

Title *Clavibacter michiganensis* subsp. *michiganensis*, a seedborne tomato pathogen: healthy seeds are still the goal

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Citation Plant Disease 95 (11): 1328-1338. 2011.

Keywords tomato; seed borne disease

Abstract

Clavibacter michiganensis subsp. *michiganensis*, causal agent of tomato bacterial canker, is a seedborne pathogen and is considered one of the most destructive bacterial diseases of this crop. For this reason, in the European Union and in many other countries, *C. michiganensis* subsp. *michiganensis* is a quarantine pathogen. It was first reported at the beginning of the twentieth century in Michigan (USA), and currently it is present worldwide. Its movement over long distances is facilitated by traded seeds, which explains its distribution throughout all of the tomato-growing regions of the world, but its spread differs widely among countries. However, it can also survive in plant debris and on volunteer plants or alternative hosts that can act as local sources of inoculum. Previous reviews regarding tomato bacterial canker were published in 1969 and 1993. This article discusses the current disease situation, integrating previous data with the most recent findings and new information available. The objectives of this article are: (i) to review the progress on tomato bacterial canker, the role of infected or infested seeds, and of local sources of inoculum in disease outbreaks; (ii) to provide an overview of plant health regulations; and (iii) to update information regarding research innovations and future perspectives on new, useful tools for detecting seed contamination that can aid in designing new strategies to improve control.