The beet leafhopper-transmitted virescence agent causes tomato big bud disease in California.

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Abstract: Biological and genetic data were used to establish that the causal agent of tomato big bud (TBB) disease in California, USA, is the beet leafhopper-transmitted virescence agent (BLTVA), a mycoplasma-like organism (MLO). Healthy Circulifer tenellus
Leafhoppers acquired the BLTVA MLO from field-collected, symptomatic tomato plants, which developed typical big bud symptoms. Healthy tomatoes inoculated with the BLTVA type line (FC-83-13) also developed gigantism and virescence characteristic of the disease. A California TBB MLO isolate caused symptoms typical of those caused by the BLTVA, including induction of premature flowering, on a standard plant host range. Southern blot analysis of DNA from healthy greenhouse tomato plants inoculated with a California TBB MLO isolate showed that all samples possessed plasmids that hybridized with a cloned BLTVA MLO plasmid.

*Macrosteles fascifrons* did not transmit a virescence agent from symptomatic field-collected tomatoes and tomato plants infected with western aster yellows MLO did not develop floral gigantism or virescence.

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