

Effect of fungicide seed treatment on control of cereal cyst nematode *Heterodera filipjevi* on wheat with different levels of genetic resistance

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Abstract

This study was carried out to investigate the influence of a fungicide FO EZA 14510 used as a seed coating to determine its efficacy in reducing infection of the sedentary cereal cyst nematode *Heterodera filipjevi* and possible interactions with wheat germplasm having different genetic sources of resistance under controlled condition in ATEAM, Eskisehir, Turkey. The three different susceptible S wheat germplasm (Seri, Bezostaya & Gerek) and three moderately resistant MR wheat germplasm (F130L 1.12/ATTAILA, Katea & Sonmez) were tested at increasing fungicide concentrations of 25 g ai/100 kg seed, 50 g ai/100 kg and 100 g ai/100 kg seeds. The fungicide was applied as standard seed coating used to control damping-off fungi. The MR germplasm gave a significant reduction in nematode reproduction in terms of *H. filipjevi* cyst number per root system when compared to the Susceptible S germplasms. A significant reduction in cyst number was observed on the S germplasms Seri (3.8 ± 1.5), Gerek (5.4 ± 2.6) and Bezostaya (6.4 ± 2.0) when the seed was treated with the fungicide. The plant growth parameters were not significantly increased by the seed treatment when compare with control as measured by plant height, shoot weight, root length and root weight. However, the greatest increase in shoot height was detected on the fungicide treated and moderately resistant germplasm. No phytotoxicity symptoms were observed on the plant at any of the fungicide concentrations used. The results demonstrated the presence of an interaction between fungicide and specific types of germplasm and fungicide seems to increase plant resistance to *H. filipjevi* infection by mechanisms still to be identified.

Key Words: Germplasm, pesticide interactions, Seed treatment, tolerance