

Transgenic ‘Hamlin’ sweet orange expressing *csd1* or *d4e1* genes exhibits decreased susceptibility to *huanglongbing* and greater callose accumulation in the leaves (Plantas transgênicas de laranja ‘Hamlin’ expressando os genes *csd1* ou *d4e1* exibem suscetibilidade diminuída ao *huanglongbing* e maior acúmulo de calose nas folhas).

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Huanglongbing (HLB) is a disease associated with the phloem-limited Gram-negative bacterium *Candidatus Liberibacter asiaticus* (CLas), and it is currently considered one of the most destructive citrus diseases. No genetic resistance within the genus *Citrus* has been identified. Therefore, the genetic transformation may be an effective solution in the search for resistant or tolerant cultivars. This work aimed to perform an evaluation of transgenic sweet orange plants bearing two different gene constructs with the potential for bacterial resistance. ‘Hamlin’ sweet orange plants (*C. sinensis*) expressing the D4E1 synthetic antimicrobial peptide driven by the 35S promoter or expressing a superoxide dismutase (*csd1*) gene, from *Poncirus trifoliata*, driven by ubiquitin promoter were propagated by grafting on Rangpur lime rootstocks, and then graft-inoculated with CLas contaminated axillary buds. The presence and concentration of CLas were determined in the leaf tissues, by qPCR, six and 12 months after inoculation (m.a.i). One transgenic event expressing *csd1* gene and another, expressing the *d4e1* gene, exhibited reduced bacterial populations when compared with non-transgenic plants, and showed no visible HLB symptoms, during the first evaluation (six m.a.i). One year after CLas inoculation, all the transgenic lines exhibited higher bacterial titers than the first evaluation (six m.a.i). Epifluorescence analysis showed a high amount of callose deposition in the sieve tube elements of transgenic lines leaf petioles compared to the control. These results corroborate earlier studies which suggest that callose may be an important defense response to biotic stress, resulting in lower CLas population.

Palavras-chave: bactéria; *Citrus sinensis*; disease resistance

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