

**BEAN TRANSFORMATION FOR
RESISTANCE TO BEAN GOLDEN
MOSAIC VIRUS**

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Bean golden mosaic virus (BGMV) is a whitefly transmitted geminivirus that infects bean (*Phaseolus vulgaris*) in several Latin American countries. BGMV possesses a geminate virion and two single-stranded DNAs in a bipartite genome, called DNA-A and DNA-B. DNA-A encodes, in addition to the coat protein gene (AR1), two genes involved in viral replication (AL1 and AL3) and AL2 that, together with BR1 and BL1 encoded by DNA-B, are responsible for viral movement in the plant.

At present, all the attempts to develop resistant cultivars through classical genetic and plant breeding were not satisfactory.

In this work, we have used antisense strategy to produce genetic engineered resistant plants against the Brazilian isolate of BGMV. We have transformed bean (cv Olathe Pinto) by particle bombardment with a vector containing the antisense DNA sequence of the virally encoded AL1, AL2, AL3 and BL1 and the report gene GUS. We obtained three plants that showed GUS activity in different tissues (i.e. leaf, root, petiole, petal) by histochemical assay. The presence of antisense sequences are being analyzed by PCR and Southern blot.