
Huanglongbing (HLB), also known as greening, is one of the most important diseases of citrus worldwide. The causal agent is a gram-negative bacterium known to inhabit the phloem of infected plants. Three different candidate species infect citrus: ‘Candidatus Liberibacter africanus’ found in the African continent; ‘Ca. L. asiaticus’ found in Asia, Brazil, and the United States; and ‘Ca. L. americanus’ found in Brazil. (1). Tobacco is an easily transformable plant species that can be used as an experimental host system to quickly screen for candidate genes useful to control plant pathogens. However, no evidence exists on the ability of this plant species to sustain populations of ‘Ca. L. americanus’. With the purpose of transmitting ‘Ca. L. americanus’ from citrus to tobacco, fragments of healthy stems of Cuscuta spp. (dodder) were used to connect an HLB-infected sweet orange plant to each of 10 healthy plants of Nicotiana tabacum L. cv. Xanthi and allowed to remain connected for 30, 45, and 50 days. Three different HLB-infected orange plants and 30 tobacco plants were used in three independent experiments. Most HLB-exposed Xanthi plants exhibited chlorotic leaves after 50 days of exposure probably because of the parasitic effect of dodder; however, an average of 6, 1, and 3 Xanthi plants exhibited a unique blotchy mottle symptom after 30, 45, and 50 days of exposure, respectively. Symptomatic and asymptomatic leaves were collected and analyzed by PCR. The results consistently confirmed the presence of ‘Ca. L. americanus’ only in symptomatic leaves. Sequencing of the PCR product and comparison to the NCBI database also confirmed the identity of the pathogen as ‘Ca. L. americanus’. Electron microscopy analysis of four symptomatic leaves indicated the presence of bacterium-like bodies with round to elongated bacilliform shapes and surrounded by two membranes. These bodies resembled those already described in HLB-infected citrus in Brazil (1). The evidence presented above confirms the successful transmission of ‘Ca. L. americanus’ from citrus to Xanthi using the parasitic plant Cuscuta spp.
