Resumos do 54º Congresso Brasileiro de Genética • 16 a 19 de setembro de 2008
Bahia Othon Palace Hotel • Salvador • BA • Brasil
www.sbg.org.br - ISBN 978-85-89109-06-2

Studies of Plant-*Xylella fastidiosa* interactions in tobaco transgenic plants

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Keywords: *Xylella fastidiosa*, Citrus variegated chlorosis, sarcotoxin IA, *Nicotiana tabacum*, antimicrobial peptide

Citrus variegated chlorosis (CVC), caused by *Xylella fastidiosa* bacteria, has become an important disease of citrus culture. This disease is present in almost half of the citrus growing areas in Brazil and strongly affects sweet orange production, leading to important economic losses. Many studies have been carried out to understand how citrus plants are colonized by *X. fastidiosa*. However, the lack of alternative experimental hosts has been an obstacle to accelerated progress in this area. Some authors have shown the potential of tobacco as plant model. Sarcotoxin IA, a bactericidal peptide from *Sarcophaga peregrina*, interacts with bacterial cell membrane causing loss of electrochemical potential. These types of peptides are excellent candidates to increase the resistance in plants due mainly to the fast biostatic capacity against the target cells, the activity at low concentrations and its non-toxic nature to eukaryotic higher cells. Here we report the evaluation of tobacco transgenic plants constitutively producing the antimicrobial peptide Sarcotoxin IA (STXIA) regarding the resistance to *X. fastidiosa*. No statistical differences were found between both inoculated and non inoculated transformed and control plants regarding the parameters analyzed such as leaf area, transpiration, chlorophyll content, xilematic flow and fresh and dry mass. The plant height was different between control and transgenic plants independent of inoculation, with the transgenics were higher. The effect of sarcotoxin observed on the non inoculated transgenic plants of *Nicotiana tabacum* cv. Turkish Samsum might be due the action of this peptide on other pathogenic microorganisms or to position effect of transgene in the genome sites. Considering previous report showing that tobacco is a suitable host for CVC, our results showed that differences in effects between *Nicotiana* genotypes have to be taken into account for studies in plant-CVC interactions.

Financial support: CNPq.