

DISEASE NOTE

FIRST REPORT OF POTATO BROWN ROT CAUSED BY *RALSTONIA SOLANACEARUM* IN GEORGIA

M. Muradashvili, G. Meparishvili,
Z. Sikharulidze and S. Meparishvili

Department of Plant Diseases Monitoring, Diagnostics and Molecular Biology, Institute of Phytopathology and Biodiversity, Batumi Shota Rustaveli State University, 90, str. Tavisupleba, Kobuleti, 6200, Adjara, Georgia

Potato is one of the most important constituent of the human diet in Georgia. Potato brown rot caused by *Ralstonia solanacearum* is an economically important bacterial disease and the cause of severe damage to the potato industry. During 2011-2013 a survey of potato plantations and storage facilities in different potato-producing regions of Georgia, samples were collected of tubers with brown rot symptoms and wilted potato leaves and stems. Since 2010, bacterial wilt presumed to be caused by *R. solanacearum* has been an important disease in Georgia. The disease was first reported in tomato in Chkhorotsku and Kutaisi regions (west Georgia), where it caused up to 100% plant loss in greenhouse- and field-grown crops (Meparishvili *et al.*, 2012). Since then, several cases of this disease have been documented on potato in home gardens in the Kobuleti region. In 2012-2013, brown rot symptoms were detected in several commercial potato cultivars. i.e. Jelly, Marfona, Picasso, Finca, Agria, Alliance, Marabely in Khulo (west Georgia) and Akhaltsikhe (south Georgia). Bacteria isolated from wilted potato plants and rotten tubers produced typical pearly white, flat, irregular, fluidal colonies on CPG and fluidal, irregular in shape and milky white colonies with pink centers on SMSA media, respectively. These colonies were presumed to belong to *R. solanacearum*, thus their identity was sought and confirmed by specific PCR using the primer pair OLI/Y2 (Seal *et al.*, 1993). All tested isolates and positive control DNA extracted from *R. solanacearum* type strain NCPPB 325 produced the expected 288 bp product, confirming their identity as *Ralstonia solanacearum*. To the best of our knowledge, this is the first report on the presence of potato brown rot in Georgia.

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Corresponding author: Z. Sikharulidze
Fax: +995 422 271787
E-mail: zsikharulidze@gmail.com

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DISEASE NOTE

FIRST REPORT OF A “*CANDIDATUS PHYTOPLASMA SOLANI*” RELATED STRAIN ASSOCIATED WITH A POTATO REDDENING DISEASE IN GREECE

K.N. Moraki, V.I. Maliogka and N.I. Katis

Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Lab of Plant Pathology, 54 124 Thessaloniki, Greece

Potato (*Solanum tuberosum*), one of the most important crops worldwide, is susceptible to a high number of viruses and phytoplasmas. During the summer of 2013 symptoms similar to those caused by phytoplasmas, such as dwarfing, bright red discoloration, and rolling of the top leaves were observed in potato crops of cvs. Spunta and Jelly in Kastoria (40° 31'0 .12 “N21° 16'0 .12” E), Northern Greece. The affected plants were scattered in the field and their incidence ranged among the plots between 10% and 20%. In order to investigate the etiology of the aforementioned symptoms, leaves from 10 symptomatic and 10 asymptomatic plants of each variety were collected and subjected to DNA extraction. The extracts were tested using a generic nested PCR that targets the highly conserved 16S rRNA gene of phytoplasmas. More specifically, the universal primer set P1/P7 (Schneider *et al.*, 1995) was used in the first round of PCR, whereas R16F2n/R16R2 primers (Gundersen and Lee, 1996) were applied in the nested step. The expected PCR products of ca. 1200 bp were amplified from all samples coming from symptomatic plants but not from the asymptomatic ones. One amplicon from each variety was further sequenced in both directions and their BLAST analysis revealed 98% similarity with the sequences of several “*Candidatus Phytoplasma solani*” (16SrXII-A stolbur group) strains (e.g. Bulgarian strain 241/13, KF907506). The two Greek sequences were 99% similar between them and were deposited in the EMBL-EBI under the accession Nos HG531809 and HG792592. “*Ca. Phytoplasma solani*” is endemic in Greece and was first detected in *Datura stramonium* plants in the area of Thessaloniki (Macedonia, Northern Greece). However, this is to our knowledge the first report of a potato disease caused by a “*Ca. Phytoplasma solani*” related strain in our country.

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Corresponding author: V.I. Maliogka
Fax: +30.2310998854
E-mail: vmaliogka@agro.auth.gr

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