

NEW DISEASE REPORT

## **Bacterial canker, caused by *Clavibacter michiganensis* ssp. *michiganensis*, on tomatoes in eastern Anatolia region of Turkey**

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In 2001, a disease occurred on tomato (*Lycopersicon esculentum*) cv. Target growing in six different commercial fields in the production areas of Oltu, Ispir and Yusufeli in the eastern Anatolia region of Turkey. Disease incidence was almost 100%, resulting in heavy losses. Initial symptoms were small (1–3 mm in diameter), water-soaked, dark brown to black lesions on the leaf margins and stems, and white, raised ‘bird’s eye’ spots on fruits. Defoliation, one-sided wilting, tip die-back, open stem cankers and vascular discoloration were observed on plants in advanced stages of the disease. These symptoms were consistent with those of bacterial canker described by Vidaver & Davis (1988) and were found only on cv. Target. A slow-growing, Gram-positive, pale-yellow bacterium was consistently isolated on yeast dextrose carbonate agar medium (Lelliot & Stead, 1987). Sixteen representative isolates were identified as *Clavibacter michiganensis* ssp. *michiganensis* (similarity 47–89%) using fatty acid methyl ester (FAME) analysis and Sherlock Microbial Identification System software (Microbial ID, Newark, DE, USA) (Gitaitis & Beaver, 1990). Pathogenicity was tested by spraying 5-week-old-tomato seedlings (cv. Easy Harvest) with bacteria suspended ( $10^8$  cfu mL<sup>-1</sup>) in sterile water. Control plants were sprayed with sterile water. After inoculation plants were covered with polyethylene bags for 48 h and maintained in a greenhouse at 25°C. Symptoms similar to those observed in the

field developed on the inoculated plants within 7–13 days. No symptoms developed on control plants. The bacterium was re-isolated from inoculated plants and its identity confirmed by FAME analysis. Although it has been reported previously in Aegean and Mediterranean regions (Özaktan, 1991), this is the first record of bacterial canker on tomatoes in the eastern Anatolia region of Turkey. Occurrence of the disease only on plants of cv. Target suggests that contaminated seeds and/or transplants of cv. Target may have been the source of the pathogen.

### References

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Accepted 22 January 2002 at <http://www.bspp.org.uk/ndr> where figures relating to this paper can be viewed