Disease Note

FIRST REPORT OF SEEDLING BLIGHT CAUSED BY *FUSARIUM SOLANI* ON CUCUMBER FROM INDIA

V. Shanmugam, K.H. Veena, S. Jain, M. Tripathi, R. Aggarwal and A.K. Singh

ICAR-Indian Agricultural Research Institute (IARI), New Delhi-110 012, India

In 2014 and 2015, cucumber (*Cucumis sativus* L.) seedlings in polyhouses of IARI initially exhibited water-soaked lesions on roots that turned reddish brown to get decayed. Leaves displayed yellowing and the plants exhibited wilting resulting in poor stands. A fungus isolated from infected tissues on potato dextrose agar displayed dense and white aerial mycelium, with orange sporodochia on old cultures. Microconidia were lemon to pear shaped with 0-1 septum. Macroconidia were sickle shaped with their basal cells distinctly foot shaped or notched. Based on these characters, the fungus was identified as *Fusarium solani* Mart. Sacc. (Nelson *et al*., 1983). The identity of the culture was also established by sequencing the internal transcribed spacer (ITS) region (GenBank Accession No. KU883629). The fungus exhibited 98% similarity with a *F. solani* isolate of guava causing vascular wilt (HQ265420.1). Pathogenicity tests were done twice in a screen house on 3-week-old plants of cv. Pusa Uday. Wounded healthy roots were submerged for 10 min in a conidial suspension (1×10^6 conidia per ml in sterile tap water), while control plants were dipped in sterile tap water. Seedlings were transplanted into pots containing sterile soil. Symptoms observed after 3 weeks on inoculated plants were similar to those in commercial polyhouses. The pathogen was re-isolated from the infected tissues to confirm Koch's postulates. The control plants did not exhibit symptoms. *F. solani* inciting vascular wilt in cucurbitaceous crops is reported elsewhere (Mehl and Epstein, 2007). This is the first report of *F. solani* infecting cucumber from India.

Mehl H.L., Epstein L., 2007. Identification of *Fusarium solani* f. sp. *cucurbitae* race 1 and race 2 with PCR and production of disease-free pumpkin seeds. *Plant Disease* **91**:1288-1292.

Nelson P.E., Toussoun T.A., Marasas W.F.O., 1983. *Fusarium* Species: An Illustrated Manual for Identification., Pennsylvania State University Press, State College, PA, USA

Corresponding author: V. Shanmugam
E-mail: shanpatho@yahoo.com

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Disease Note

FIRST REPORT OF FUSARIUM ROT CAUSED BY *FUSARIUM OXYSPORUM* ON GRAPEFRUIT IN PAKISTAN

F. Liaquat, S. Arif, A.R. Khan, I.H. Shah, H.J. Chaudhary and M.F.H. Munis

Department of Plant Sciences, Quaid-i-Azam University, Islamabad, 45320, Pakistan

During year 2014-2015, severe infection was observed on grapefruit plants in Rawalpindi and Islamabad Capital Territory (ICT), Pakistan. Symptoms appeared as brown, oval or round spots, with varying sizes ranging from small spot (5 mm) to decay of the entire fruit. Twenty-five infected fruits were collected, surface-sterilized and 3-mm-diameter sections were placed on potato dextrose agar (PDA) medium at 26°C. After 4 days, the mycelia of the isolates were delicate, creamy white and pink or purple tinge, and their margins slightly lobed or smooth. Microconidia were single, oval to reniform and monophialides type. Moon crest shape macroconidia were produced in sporodochium with multiseptum. Short aerial conidiophores were unbranched, producing one-cell conidia in false head (Hussain *et al*., 2012). The microscopic structure was similar to that of *Fusarium oxysporum*. Molecular identification of pathogen was achieved by its rDNA sequence analysis. Genomic DNA was extracted from a single pure colony of fungus and its 18S rDNA region was amplified (White *et al*., 1990). Sequence analysis showed 99% similarity with *Fusarium oxysporum* strain NSF2 18S ribosomal RNA gene, partial sequence (KR611565.1). This sequence was deposited in NCBI database (KX384665). To prove Koch's postulates, ten fruit were spray inoculated with isolated fungal conidial suspension (1×10^5 spores/ml of water). All inoculated fruit showed similar symptoms. No spots or lesions were observed on control fruits. *F. oxysporum* was re-isolated from the diseased fruits. To our knowledge this is the first report of *F. oxysporum* causing fruit rot on grapefruit.

Hussain M.Z., Rahman M.A., Islam M.N., Latif M.A., Bashar M.A., 2012. Morphological and molecular identification of *Fusarium oxysporum* Sch. isolated from guava wilt in Bangladesh. *Bangladesh Journal of Botany* **41**: 49-54.

White T.J., Burns T., Lee S., Taylor J., 1990. Amplification and direct sequencing of fungal ribosomal RNA genes for phylogenetics. In: Innis M.A., Gelfand D.H., Sninsky J.J., White T.J. (eds). PCR Protocols: A Guide to Methods and Applications, pp. 315-322. Academic Press, San Diego, CA, USA.

Corresponding author: M.F.H. Munis
E-mail: munis@qau.edu.pk

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