

# plant disease

Editor-in-Chief: Mark L. Gleason  
Published by The American Phytopathological Society

[Home](#) > [Plant Disease](#) > [Table of Contents](#) > [Abstract](#)

[Previous Article](#) | [Next Article](#)

Accepted for publication  
<http://dx.doi.org/10.1094/PDIS-06-15-0628-PDN>

## First Report of *Fusarium hostae* Causing Crown Rot on Wheat (*Triticum* spp.) in Turkey

**Ms. Elfinesh Gebremariam**

Ankara University, School of Agriculture, Department of Plant Protection,, Ankara, Turkey;  
[elfshikur@yahoo.com](mailto:elfshikur@yahoo.com)

**Dr. Abdelfattah Dababat**, PhD

CIMMYT Turkey, CIMMYT Uluslararası Buğday ve Mısır Geliştirme Merkezi, Şehit Cem Ersever Caddesi No : 9/11, Tarla Bitkileri Araştırma Enstitüsü Kampüsü içi, Ankara, Ankara, Turkey, 06170; [a.dababat@cgiar.org](mailto:a.dababat@cgiar.org)

**Dr. Gul Erginbas**

CIMMYT-Turkey, Ankara, Turkey; [gul\\_erginbas@hotmail.com](mailto:gul_erginbas@hotmail.com)

**Prof. Aziz Karakaya**

Ankara University, Faculty of Agriculture, Department of Plant Protection Diskapi 06110 Ankara, Ankara, Turkey, 06110; [azizkarakaya@hotmail.com](mailto:azizkarakaya@hotmail.com)

**Dr. Dipak Sharma-Poudyal**

USDA-ARS, Root Disease and Biological Control Research Unit, Pullman, Washington, United States; [ds.poudyal@gmail.com](mailto:ds.poudyal@gmail.com)

**Dr. Timothy Carl Paulitz**, PhD

USDA-ARS, Root Disease and Biological Control Unit, Rm. 363 Johnson Hall, Washington State University, Pullman, Washington, United States, 99164-6430, 509 335-7077, 509 335-7674; [paulitz@wsu.edu](mailto:paulitz@wsu.edu)

[PDF Print](#) | [PDF with Links](#)

Crown rot disease of wheat is caused by a complex of *Fusarium* species. To identify species associated with crown rot in Turkey, crowns and stems of bread wheat (*Triticum aestivum* L.) and durum wheat (*T. durum* Desf.) were collected from the Central and Southeast Anatolia, Black Sea and Aegean regions in summer 2013. Crown and stem pieces were surface-disinfested with 1% sodium hypochlorite solution for 3 min, rinsed three times in sterile distilled water and dried on sterile filter paper. Sections were placed on peptone PCNB agar, a selective medium for *Fusarium* isolation and then transferred to Synthetischer Nährstoffarmer Agar (SNA) (Leslie and Summerell, 2006). Single conidia were isolated and monosporic *Fusarium* sp. cultures were identified as *F. hostae* by sequencing the translation elongation factor 1 alpha (TEF-1 $\alpha$ ) gene region using ef1 (5'-ATGGGTAAGGARGACAAGAC-3')



About the current issue's cover

Impact Factor: 3.02

ISSN: 0191-2917

### SEARCH

Enter Keywords

- Phytopathology  
 Plant Disease  
 MPMI

**search**

[Advanced Search](#)

### Resources

[About Plant Disease](#)

[First Look](#)

[Most Downloaded Articles](#)

[Submit a Manuscript](#)

[Customer Care](#)

[About My Password](#)

[Copyright and Permissions](#)

[Plagiarism and Ethics](#)

[Advertise](#)

[e-Xtra](#)

 [Open Access](#)

### Quick Links

[Add to favorites](#)

[E-mail to a colleague](#)

[Alert me when new articles cite this article](#)

[Download to citation manager](#)

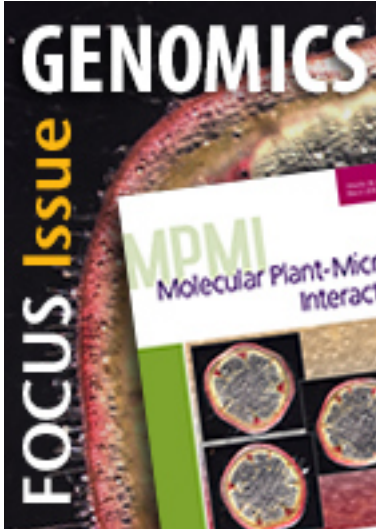
[Related articles found in APS Journals](#)



**CALL FOR PAPERS**  
Special Focus Issue

**Disease Management in the Genomics Era**

Submissions Due:  
February 1, 2016



and ef2 (5'-GGARGTACCAGTSATCATG3') primers (O'Donnell et al. 1998). The TEF gene sequences were analyzed with the NCBI GenBank database. Out of 339 isolates, 20 isolates were *F. hostae* and 17 had a 99% match with accessions of *F. hostae* (eg. DQ854862). *F. hostae* isolates were tested for their pathogenicity on susceptible durum wheat (*T. durum*) cultivar Kızıltan. Plastic tubes (2.5 cm in diameter and 16 cm in height) were filled with sterile sand, soil, and peat mixture (50:40:10, v:v:v). A PDA plug (1-cm diam.) was taken from the margin of a 7-day-old culture and placed in the tube. A single pregerminated seed was placed on the PDA plug and covered with sterile soil mix. A sterile agar plug was used as a control treatment. Each treatment was replicated 3 times, and the experiment was repeated to confirm the results. Scoring for disease severity was carried out nine weeks after inoculation, using a 1-5 scale based on the percentage area of the crown area that showed brown discoloration (1: 1-9%, 2: 10-29%, 3: 30-69%, 4:70-89%, 5: 90-99%) modified from Wildermuth and McNamara (1994). Scores ranged from 1 to 3 with an average of 2.2. The scores of seven isolates were significantly greater than the non inoculated control, and six isolates had scores of 3.0. Necrosis was observed on crowns of treated plants (Supp. Fig. 1), while control treatments showed no necrotic symptoms and were rated with a score of 1. For comparison, *F. culmorum* scores ranged from 2 to 5, with an average of 3.25. Re-isolation was carried out from crowns of both inoculated and control plants. The re-isolated cultures were confirmed as *F. hostae* by comparing their morphology with known cultures of *F. hostae* and no culture growth was observed from control plants. To our knowledge, this is first report of *F. hostae* causing crown rot on wheat in Turkey. *F. hostae* was first isolated from *Hosta* sp. in the U.S. (Geiser et al. 2001). *F. hostae* is closely related to *F. redolens* and has also been reported on *Hyacinthus* sp. in the Netherlands (Baayen et al. 2001). References: R. P. Baayen et al. Phytopathology 91: 1037, 2001. D. M. Geiser et al. Mycologia 93:670, 2001. J. F. Leslie and B.A. Summerell. The Fusarium Laboratory Manual. Blackwell Publishing, Oxford, UK. 2006. O'Donnell et al. Proceedings of the National Academy of Sciences of the United States of America 95: 2044, 1998. G.B. Wildermuth and R.B. McNamara. Plant Dis. 78:949, 1994