Interactions; CNPq, FAP-DF

Virus Family: *Geminiviridae*

Category: Management and Control

Title: The biosafety of siRNA transgenic common beans resistant to *Bean golden mosaic virus*.

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Abstract: *Bean golden mosaic virus* (BGMV) is an important *Begomovirus* distributed in most of the bean growing areas in Brazil. Disease losses can be up to 100% in a singly early affected field. We recently showed that transgenic beans expressing a small interfering RNA derived from the *rep* gene successfully prevents plants from infection by BGMV both under high inoculation pressure in the greenhouse or in the field. According to the Brazilian law regulating on the biosafety of Genetically Modified Organisms the biosafety of GMOs shall be based on the Molecular Characterization (including protein biosafety), Agronomic and Environmental evaluation, and Substantial Equivalence. The transgene is present as two copies in a single locus, and was inherited as a single gene in a Mendelian way. Up to 30% of heterozygous plants may be infected by BGMV thus showing gene dosage effect. However, homozygous plants are completely resistant. Except for resistance to BGMV the transgenic line Olathe 5.1 was essentially like its counterpart Olathe Pinto in all required analysis. The complete set of data will be submitted to The National Technical Biosafety Commission (CTNBio) by November 2010 for analysis and a possible authorization for commercial release.

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