

DISEASE NOTE

FIRST REPORT OF *BLUEBERRY RED RINGSPOT VIRUS* IN HIGHBUSH BLUEBERRY IN SERBIA

D. Jevremovic, A. Leposavic and S. Paunovic

*Fruit Research Institute, Kralja Petra I 9,
32000 Cacak, Republic of Serbia*

The first survey for highbush blueberry (*Vaccinium corymbosum* L.) viruses in Serbia, carried out from 2011 to 2013, did not reveal any major problem caused by these pathogens as most of the symptoms observed could not be ascribed to on-going virus infections. Nevertheless, the presence of red ringspots on the leaves of a few isolated plants of cv. Bluetta, reminiscent of *Blueberry red ringspot virus* (BRRV, genus *Soymovirus*) infections (Caruso and Ramsdell, 1995), prompted further investigations. To this aim, a total of 60 samples were collected from various Serbian locations and submitted to BRRV-specific tests. DNA was isolated from fresh leaves using the DNeasy plant mini kit (Qiagen, Germany) following the recommended protocol. Primer set RR-13/RR-14, designed to amplify a portion of the CP gene of the BRRV genome, was used for PCR amplification under the conditions described in the literature (Glasheen *et al.*, 2002). BRRV was detected in two symptomatic plants of cv. Bluetta, therefore confirming field observations. Amplified DNA fragments of 487 bp were custom sequenced (Macrogen, Netherlands) and nucleotide sequences of these isolates were deposited in GenBank under the accession Nos. JX908370 and JX908371. BLAST analyses of these two PCR products revealed high levels of nucleotide identity (92.8-97.5%) with 19 sequences of BRRV available in GenBank. Serbian BRRV isolates appear closely related to the PDR-E isolate from Poland (accession No. JQ811996) as they share 97.5% common nucleotides. To our knowledge, this is the first report of BRRV in highbush blueberries in Serbia.

Work supported by a grant from the Serbian Ministry of Education, Science and Technological Development (Project No 31093).

Caruso F.L., Ramsdell D.C., 1995. Compendium of Blueberry and Cranberry Diseases. APS Press, St. Paul, MN, USA.

Glasheen B.M., Polashock J.J., Lawrence D.M., Gillet J.M., Ramsdell D.C., Vorsa N., Hillman B.I., 2002. Cloning, sequencing, and promoter identification of *Blueberry red ringspot virus*, a member of the family *Caulimoviridae* with similarities to the "Soybean chlorotic mottle-like" genus. *Archives of Virology* **147**: 2169-2186.

Corresponding author: D. Jevremovic

Fax: +38.1.32221391

E-mail: darkoj@ftn.kg.ac.rs

Received October 22, 2013

Accepted December 20, 2013

DISEASE NOTE

FIRST REPORT OF *TOBACCO STREAK VIRUS* IN CASTOR BEAN

**B.V. Bhaskara Reddy, L. Prasanthi, Y. Sivaprasad,
A. Sujitha and T. Giridhar Krishna**

*Regional Agricultural Research Station, Acharya N.G.Ranga
Agricultural University, Tirupati-517501, Andhra Pradesh, India*

Castor bean (*Ricinus communis* L.), family Euphorbiaceae, is indigenous to the southeastern Mediterranean Basin, India and East Africa. India is the world leader in castor bean production with 2.25 million tonnes in 2011, followed by China and Brazil. In March 2013, necrotic spots and vein mosaic were observed on the lower side of the leaves in a castor bean field at the Regional Agricultural Research Station, Tirupati, India. Based on the symptomatology, infection by *Tobacco streak virus* (TSV, genus *Ilarvirus*, family *Bromoviridae*) was suspected. The presence of TSV in symptomatic leaves was ascertained by DAS-ELISA using TSV polyclonal antibodies. RT-PCR using total RNA isolated from leaf tissue by the Trizol method and primers specific for the coat protein gene of TSV (CP-F, 5'AGCAGATGCCCAACTT-GTTT3'; CP-R, 5'AAGGGAGCTGGTTTGGATA3') (Bhat *et al.*, 2002) yielded a product 602 bp in size. The amplicon was cloned in pTZ57R/T vector (Fermentas, USA) and sequenced. The nucleotide sequence was deposited in GenBank as accession No. KC683810. Sequence analysis (BioEdit V7.0.5) showed more than 99% identity at the nucleotide level with 15 other TSV isolates infecting various crops. To the best of our knowledge this is the first report of the natural occurrence of TSV in castor bean.

We are very grateful to Dr. P. Lava Kumar, International Institute of Tropical Agriculture Ibadan for the gift of the TSV antiserum.

Bhat A.I., Jain R.K., Ramaiah M., 2002. Detection of tobacco streak virus from sunflower and other crops by reverse transcription polymerase chain reaction. *Indian Phytopathology* **55**: 216-218.

Corresponding author: B. V. Bhaskara Reddy

Fax : +91.877.2248031

E-mail: bvbreddy68@gmail.com

Received November 2, 2013

Accepted January 4, 2014