

EVALUATION OF RELATIVE RESISTANCE OF SIX SUNFLOWER CULTIVARS TO *Alternaria alternata* *

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Abstract

Leaf spot disease is one of the most destructive foliar diseases of sunflower. The use of resistant genotypes is potentially one of the most economical means for the disease control. A greenhouse assay was used to evaluate resistance of six sunflower cultivars, namely Dorsefid, Ghalami, Pestei, Master-op, Azargol, and Euroflor against three isolates of *A. alternata*. The isolates showed significant differences in pathogenicity. The reactions of cultivars to fungal isolates were different; however, none of the cultivars showed high levels of resistance. This is the first study on the evaluation of partial resistance of some of the sunflower cultivars to the *Alternaria* leaf spot disease in Iran.

Keywords: Oil types, Confectionary types, Sunflower, Resistance.

See Persian text for figures and tables (Pages ۲۷-۲۸).

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References

- ANONYMOUS. 2010. **Agribusiness Handbook: Sunflower crude and refined oils**. FAO/EBRD. 39 p.
- BHUTTA, A. R. 1998. **Biological studies on some fungi associated with sunflower in Pakistan**. PhD. Thesis, Submitted to Sindh Agriculture University, Tandojam, Pakistan. 180 p.
- CHATTOPADHYAY, C. 1999. Yield loss attributable to *Alternaria* blight of sunflower (*Helianthus annuus* L.) in India and some potentially effective control measures. **Intl. J. Pest Manage.** 45 (1): 15-21.
- DUAN, W. J., ZHANG, X. Q., YANG, T. Z., DOU, X. W., CHEN, T. G., LI, S. J., JIANG, S. J., HUANG, Y. J. and YIN Q. Y. 2010. A novel role of ammonia in appressorium formation of *Alternaria alternata* (Fries) Keissler, a tobacco pathogenic fungus. **J. Plant Dis. Protec.** 117 (3): 112–116.
- KINTZIOS, S., KOLIOPOULOS, A., KARYOTI, E., DROSSOPOULOS, J., HOLEVAS, C. D., GRIGORIU, A. and PANAGOPOULOS, C. G. 1996. In vitro reaction of sunflower (*Helianthus annuus* L.) to the toxin(s) produced by *Alternaria alternata*, the causal agent of brown leaf spot. **Phytopathology** 144: 465-470.
- LAGOPODI, A. L. and THANASSOULOPOULOS, C. C. 1998. Effect of a leaf spot disease caused by *Alternaria alternata* on yield of sunflower in Greece. **Plant Dis.** 82 (1): 41-44.
- RARANCIUC, S. and PACUREANU-JOIPA, M. J. 2002. Evaluation of some sunflower genotypes concerning the reaction to *Alternaria* spp. Pathogen. **Rom. Agric. Res.** 17 (18): 29-40.
- ROTEM, J. 1998. **The Genus *Alternaria*: Biology, Epidemiology, and Pathogenicity**. 2nd ed., APS Press., 326 pp.
- SIMMONS, E. G. 2007. ***Alternaria*: An Identification Manual**. CBS Laboratory Manual Series No.6. 775pp.
- SOLEIMANI, M. J. and KIRK, W. 2012. Enhance resistance to *Alternaria alternata* causing potato brown leaf spot disease by using some plant defense inducers. **J. Plant Protection Res.** 52 (1): 83-90.
- VELEZ, H., GLASSBROOK, N. J. and DAUB, M. E. 2008. Mannitol biosynthesis is required for plant pathogenicity by *Alternaria alternata*. **FEMS Microbiol. Lett.** 285 (1): 122–129.