#### **ABSTRACT OF THESIS**



## Hungarian University of Agriculture and Life Sciences

### **Georgikon Campus**

Plant Protection Institute, Keszthely. SEED-INFECTING FUNGAL DISEASES OF TWO MAJOR MONOCOT WEEDS IN HUNGARY

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#### Abstract

The purpose of the study was to investigate the fungal seed diseases affecting two major monocotyledonous weed species -Panicum miliaceum and Echinocloa crus-galli- within Hungary. The seeds of Panicum miliaceum used for the study were collected from Keszthely in the years 1985 and 2007 while the seeds of Echinocloa crus galli were collected from Keszthely and Szombathely regions in the year 2010. The experiment was set in two repetitions with 50 seeds each; therefore, a total of 100 seeds were germinated per sample. Seeds were arranged on the Petri dishes containing moistened filter papers and then covered. The seeds were incubated for 14 days, at a temperature of 24 degrees Celsius in a thermostat. During this time visual scans on potential early infection were done on day 7 and thereafter on day 14, a visual examination was done followed by a microscopic examination of the infected seeds. Microscopic identification of fungal genera was performed on the infected seeds. Fungal genera identified significantly comprised of a group of fungi belonging to the class Ascomycetes. The most abundant genera identified were Fusarium, Alternaria, and Aspergillus. Based on analysis of the results, out of the total of 400 seeds examined, Fusarium was the most dominant with 44.25 %, Alternaria (21.25%), and Aspergillus (16.25%). Barnyard grass (Echinochloa crus-galli)showed a higher likelihood of susceptibility to genera Fusarium, Alternaria, and Aspergillus compared to Panicum miliaceum. Monocot weeds in Hungary are susceptible to fungal infestation that causes heavy losses, and it is therefore recommended to use holistic Integrated Pest Management (IPM) approaches to control fungal diseases and reduce reliance on fungicides.