View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by University of Saskatchewan's Research Archive

A Study of Fungal Biodiversity in the Root of Durum Wheat, Chickpea and Pea in Agro-Ecosystems of Saskatchewan

Ahmad Esmaeili Taheri[1], Chantal Hamel[2], Vladimir Vujanovic[3] and Yantai Gan[4].

1- Ahmad Esmaeili Taheri, Department of Food and Bioproduct Sciences, College of Agriculture and Bioresources, University of Saskatchewan and Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, SK.
2- Chantal Hamel, Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, SK.
3- Vladimir Vujanovic, Department of Food and Bioproduct Sciences, College of Agriculture and Bioresources, University of Saskatchewan.
4- Yantai Gan, Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, SK.

A wide spectrum of fungi from pathogens to mutualistic symbionts exists in plant roots. Improving crop production and sustainability requires comprehensive knowledge about different fungal groups in agricultural systems. More than 2500 fungal isolates were obtained from about 1700 pieces of surface sterilized durum, pea and chickpea roots on PDA. 125 Operational Taxonomic Groups (OUTs) were made out of these isolates based on colony color, morphology and hyphal architecture. Genomic DNA extracted from pure cultures of representative isolates using QIAGEN DNeasy Plant Kits according to supplier's protocol. Extracted DNA were stored at -20º C before PCR. PCR amplification were done using different primers of ITS, Small and Large subunits of ribosomal genes in addition to elongation factor gene (for *Fusarium spp.*). Obtained sequenced were compared with existing databases. Identified fungi belong to the genera: *Fusarium, Bionectria, Periconia, Myrothecium, Microdochium, Bipolaris, Gaeumannomyces, Mucor, Penicillium,* and *Trichoderma. Fusarium* is the most dominant genus among the identified fungi.