**Disease Note**

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

L. Lotos1, J.T. Tsialtas2, V.I. Maliogka1, N. Kaloumenos2, I.G. Eleftherohorinos2 and N.I. Katis1

1Aristotle University of Thessaloniki, School of Agriculture, Laboratory of Plant Pathology, 54124 Thessaloniki, Greece
2Aristotle University of Thessaloniki, School of Agriculture, Laboratory of Agronomy, 54124 Thessaloniki, Greece

Jimsonweed (*Datura stramonium*), family Solanaceae, a common weed in spring crops in Greece, includes two botanical varieties (var. *stramonium* and var. *tattula*). During a field trial at the Aristotle University Farm (40°32’N 22°59’E, 6 m asl), in which four accessions of *D. stramonium* were tested for growth rate and alkaloid content, phytoplasma-like symptoms were observed. Initially, the affected plants showed interveinal chlorosis of the upper leaves, stunting and flower malformation, whereas at maturity they did not form normal fruits and developed leaf necrosis. To investigate the possibility of a phytoplasma infection, DNA was extracted from leaf samples of symptomatic and apparently healthy plants of both varieties according to Psifidi et al. (2010). A nested PCR was performed using two universal primer sets specific to the phytoplasma 16S rRNA gene: P1/P7 (Schneider et al., 1995) followed by R16F2n/R16R2 (Gundersen and Lee, 1996). The expected ca. 1200 bp product, amplified exclusively from symptomatic plants of both varieties, was cloned and sequenced. BLAST analysis revealed 99% similarity with sequence AF248959 of stolbur phytoplasma (16S rXII group, *Ca. Phytoplasma solani*). Sequences from both varieties were identical, indicating infection by the same phytoplasma strain and were deposited in EMBL-EBI (accession Nos HE598778 and HE598779). Diseased plants of var. *tattula* and *stramonium* showed 49-69% and 38% reduction of the above-ground fresh weight, respectively, compared to healthy plants, hence making the phytoplasma an important pathogen of jimsonweed, which constitutes a reservoir plant in the field. This is, to our knowledge, the first report of a *Ca. Phytoplasma solani*-related disease in jimsonweed in Greece.


**Corresponding author: N.I. Katis**
Fax: +30.2310998854
E-mail: katis@agro.auth.gr
Received December 1st, 2011
Accepted February 1st, 2012

**Disease Note**

**FIRST REPORT OF PHYTOPHTHORA LACUSTRIS IN INDIA**

A.K. Das, S.G. Nerkar, S.S. Bawage and A. Kumar

Plant Pathology Laboratory, National Research Centre for Citrus, Amravati Road, Nagpur 440010, India

Phytophthora nicotianae, *P. palmivora* and *P. citrophthora* are the major *Phytophthora* species involved in citrus decline in India (Naqvi, 2006). Here we report for the first time *Phytophthora lacustris* (formerly *P. taxon salixsoil*) from India. It was isolated (isolate NRCPh112) from the rhizosphere of a citrus orchard in Sriganganagar (Rajasthan, India) in March 2011. *P. lacustris* was reported causing severe damages and mortality in *Prunus persica* orchards in Italy (Nechwatal et al., 2012). In liquid culture sporangia were non-caducous, non-papillate, ovoid to obpyriform, with an average (15 sporangia) length x breadth of 43.7×34 µm and an l/b ratio of 1.28. Internal and external proliferation of sporangia and hyphal swellings were observed, while chlamydospores were not produced. Isolate NRCPh112 induced setting of an A1 isolate of *P. nicotianae* when paired on carrot agar thus functioning as ‘silent A2’ mating type while all known *P. lacustris* isolates from Australia, Europe and the USA are of ‘silent A1’ mating type. Colony morphology at 25±1°C was petaloid or chrysanthemum-like on V8A juice agar (Hi-Media Biosciences, India) whereas uniform wooly colonies were formed on potato dextrose agar (PDA). The average daily growth rate at 25°C on V8A, PDA and corn meal agar (CMA) was 7.9, 5.9 and 7.1 mm per day, respectively. On CMA optimum and maximum temperature for growth were around 25 and 37°C, respectively. *P. lacustris* has similar morphology as *Phytophthora gonapodyides* but was identified by sequence analysis of the ITS (accession No. JQ424900), 36-tubulin (JQ520346) and translation elongation factor 1α (JQ520347) gene regions. The ITS sequence of isolate NRCPh112 showed 99% similarity with *P. lacustris* isolate ICMP16270 from New Zealand (JF804803; Nechwatal et al. [2012]).

We thank Indian Council of Agricultural Research for supporting this research.


**Corresponding author: A.K. Das**
Fax: +91-712-2500813
E-mail: dasashiskumar@hotmail.com
Received July 10, 2012
Accepted January 2, 2013