PRODUCTION AND PURIFICATION OF HYDROLYTIC ENZYMES WITH BIOTECHNOLOGICAL INTEREST FROM A NOVEL *Paenibacillus* sp ISOLATED FROM CERRADO SOIL.

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Paenibacillus spp have been described as producers of a set of hydrolytic enzymes with biotechnological interest. In the present work, a novel *Paenibacillus* specie isolated from Brazil Cerrado soil was evaluated as a producer of amylases, chitinases, xylanases and β-1,3-glucanases with biotechnological purposes. After 48 hours of growth in culture medium containing the appropriate carbon source, this bacterium was able to produce amylolytic, chitinolytic and β-1,3-glucanases activities. Moreover, SDS-PAGE gels analysis showed that many specific proteins were produced in the culture medium. Chitinases and β-1,3-glucanases, in plants, represents an important class of defense proteins that can contributed to the plant resistant to the attack of fungal pathogens. Many transgenic plants containing genes of these enzymes obtained from microrganisms have been produced and displayed an increased resistance to fungi attack. The β-1,3-glucanase produced by this bacterium was partially purified after chromatographic procedures. In further studies these enzyme will be purified and biochemical and molecular characterized. Moreover, β-1,3-glucanase antifungal activity against phytopathogenic fungus will be tested.

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