Title: OCCURRENCE AND CHARACTERIZATION OF ENTOMOPATHOGENIC FUNGI IN ATLANTIC FOREST SOIL.

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Summary:

Knowledge of the composition of native species and distribution of entomopathogenic fungi are essential to assess the biological control potential in a particular ecosystem. The soil environment is an important reservoir for the diversity of entomopathogenic fungi, which can significantly contribute to the regulation of insect populations. The anamorphic fungi of the genus *Beauveria* spp., *Metarhizium* spp. and *Isaria* spp. have the greatest biological control. Ten composite soil samples collected in two epochs (Wet and dry) in the Municipal Natural Park Curio in Paracambi, were used for isolation of entomopathogenic fungi using bait method with *Galleria mellonella* (Lepidoptera: Pyralidae) and *Tenebrio molitor* (Coleoptera: Tenebrionidae). The isolates were morphologically identified and selected. The assessment of pathogenicity (Koch's postulates) of the isolates was performed using the immersion method of the larvae of *G. mellonella* and *T. molitor* for a minute and a half (1'30") in a spore suspension ($1x10^6$ spores/mL). There were obtained 91 larvae infected with entomopathogenic fungi (EF) (60.60%), 39 larvae were alive (26%) and 20 infected by other agents (13.30%) in soil samples, using the bait method with *G. mellonella* and *T. molitor* larvae. The isolated fungi species were the *Metarhizium* sp., *Beauveria* sp., *Isaria* sp., and *Fusarium* sp. The predominant species were the *Beauveria* occurring in 43.47% and *Metarhizium* occurring in 40.86% of all samples; other fungi were found with less than 15%. The mortality of *G. mellonella* and *T. molitor* was ascendant in time and higher than in the control for all isolates. The strain of *Beauveria* that presented the highest mortality was B12 (80%), *Metarhizium* (M6) presented a mortality of 76.66% in *G. mellonella* and 80% in *T. molitor*. The mortality of the *Isaria* (I2) in *G. mellonella* was 70% and *T. molitor* was 66.66%. Finally, the isolated *Fusarium* (F2) presented a mortality of *G. mellonella* 66.66% and 70% by *T. molitor*. The Preliminary results obtained from these bioassays are the starting point for the use of entomopathogenic fungi as biological pest control agents.

Keywords: Insect Pathogen, Biological Control, Natural Enemies, Biodiversity.

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