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DISEASE NOTES

First Report of Bacterial Blight of Pomegranate Caused by *Xanthomonas axonopodis* pv. *punicae* in Turkey

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ABSTRACT

Pomegranate (*Punica granatum* L.) is an increasingly important fruit crop that is widely cultivated in Turkey. Typical bacterial blight symptoms were observed since spring of 2011 in pomegranate orchards located in Antalya Province. Symptoms were characterized by dark brown, angular to irregularly shaped spots on leaves and fruit; cankers on stems, branches, and trunks; and split trunks. The pathogen was isolated from leaf spots on naturally infected plants showing typical symptoms onto yeast dextrose chalk agar. Bright yellow bacterial colonies were consistently isolated. Bacterial strains were characterized as gram negative, oxidase negative, catalase positive, tobacco hypersensitivity positive, and able to produce acid from L-arabinose, D-galactose, D-glucose, and D-mannitol but not from D-xylose. Pathogenicity of the representative bacterial strain Serik-4 was performed on 2-year-old pomegranate plants cv. Hicaz. Leaves were sprayed until runoff with bacterial cell suspensions containing 10^7 CFU/ml. Inoculated plants were covered with transparent plastic bags to maintain moisture for 48 h. Negative control plants were inoculated with sterile distilled water. Plants were then incubated in a greenhouse at 30°C

for 14 days. Symptoms on leaves included dark brown, angular to irregularly shaped water soaked lesions along the veins of the inoculated plants 10 days after inoculation. No lesions developed on the control plants. The symptoms on inoculated plants were similar to those on naturally infected plants. Yellow bacterial colonies were re-isolated from the inoculated plants and identified as the same as the original strain by conventional tests and FAME analysis, thus fulfilling Koch's postulates. Fatty acid methyl ester profiling of the representative strain Serik-4 using GC-MIDI (Microbial Identification Inc, Newark, DE) identified the genus of the bacterium as *Xanthomonas*. The identity of Serik-4 was further confirmed by amplifying the 16S rRNA gene with the universal primers 27F and 1492R (3) and sequence analysis (GenBank Accession No. KM007073). The 16S rRNA gene sequences of Serik-4 was 99% identical to the corresponding gene sequences of the *Xanthomonas axonopodis* pv. *punicae* strain present in the NCBI database (JQ067629.1). High incidence of bacterial blight caused by *X. axonopodis* pv. *punicae* on pomegranate has been previously reported in India (2), Pakistan (1), and South Africa (4). To our knowledge, this is the first report of bacterial blight on pomegranate caused by *X. axonopodis* pv. *punicae* in Turkey.

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