**Disease Note**

## FIRST REPORT OF GALL DISEASE IN MANGO TREES CAUSED BY *FUSARIUM DECEMCELLULARE* IN DOMINICAN REPUBLIC

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Malformed vegetative shoots were collected in mango orchards cv. 'Puntica' in Peravia, province of Dominican Republic during July-September 2013, the incidence ranged from 10 to 50%. *Fusarium* were consistently isolated on potato-dextrose-agar media. After 14 days of incubation at 28°C colonies developed intense rose pigmentation, macroconidia were 7-8 septate, 45.9-76.9×5.4-6.7 µm, with rounded apical cell and footlike basal cell; microconidia were ovoid, 0-1 septate, 5.3-12.4×2.0-4.6 µm. Based on morphology, the fungus was identified as *Fusarium decemcellulare* (Leslie and Summerell, 2006). DNA was extracted from a representative monosporic culture (EEFB-1). Elongation factor 1-alpha and beta-tubulin gene regions were amplified using EF1/EF2 and BT1/BT2 primers. PCR products were purified and sequenced. The obtained sequences of 683 and 193 bp were deposited in the GenBank (Accession Nos. KX345392 and KX345393). BLASTn analysis showed 99 and 86% homology with *F. decemcellulare* sequences HM054059 and HM054098. Pathogenicity tests were conducted on ten healthy 6-month-old mango plants cv. 'Puntica', by infiltration of 30 µl of a conidial suspension ($2\times10^6$ spores/ml) into apical bud. Ten control plants were infiltrated with sterile water. Inoculated shoots with *F. decemcellulare* showed excessive proliferation of axillary buds that remained protuberant or stunted and coriaceous, 8-9 months after inoculation. The fungus was reisolated only from diseased shoots, fulfilling Koch's postulates. Although *F. decemcellulare* has been previously reported causing mango's galls in Mexico, USA, Brazil and Puerto Rico (Angulo and Villapudua, 1982; Farr and Rossman, 2016), this is the first report of this pathogen on mango in Dominican Republic.

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**Disease Note**

## FIRST REPORT OF POWDERY MILDEW CAUSED BY *OIDIUM HELIOTROPII-INDICI* ON *HELIOTROPIUM INDICUM* IN INDIA

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Indian heliotrope (*Heliotropium indicum* L., family Boraginaceae) is an annual, herbaceous plant and a common weed in waste lands areas. During field surveys conducted between September to January 2015 a severe powdery mildew outbreak was observed in different areas of the Odisha State (India). Symptoms initially appeared as small circular to irregular white spots on both leaf sides, which expanded resulting in plant defoliation and drying. Conidia scraped from symptomatic leaves were ellipsoid to ovoid, had distinct fibrosin bodies and were 23-35×13-20 µm in size (l/w ratio 1.4-2.1). Conidiophores were erect, straight, slightly curved, cylindrical, foot cell 43 to 63×12 to 18 µm, followed by 1-3 shorter hyaline cells. Germ tubes stemmed from the lateral sides of the conidia. Based on the above, the fungus was identified as *Oidium heliotropii-indici* (Braun and Cook, 2002) in the *Podosphaera* section, *Sphaerotheca* subsection (Cook and Braun, 2009). *O. heliotropii-indici* and the anamorphic state of *Podosphaera fuliginea* cannot be easily distinguished on the basis of the appressorium morphology (Braun, 1987) and the main difference is the nipple shape in *O. heliotropii-indici* in contrast to the indistinct shape in *P. fuliginea*. Pathogenicity was confirmed by gently pressing an infected leaf on to the young leaves of five healthy potted *H. indicum* plants. Five non-inoculated plants were used as controls. Plants were maintained in a greenhouse at 28 to 30°C. Seven to ten days post inoculation, typical white patches appeared on the upper side of the inoculated leaves; they were morphologically similar to those observed on naturally infected plants whereas control plants remained symptomless. To the best of our knowledge, this is the first confirmed report of *O. heliotropii-indici* causing powdery mildew on *H. indicum* in India.

Braun U., 1987. A monograph of the Erysiphales (powdery mildews). Beih. *Nova Hedwigia* **89**: 1-700.

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Cook R.T.A., Braun U., 2009. Conidia germination patterns in powdery mildews. *Mycological Research* **113**: 616-636.

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