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First Report of Stewart's Wilt of Maize in Argentina Caused by *Pantoea stewartii*

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Stewart's wilt is a serious disease of corn (*Zea mays* L.) caused by the bacterium *Pantoea stewartii* subsp. *stewartii* (*Pss*). Typical symptoms of infected fields and dent corn are longitudinal streaks with irregular or wavy margins, which are parallel to the veins and may extend the length of the leaf. These pale to green yellow lesions become dry and brown as the disease progresses producing a leaf blight (4). During the growing seasons 2010 to 2011 and 2011 to 2012, symptoms of bacterial leaf blight of corn were observed in central Argentina maize fields, with an incidence of 54% in Córdoba province. To identify the pathogen, leaves from 10 symptomatic maize plants per field were collected from 15 fields covering a representative geographical area. High populations of morphologically uniform bacteria were isolated from leaf tissues by conventional methods using King's medium B agar (2). Ten representative facultatively anaerobic gram-negative, non-fluorescing, non-motile, catalase positive and oxidase negative rod-shaped and yellow-pigmented bacterial isolates were evaluated further. The biochemical profile obtained was: fermentative metabolism, negative indol, acetoin and hydrogen sulfide production, negative gelatin hydrolysis (22°C), positive acid production from D-glucose and lactose, negative gas production from D-glucose, and negative nitrate reduction (1). All the isolates produced a 300-bp band with PCR using the species specific primer pair PST3581/PST3909c (3). The *Pss* ATCC 8199 and *Pseudomonas fluorescens* ATCC 13525 strains were used as positive and negative controls for the PCR assays, respectively. The pathogenicity test was performed by stem inoculation of five to ten P2069 YR maize plants (one to two leaf growth stage) grown in growth chamber. Plants were inoculated by syringe with a 10^7 to 10^8 cell/ml bacterial suspension and kept in a humid chamber at 25 to 27°C. Plants inoculated with *Pss* ATCC 8199 or with sterile water were used as positive and negative control treatments, respectively. The development of symptoms similar to those originally found in the field was observed on all the plants inoculated with the different isolates at 7 to 10 days post inoculation. In addition, symptoms on inoculated plants were similar to those observed for the positive control treatment. No symptoms were found on negative controls. Koch's postulates were fulfilled since bacteria isolated from symptomatic tissue had identical characteristics to isolates used to inoculate plants and to the reference *Pss* strain for biochemical tests and PCR reaction mentioned above. To our knowledge, this is the first report of *P. stewartii* subsp. *stewartii* isolated from diseased maize in Argentina.

References: (1) J. G. Holt et al. Page 179 in: Bergey's manual of determinative bacteriology. Williams and Wilkins, Baltimore, MD, 1994. (2) OEPP/EPPO. Bulletin OEPP/EPPO Bulletin, 36: 111, 2006. *Pantoea stewartii* subsp. *stewartii* diagnostic. (3) A. Wensing et al. Appl. Environ. Microbiol. 76:6248, 2010. (4) D. G. White Page 4 in: Compendium of corn disease. The American Phytopathology Society, 1999.
