Journal of
Plant Biotechnology and Microbiology

Abstract

A First Record of Exserohilum rostratum as a New Pathogen Causing Bean Blight in Egypt.

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Abstract:

Seedling blight of bean (Phaseolus vulgaris L.) was recorded in bean fields at five different localities in Beni Sweif Governorate, Egypt. Symptoms appeared as green dark to purplish-brown spots, with brown margins. The affected plant leaves were collected for mycological analysis. Percentage of disease incidence were 30%, 25%, 22%, 15% and 35% in El-Wasta, Nasser, Beni Sweif, Sumosta and Beba counties respectively. Leaf samples were surface sterilized and cultured on potato dextrose agar. The growing fungi were identified on morphological as well as on molecular basis. Microscopic examination revealed that the isolated organisms have the same characteristics of Exserohilum rostratum (Drechsler) Leonard & Suggs. Among the 30 fungal isolates collected from the five bean plantations, a representative isolate was grown for DNA extraction, PCR and rDNA sequencing. Universal primers targeting ITS regions of the rDNA were used for PCR and sequencing. Results confirmed that the sequences of these fungi showed close relationship with E. rostratum with 99.6% - 100% similarity. The obtained sequences were deposited in the GenBank with accession numbers MT075801, MT071830, MT071831, MT071832, and MT071834. Pathogenicity tests confirmed that E. rostratum strains were pathogenic showing the same disease symptoms previously observed on bean plants in the study areas. The minimum temperature for spore germination was 5°C, the optimum temperature was 35°C, and the maximum temperature was 50°C. On the other hand, conidial germination was stopped at both lower

(3°C) and higher (55°C) temperatures. Studying the host range of the fungus showed that the pathogen was able to attack tomato, pepper, squash and potato beside common bean and watermelon.

Biography:

Reseacher of plant pathology institute at Agricultural Research Center

Publication of speakers:

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Citation: Farag MF A First Record of Exserohilum rostratum as a New Pathogen Causing Bean Blight in Egypt ; Plant Pathology 2020 August 21, 2020 | London, UK