Title: GENETIC BIODIVERSITY AND BIOLOGICAL CONTROL ASPECTS OF *TRICHODERMA* FROM MARANHÃO

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Abstract:

The genus *Trichoderma* is a group of cosmopolitan fungus which are common isolated from soils samples. Some species show potential capability for biological control against phytopathogen fungus, however, the knowledge about your population, biological diversity and philogeography in the state of Maranhão still is nebulous. Therefore the present study aimed isolate and identify individuals of the genre *Trichoderma* from Maranhão through morphological and molecular characters and verify their antagonistic potential. Soil samples were obtained from northern Maranhão. The soil chemical characteristics were evaluated for pH and organic matter. The morphological characterization was made using the classification keys. To analyze the potential antagonistic of *Trichoderma* was used the dual culture method for mycoparasitism and the overlapping plates for volatile metabolites against *Fusarium oxysporum* f. sp. *passiflorae*. For molecular characterization was used ITS1 and ITS4 primers. In the present study were identified *T. asperellum* (twenty-four colonies), *T. ghanense* (three colonies), *T. harzianum* and *T. virens* (both two colonies) and *T. konilangbra* (only one). The organic matter in the soil of the municipalities São Luis and Buriti, showed average levels, all other municipalities showed low levels. The soil chemical characteristics showed pH acid for Nova Olinda and Miranda do Norte. The result of dual culture test showed which the isolates of *T. asperellum* are strong candidates as biocontrol agents. Inhibition was not observed through the volatile metabolites. The phylogenetic analysis defined and separated the DNA sequences in three distinct section. The species of *T. asperellum* were clustered in the Trichoderma section, *T. harzianum* and *T. virens* were clustered in the Pachybasium section. In the Longibrachiatum section remained *T. konilangbra* and *T. ghanense*. The present study reported the first isolation of *T. konilangbra* in Brazil showing the importance of studying neglected regions and improving knowledge related to phylogeography of the genus

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