

ORIGINAL ARTICLE

First occurrence of *Pseudomonas fluorescens* in passion fruit plants in Brazil

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In 2014, in the municipality of Araguari, Minas Gerais State, Brazil, a 2-month-old commercial planting of yellow passion fruit (*Passiflora edulis* f. *flavicarpa* Deg) manifested the symptoms of plant wilt, dry tips (Figure 1A), water-soaked lesions on the stem (B), tendency to become necrotic (C and D), darkening of the inner medulla (E) and slight pus exudation from the trimmed points (F). The area had been previously cultivated with zucchini, potatoes and tomatoes. Exudation of bacterial cells from the infected tissue was observed under the microscope. Then, bacterial isolation was carried out on 523 media, where the colonies presented the following characteristics after 2-3 days incubation at 28 °C: white coloration, irregular edges, smooth and fluid aspect. The obtained strain showed Gram-negative reaction; fluorescence in KB medium, oxidation/fermentation: strict aerobe; growth at 37 °C; catalase positive reaction, and LOPAT group Va (- + - + -) (4). For the pathogenicity test, five yellow passion fruit plants aged approximately 2 months old were inoculated, by injection into the axil of the leaf, with a bacterial suspension at 10^9 CFU mL⁻¹ (OD₅₅₀ = 0.5). As control, plants were inoculated with 0.85% saline solution. The plants were maintained under high humidity for 24 hours before and after inoculation under greenhouse conditions. After 15 days, the symptoms of wilt and soaked spots (Figure 1G) were observed in the passion fruit plant from which the bacterium was reisolated. No symptoms were observed in control plants. Sequencing of the 16S rRNA gene region, using a universal primer pair 27F/1492R (2), was compared with the sequence deposited in GenBank and aligned closely with *Pseudomonas fluorescens* (GenBank MH127733.1), showing 99.9% similarity, query coverage of 99.9% sequence. Based on biochemical and molecular characteristics, the bacteria could be identified as *P. fluorescens*, the causal agent of wilt in passion fruit plants. Correct bacterium characterization and identification can support the disease management in the field, especially because wilt symptoms can be confused with those caused by *Ralstonia solanacearum* (Smith) Yabuuchi (1). However, there are not any reports of *P. fluorescens* infecting passion fruit plants in the world, although this bacterium has been already described infecting tomato plants in Brazil (3). Thus, to our knowledge, this is the first report of the occurrence of *P. fluorescens* causing wilt in passion fruit plants in Brazil. The isolate was deposited in the phytopathogenic bacterial collection of the Institute of Agricultural Sciences at the Federal University of Uberlândia, under the code UFU F41.



Figure 1. Wilt symptoms in passion fruit plants (A), water-soaked lesions on the stem (B), dark lesions at the trimmed points (C and D), vascular discoloration (E), pus exudation (F), and soaked spots (G) after inoculation, caused by *Pseudomonas fluorescens*.

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