

19ª REUNIÃO ANUAL DO INSTITUTO DE BOTÂNICA

26 a 30 de novembro de 2012

Tema: IB +20: Patrimônio ambiental de São Paulo

Neocosmospora vasinfecta, a fungus from the Brazilian Cerrado able to produce FOS from sucrose or inulin

<u>**Daiane Felberg Antunes Galvão**</u>^(1,2), Rosemeire Aparecida Bom Pessoni⁽³⁾, Keila Aparecida Moreira⁽¹⁾, Kelly Simões⁽⁴⁾, Marcia Maria Camargo de Morais⁽⁵⁾, Rita de Cassia Leone Figueiredo-Ribeiro⁽⁴⁾ & Marcia Regina Braga⁽⁴⁾

(1) Autor para correspondência: Universidade Federal Rural de Pernambuco – Unidade Acadêmica de Garanhuns, PE, daiane.antunes@uag.ufrpe.br, (2)UNICAMP, SP, (3)Universidade Metodista de São Paulo, São Bernardo do Campo, SP, (4) Núcleo de Pesquisa em Fisiologia e Bioquímica, Instituto de Botânica, São Paulo, SP, (5)Universidade de Pernambuco, PE.

Fructans are soluble carbohydrates largely distributed among higher plants but also produced by microbes. Interest in fructans and fructo-oligosacharides (FOS) has been increasing constantly since they are considered as functional food ingredients with beneficial effects in human nutrition. Considering that the production of FOS has gained tremendous commercial importance, it is worth to find microbes with the ability to synthesize these products. The savanna vegetation of the Brazilian Cerrado has a number of native plants accumulating inulin-type fructans and their rhizosphere has been a source of fungi able to metabolize these sugars. In the present work, we investigated the ability of Neocosmospora vasinfecta E.F.Sm, a fungus isolated from one of these plants, Viguiera discolor Baker, to produce FOS when sucrose or fructans (inulin) were used as carbon source. Soluble sugars were extracted from culture filtrates or mycelia and analyzed by thin-layer and high performance anion exchange chromatography. In the culture filtrates, it was observed the predominance of the trisaccharide 1-kestose, an intermediate in the synthesis of larger fructans, and the presence of glucose and fructose. When this microorganism was grown on inulin, the production of FOS was also observed, indicating the presence of endo-inulinase activity in the culture medium. As reported here, N. vasinfecta has shown to be a suitable fungus for biotechnological purposes, since it produces FOS by both synthetic and hydrolytic activities.

Key words: Fructans, enzymes, FOS, fungi.

Financial support: CNPq, CAPES/DINTER, and FAPESP 2005/04139-7.