Development of a disease risk assessment tool for *Fusarium* species

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Abstract:

Fusarium species are important soilborne pathogens with wide host range. Diseases caused by pathogenic *Fusarium* species are known to be ubiquitous here in Canada. The development of a disease risk assessment tool for the identification and quantification of *Fusarium* species would aid in determining the mitigation of threats caused by pathogenic *Fusarium* species. In 2020, thirty-two soil samples were collected from two crop rotation study locations (Carman and Kellburn) in Manitoba, Canada. Fifty-one fungal isolates were collected and were morphologically characterized as *Fusarium* species. Sequencing of the *TEF1α* gene identified the species as *Fusarium oxysporum*, *F. solani, F. redolens*, *F. merismoides*, and *F. commune*. In 2021, diseased soybean plants were collected from the same two locations and were utilized for *Fusarium* isolation. Seventy fungal isolates were characterized as *Fusarium* isolates. Preliminary results of the *TEF1α* gene sequences from diseased soybean plants revealed collections of *F. oxysporum*, *F. redolens*, and *F. equiseti*. These collections of *Fusarium* species are currently being used for the development of a disease risk assessment tool for soil and plant samples.