

## DISEASE NOTE

**FIRST REPORT OF FRUIT SPOT  
OF POMEGRANATE CAUSED  
BY *COLLETOTRICHUM  
GLOEOSPORIOIDES* IN IRAN**

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Pomegranate (*Punica granatum*) is one of the most important commercial fruit crop in eastern Mazandaran (Iran, 35°47'N, 50°34'E). During spring 2013, distinct dark brown spots were observed on pomegranate fruits, from which a fungus was isolated on standard potato dextrose agar (PDA) amended with streptomycin (0.05% w/v). The mycelium was white-grey turning olive green over time, and produced oval to cylindrical, hyaline, unicellular, aseptate conidia measuring 5-13×1.5-4 µm. Based on these morphological characters the mycete was tentatively identified as *Colletotrichum gloeosporioides*. The fungal internal transcribed spacer (ITS) region of r-DNA was then amplified using the primers ITS5/ITS4 sequenced locally and deposited under GenBank accession No. KJ769129. A sequence similarity search performed using BLAST (Altschul *et al.*, 1990) algorithm available via GenBank confirmed the identification as *C. gloeosporioides*. Pathogenicity tests were carried out by placing agar-discs from a six-day-old culture of the fungus onto five artificially injured pomegranate fruits, which were placed inside sterile plastic bags. Controls consisted of non-inoculated fruits. Symptoms were reproduced after six days only on inoculated fruits and the pathogen was subsequently re-isolated, fulfilling Koch's postulates. To our knowledge, this is the first report of *C. gloeosporioides* in pomegranate fruits in Iran.

Altschul S.F., Gish W., Miller W., Myers E.W., Lipman D.J., 1990. Basic local alignment search tool. *Journal of Molecular Biology* **215**: 403-410.

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## DISEASE NOTE

**DOWNY MILDEW  
OF FENUGREEK IN IRAN CAUSED BY  
*PERONOSPORA TRIGONELLAE***

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In April 2014, typical symptoms of downy mildew were observed on fenugreek (*Trigonella faenum-graecum*) plants grown in the Tabas region (Iran). A white to dark-gray mycelium was visible on the lower surface of the leaves, associated with chlorotic spots on the upper leaf surface. Conidiophores were hyaline, they branched dichotomously 6 to 10 times and measured 270-510 (average: 432) µm in length. The slightly brown, oblong to ellipsoidal conidia measured 22.5-30×17.5-20 µm (average: 26.3×18.8 µm). Oospores were yellow-brown, globose, and measured 30-42.5 µm (average 34.5 µm), whereas oogonia were globose, subglobose to irregular, 45-65 µm (average: 57 µm) in diameter. The internal transcribed spacer (ITS) region of rDNA was amplified using the primers ITS4/ITS5 and sequenced (GenBank accession No. KJ881163). BLAST analysis (Altschul *et al.*, 1990) showed 100% similarity with the comparable sequence of *Peronospora trigonellae* (GenBank accession No. GQ421459). For pathogenicity tests, the foliage of healthy fenugreek plants was sprayed with a suspension of sporangia. Inoculated plants were incubated a moist chamber at 18-20°C and 80-90% relative humidity for two days, then moved into a greenhouse. Twelve days post inoculation, typical symptoms of mildew developed on the inoculated but not on the control plants, thus fulfilling Koch's postulates. Downy mildew of fenugreek has previously been reported from Algeria, India, Pakistan, UK and USA (Rooney-Latham *et al.*, 2009), but not from Iran where, to the best of our knowledge, this represents its first record.

Altschul S.F., Gish W., Miller W., Myers E.W., Lipman D.J., 1990. Basic local alignment search tool. *Journal of Molecular Biology* **215**: 403-410.

Rooney-Latham S., Blomquist C.L., Turney J., 2009. First report of downy mildew caused by *Peronospora trigonellae* on Fenugreek in the United States. *Plant Disease* **93**: 1349.

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