

## Short *Report*

# FIRST REPORT OF ISOLATION AND PATHOGENICITY OF *FUSARIUM Compactum* ON SAFFLOWER<sup>\*</sup>

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### Abstract

Safflower (*Carthamus tinctorius* L.) of the family *Asteraceae* is an annual broadleaf oilseed crop with 35-40 % oil. It was originated from southern Asia and is known to have been cultivated in China, India, Iran and Egypt. In Iran the safflower cultivation area has increased over 10000 ha in 2008. Some pathogenic fungi such as *Pythium ultimum*, *Phytophthora drechsleri*, *Puccinia carthami*, and *Fusarium oxysporum* f. sp. *carthami* affect safflower crop in the country. During summer of 2011 safflower plants showing yellowing and wilting were collected from fields in Bajgah, Shiraz (Fars province). Segments of root and crown were surface sterilized using 0.5% sodium hypochlorite, plated on acidified PDA and incubated at 25 °C. The growing colonies were purified using single spore method. The colonies appeared yellow pink on PDA. Carnation leaf agar was used for macroconidium formation. Macroconidia were curved with five septa; Chlamydospores were round and verrucose; no microconidia were produced. The colonies on acidified PDA at room temperature produced light yellow aerial mycelium and appeared dark pink when looked upon at the back of Petri plates. Based on morphological features and available sources such as Nelson *et al.* (1983), Burgess *et al.* (1994) and Leslie and Summerell (2006), the fungus was identified as *Fusarium compactum*. This fungus has been previously reported from Iran on wheat by Zare and Ershad (1997). To study the pathogenicity of the fungus to safflower, an inoculum was prepared according to Westerlund *et al.* (1974). The fungus was grown on millet seeds. The colonized seeds were placed around crown and roots of 14-day old and 60- day old safflower plants and grown under greenhouse conditions. After four weeks, the inoculated plants developed leaf yellowing and root and crown necrosis. The fungus was reisolated from infected plants and identified to fulfill the Koch's postulates.

BURGESS, L.W., SUMMERELL, B. A., BULLOCK, S., GOTT, K .P., and BACKHOUSE, D. 1994. **Laboratory Manual for *Fusarium* Research**. Department of Crop Science, University of Sydney Press.

LESLIE, J. F., and SUMMERELL, B. A. 2006. **The *Fusarium* Laboratory Manual**. Blackwell Publishing, Ames, IA, USA.

NELSON, P. E., TOUSSOUN, T. A., and MARASAS, W. F. O. 1983. ***Fusarium* Species, an Illustrated Manual for Identification**. The Pennsylvania State University Press USA.

WESTERLUND, F. V., CAMPBELL, R. N., and KIMBLE, K. A. 1974. Fungal root rots and wilt of chickpea in California. **Phytopathology**. 64: 432-436.

ZARE, R. and ERSHAD, D. 1997. *Fusarium* species isolated from cereals in Gorgan area. **Iran. J. Plant Pathol.** 33: 1-14. (In Farsi With English Summary).

