

USE OF dsRNA TO INDUCE PAPAYA RESISTANCE AGAINST THE STICKY DISEASE VIRUS

Rodrigues, S.P.^{1,2}, Vale, P.B.M.¹, Piccin, J.G.¹, Ventura, J.A.^{1,3}, Fernandes, P.M.B.¹

¹Núcleo de Biotecnologia, Universidade Federal do Espírito Santo;

²Instituto de Bioquímica Médica, Universidade Federal do Rio de Janeiro ³Instituto Capixaba de Pesquisa, Assistência Técnica e Extensão Rural, Brazil.

Papaya meleira virus (PMeV) is a double-stranded RNA (dsRNA) virus which causes the papaya (*Carica Papaya* L.) sticky disease, a challenge to papaya production in Brazil as no resistant cultivar exists. Aiming to increase papaya resistance against PMeV, we have evaluated the application of purified viral dsRNA genome as a biological elicitor. At greenhouse, papaya seedlings stem apexes were simultaneously injected with PMeV (high or low concentration) and a dsRNA solution. Plants injected only with dsRNA or water were used as control. During 71 days post-injection (dpi), plants latex were sampled to estimate the infection progress. During the first 50 dpi those plants were considerably resistant: among three plants injected with high virus concentration, one was totally resistant whereas the two others showed little virus load. Even more, plants injected with low virus concentration were totally resistant. Such a resistance, however, was temporary, once the virus was detected from 57 to 71 dpi. Nevertheless, virus load was lower when compared to plants injected only with PMeV which showed virus occurrence from 22-36 dpi. Such results indicate that PMeV dsRNA is an efficient elicitor of papaya defense system possibly activating RNAi pathways.

Financial support: FINEP, BNB, CNPq

Key words: Papaya meleira virus, Resistance induction, Phytopathology, double-stranded RNA