Plant Pathology Seminar Series

"Improvement of On-Site, Molecular Detection of *Spongospora subterranea* f. sp. *subterranea* and other Soilborne Pathogens of Potato"

Joseph DeShields

Accurate and rapid identification of causative pathogens significantly impacts decisions regarding plant disease management. Soilborne diseases are particularly difficult to diagnose because the soil environment is extremely large, relative to plant mass, and complex, making it a challenge to understand all the aspects of soilborne diseases. Moreover, soilborne diseases can be symptomless during early infection stages, dependent on environmental stressors, and some have long latent periods that result in delayed diagnoses. On-site diagnosis of plant diseases can be a useful tool for growers. It can enable timely decisions enabling the earlier implementation of disease management strategies reducing the impact of the disease. Presently in many diagnostic labs, polymerase chain reaction (PCR), particularly real-time PCR, is considered the most sensitive and accurate method for plant pathogen detection. However, laboratory-based diagnoses typically require expensive laboratory equipment and skilled personnel. In the current study, soilborne pathogens of potato are used to demonstrate the potential for on-site molecular detection using a variety of methods such as portable qPCR, loop-mediated isothermal amplification (LAMP) and recombinase polymerase amplification (RPA).

4:10 pm | Tuesday, April 2 | Johnson Hall 343
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