

Virus Family: *Geminiviridae*

Category: Management and Control

Title: The epidemiology of *Bean golden mosaic virus* in two transgenic bean lines

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Abstract: *Bean golden mosaic virus* (BGMV) is the causal agent of a destructive disease of common beans causing losses of up to 100% in a singly early affected field. We have developed transgenic bean lines using different strategies to for resistance to BGMV. The present study was conducted to evaluate the epidemics of golden mosaic under field conditions during two seasons in 2007 and 2008. The experimental plots consisted of five replications in a randomized block design using five bean lines. Each plot had five rows of five meter in length. The transgenic lines were Olathe 5.1 (siRNA-line), Olathe M1/4 (mutated *rep* protein), and Pérola M1/4 (a line of cv Pérola with the transgene of Olathe M1/4 obtained after four backcrosses). The conventional lines were Olathe Pinto, Pérola and BRS Pontal. Disease progress was evaluated weekly by the incidence of symptomatic plants since disease onset. Average disease incidence was 13.6% and 87.0 of the plants in cv Pérola in 2007 and 2008, respectively. Olathe Pinto had 4.6 and 72.2%, and Olathe 5.1 did not present any disease symptoms in 2007 and one diseased plant in 2008. We could conclude that the Olathe 5.1 transgenic line was resistant and deserved a complete biosafety evaluation for commercial release.

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