EVALUATING THE EFFECT OF FUSARIUM SPECIES ON SEED GERMINATION AND LEAF OF MILLET

Abbasali Vaziry\textsuperscript{a}, Abbas Mohammadi\textsuperscript{a} and Mostafa Darvishnia\textsuperscript{b}

\textit{a} Department of Plant Pathology, College of Agriculture, University of Birjand, Birjand. \\
\textit{b} Department of Plant Pathology, College of Agriculture, Lorestan University, Khorramabad. \\
*Corresponding author: vaziry90@birjand.ac.ir

ABSTRACT
This study was conducted to evaluate the effect of mycotoxins from \textit{Fusarium} species isolated from cereals in South Khorasan province, on seed germination and leaf tissue of millet, \textit{Panicum miliaceum}. Several isolates of \textit{Fusarium} species were recovered from soil and cereal tissues during 2014-2016 from Birjand and Tabas plains in the South Khorasan province. Mycotoxins were isolated from 21 days’ culture in Czapek broth medium using chloroform solvent and then dissolved in distilled water. Effect of extracted mycotoxins on millet grain examined by floating the seeds in mycotoxins solution for 3 - 4 hours and culturing in sterilized petri dishes with filter paper. The inoculated seeds were kept at 25\(^\circ\)C for the period of one month and seed germination percentage was compared with the control which treated by distilled water. Fungal toxins were injected into the seedling leaves and inoculated plants were kept at approximately 25/20\(^\circ\)C day/night under greenhouse condition and tissues discoloration were studied after one week. In some inoculated seedling, chlorosis and necrosis was observed in the injected tissues. Results of this study showed that mycotoxins of 5 isolates inhibited millet seeds germination completely. Mycotoxins of several isolates reduced seed germination from 39 to 72\%. Mycotoxins of 7 isolates induced chlorosis and necrosis in millet leaf tissues after one week. According to this data, \textit{Fusarium} isolates from South Khorasan province can effect on seed germination and tissues health by toxic metabolites producing.

\textbf{Keywords:} Cereals, \textit{Fusarium}, Millet, Mycotoxin,