Cowpeamildmottlevirus (CPMMV) seedtransmission in common beancultivars(Transmissão de cowpeamildmottlevirus (CPMMV) por sementes em cultivares de feijoeiro comum)

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Common bean (*Phaseolus vulgaris*) is an important source of protein in human diet worldwide and several viruses can affect the crop, including cowpea mild mottle virus - CPMMV (genus *Carlavirus*, family *Betaflexiviridae*), transmitted by whiteflies (*Bemisiatabaci*). CPMMV is found infecting bean fields in high incidence in central and northeastern regions of Brazil. For the Brazilian CPMMV isolates infect soybean (*Glycine max*) and common bean, seed transmission tests were negative based on symptoms of the progeny and ELISA. In this work we used a more sensitive technique, RT-PCR coupled to Southern Blot, to analyze common bean seed transmission of CPMMV. Seedlings of 'BRS FC 401 RMD' and 'Pérola' cultivars were mechanically inoculated with CPMMV isolate from Goiás state. The plants were tested for virus infection by RT-PCR, and cultivated in the greenhouse. Seeds from these plants were sown and the seedlings kept in the growth chamber. After 30 days, leaves were collected and used for total RNA extraction, with Trizol Reagent. The cDNAs were synthesized using SuperScript III Reverse Transcriptase, oligodT and random primers, and 2µg of total RNA, previously treated with DNAse. Amplification of actin 11 gene by PCR was used to verify the cDNA quality. A CPMMV-derived fragment was detected by PCR with specific primers followed by Southern Blot using a specific-CPMMV P^{32}-labelled probe. The transmission rate of CPMMV through seeds varied between the two cultivars: 47,4% (9/19) for 'BRS FC 401 RMD' and 13% (3/23) for 'Pérola'. Because the virus load in the seeds and plantlets is probably very low, the use of RT-PCR combined with Southern blot was crucial for the detection of CPMMV in the seed transmission tests. Further studies should focus on the effects of seedborn CPMMV as a potential inoculum source for further transmission by whiteflies.

Palavras-chave: CPMMV; *Phaseolusvulgaris*; seedborne
Apoio: Embrapa, FapDF, and CNPq.

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