATHOGENIC FUNGI

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ABSTRACT:

The use of liquid biofertilizers in cultivation has been growing significantly because, besides enriching the soil, they have an inhibitory action on several phytopathogenic fungi. The aim of this work was to characterize the biofertilizer microbial community and to evaluate, *in vitro*, the potential for inhibition against fungi *Macrophomina phaseolina*, *Sclerotinia sclerotiorum* and *Fusarium solani*. The characterization of the microbial community was carried out through serial dilution and plating method in specific selective medium for populations of fungi, heterotrophic bacteria, *Pseudomonas fluorescens*, actinomycetes and proteolytic, amylolytic, cellulolytic and free-living nitrogen fixing bacteria. The inhibitory action of the biofertilizer on phytopathogenic fungi was carried out in TSA medium with the following concentrations (control, 0.3125, 0.625, 1.25, 2.5, 5.0, 10.0, 20.0, 40.0%). Mycelium discs of 8 mm in diameter were placed on center of Petri dishes, which were incubated at 25 °C and 12h photoperiod for 4 to 7 days. The evaluation was performed daily by measuring mycelial growth, and Micellar Growth Rate Index (MGRI) was determined. The microbial community present in the biological fertilizer was significantly expressive, both quantitatively and qualitatively ranging from 3.5 to 7.01 logUFC mL⁻¹ of different functional groups of microorganisms and microbial population. The biofertilizer concentration of 2.5% showed a great influence on the inhibition of mycelial growth of phytopathogenic fungi. Thus, we can conclude that the application or use of biofertilizer enriched with microorganisms assists the control of diseases caused by edaphic phytopathogens by inhibition or suppression.

Key-words: phytopathogenic fungi, liquid biofertilizer, *Macrophomina phaseolina*, *Sclerotinia sclerotiorum*, *Fusarium solani*.

Development Agency: Fundação Araucária.