# II. INTERNATIONAL IĞDIR SYMPOSIUM

9-11 October, 2017, Iğdır, Turkey

# ABSTRACT BOOK


## EDITORS

Assist. Prof. Dr. Yakup Erdal ERTÜRK
Assist. Prof. Dr. Melekşen AKIN
Assist. Prof. Dr. Mehmet Selman KOBANOĞLU
Res. Assist. M.A. Nilden ERGÜN


IĞDIR ÜNİVERSİTESİ
2008

www.igdir.edu.tr

# II. International Iğdır Symposium

# Abstract Book

October 9-11, 2017

Karaağaç Kampüsü, Iğdır

E-ISBN: 978-605-82038-0-8

# Morphological, pathogenic and molecular characterization of Globisporangium ultimum causing stem and root-rot disease of bean plants grown in Diyarbakır Province of Turkey

**Osman Çiftçi Diyarbakir[1], Sibel Derviş[2], Şahimerdan Türkölmez[3], Çiğdem Ulubaş Serçe[4]**

[1]Plant Protection Research Station, Diyarbakir, Turkey.

[2]Mardin Artuklu University, Vocational School of Kızıltepe, Mardin, R_Turkey.

[3]GAP Agricultural Research Institute

[4]Niğde Ömer Halisdemir University, Faculty of Agricultural Science and Technologies

**Abstract**

Bean, Phaseolus vulgaris L., is an economic important herbaceous annual legume plant in the family Fabaceae. It is amongst the most widely cultivated legumes of the world for its delicious seeds having high protein content like other legume seeds. In mid-June2016, we observed bean plants belonging to cv. Ayşekadın at near harvest stage in a commercial field located in Hanzo District of Diyarbakır Province (Southeastern Anatolia) with necrotic taproots and few lateral roots. Infected hypocotyls above the soil line and lower stems had light brown lesions, and plants showed symptoms of wilting. Within a month, the incidence of the affected plants grown in this 30 da field reached 50%. Tissue fragments of 1 mm2 were excised from the root and stem lesion of infected plants, dipped in a solution containing 1% sodium hypochlorite, and plated on grated apple corn meal agar (GACMA) amended with P5ARPH. Plates were incubated at 22°C for 5 days. A Pythium-like organism was consistently isolated from tissues. Growing hyphal tips of isolates were transferred onto V8 medium for production of sexual structures. All isolates were identified as Globisporangium ultimum (Syn: Pythium ultimum) based on the morphological characters of sporangia, oogonia, antheridia, oospores and hyphal swellings. To confirm Koch's postulates, two isolates were tested for pathogenicity against bean (cv. Ayşekadın) by placing colonized GACMA plugs or GACMA alone next to the crown. Symptoms similar to those observed in the field on bean developed on inoculated plants and the pathogen was reisolated. Controls did not develop disease. The internal transcribed spacer (ITS) region of rDNA of a single isolate was amplified using the ITS6/ITS4 primer pair and sequenced. BLAST analysis of the ITS sequence (GenBank Accession No MF536533) showed a 100% homology with the corresponding sequences of many isolates of G. ultimum in GenBank and confirmed our identification of this isolate as G. ultimum. Collar and root rot caused by G. ultimum affects bean plants in many regions of the world. The pathogen was also reported in Hatay and Samsun provinces of Turkey. No published information exists, however, on the existence of this pathogen in the Southeastern Anatolia Region (Diyarbakır). Besides, this is first report of molecular characterization of G. ultimum in Turkey.

**Keywords:** Phaseolus vulgaris L., Hanzo District, GenBank